2007-2008 TRANSMISSION

Automatic Transmission - Element

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07GAB-PF50101 or 07GAB-PF50100	Mainshaft Holder	1
②	07GAD-SD40101	Attachment, 78 x 90 mm	1
③	07GAE-PG40200 or 07GAE-PG4020A	Clutch Spring Compressor Bolt Assembly	1
④	07HAJ-PK40201	Preload Inspection Tool	1
⑤	07JAB-001020A	Holder Handle	1
⑥	07JAD-PH80101	Oil Seal Driver Attachment	1
⑦	07JAF-SJ80110	Installer Shaft, 14 x 165 mm	1
⑧	07JAF-SJ80120	Installer Nut, 14 mm	2
⑨	07KAF-PS30120	Bearing Installer Attachment	1
⑩	07LAD-PW50601	Attachment, 40 x 50 mm	2
⑪	07LAE-PX40100	Clutch Spring Compressor Attachment	1
⑫	07LAF-PZ70110	Bearing Installer Attachment	1
⑬	07MAJ-PY4011A	A/T Pressure Hose, 2,210 mm	3
⑭	07MAJ-PY40120	A/T Pressure Hose Adapter	3
⑮	07QAD-P0A0100	Attachment, 42 mm I.D.	1
⑯	07RAB-TB4010A or 07RAB-TB4010B	Companion Flange Holder	2
⑰	07SAZ-001000A	Backprobe Set	2
⑱	07ZAE-PRP0100	Clutch Compressor Attachment	1

⑪: 07HAE-PL50101 may also be used to substitute one of these tools.

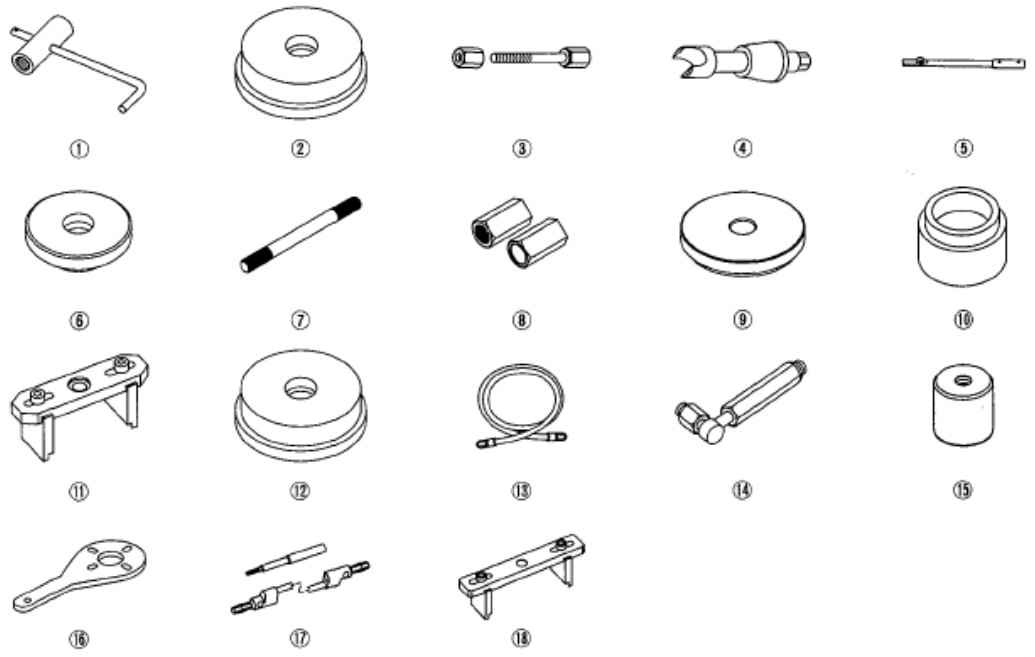


Fig. 1: Identifying Special Tools (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Ref. No.	Tool Number	Description	Qty
⑲	07406-0020400 or 07406-0020401	A/T Oil Pressure Gauge Set W/Panel	1
⑳	07736-A01000B or 07736-A01000A	Adjustable Bearing Puller, 25—40 mm	1
㉑	07746-0010100	Attachment, 32 x 35 mm	1
㉒	07746-0010200	Attachment, 37 x 40 mm	1
㉓	07746-0010300	Attachment, 42 x 47 mm	1
㉔	07746-0010400	Attachment, 52 x 55 mm	1
㉕	07746-0010500	Attachment, 62 x 68 mm	1
㉖	07746-0010600	Attachment, 72 x 75 mm	1
㉗	07746-0010800	Attachment, 22 x 24 mm	1
㉘	07746-0030100	Driver, 40 mm I.D.	1
㉙	07746-0030400	Attachment, 35 mm I.D.	1
㉚	07749-0010000	Driver	1
㉛	07947-SD90101	Oil Seal Driver Attachment	1
㉜	07947-ZV00100	Oil Seal Driver Attachment	1

⑳: Must be used with commercially available 3/8 "-16 slide hammer.

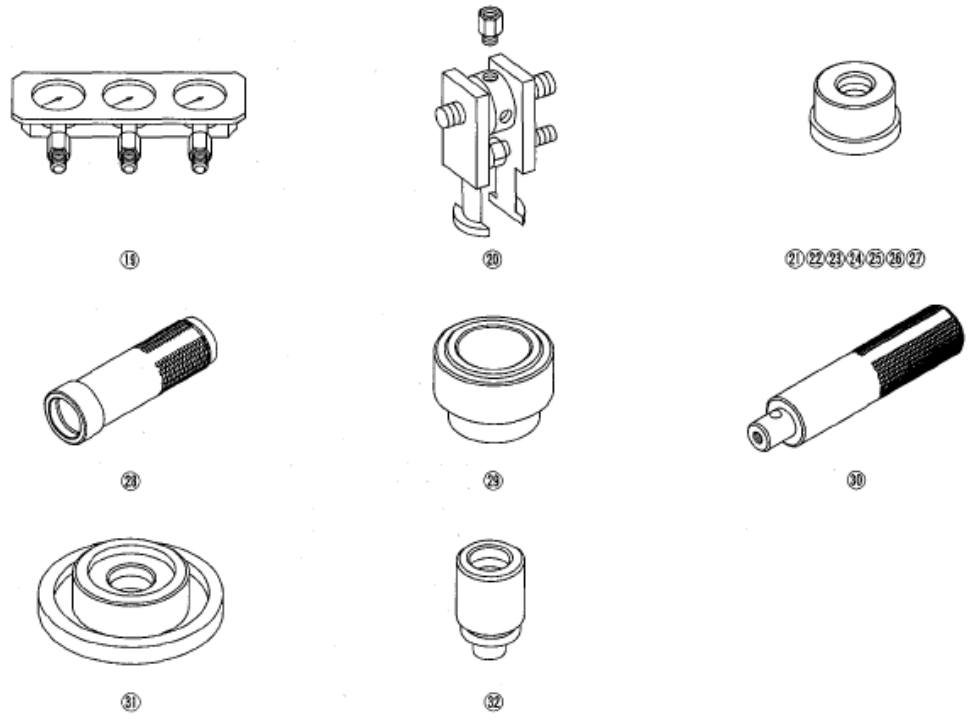


Fig. 2: Identifying Special Tools (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HONDA DIAGNOSTIC SYSTEM

When the powertrain control module (PCM) senses an abnormality in the input or output systems, the D indicator (A) in the gauge control module (B) will usually blink.

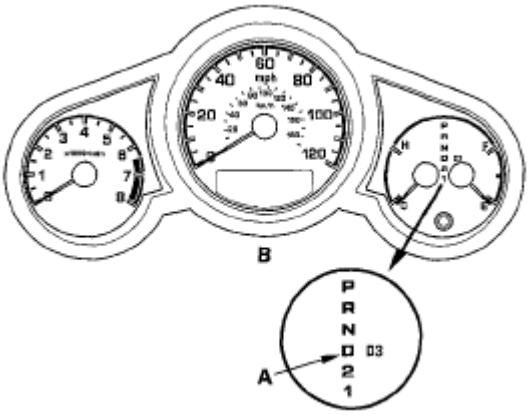


Fig. 3: Identifying D Indicator In Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the Honda Diagnostic System (HDS) is connected to the data link connector (DLC) (A) (located under the driver's side of the dashboard), it will indicate the diagnostic trouble code (DTC) when the ignition switch is turned ON (II) and an appropriate menu is selected.

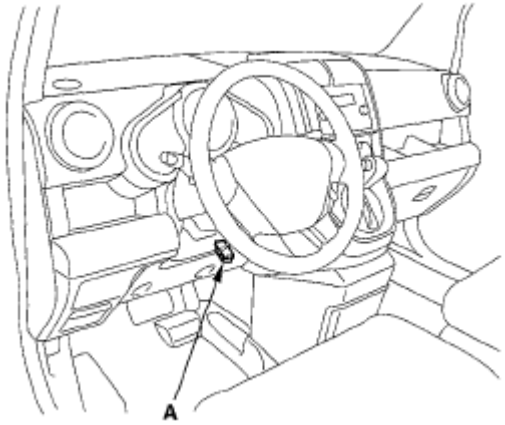


Fig. 4: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the D indicator or malfunction indicator lamp (MIL) has been reported on, or if a driveability problem is suspected, do this:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the ignition switch ON (II), select A/T system and observe the DTC in the DTCs MENU on the HDS screen.

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).

3. Record all fuel and emissions DTCs, A/T DTCs, and freeze data.

4. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC.
5. Clear the DTC and data.
6. Drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, and then recheck for a DTC. If the A/T DTC returns, go to the indicated DTCs troubleshooting. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

SYMPTOM TROUBLESHOOTING VERSUS DTC TROUBLESHOOTING

Some symptoms will not trigger diagnostic trouble codes (DTCs) or cause the D indicator to blink. If the malfunction indicator lamp (MIL) was reported on or the D indicator has been blinking, check for DTCs. If the vehicle has an abnormal symptom, and there are no DTCs stored, do the symptom troubleshooting. Check the list of probable cause(s) for the symptom, in the sequence listed, until you find the problem.

HOW TO CHECK FOR DTCS WITH THE SCS MODE (RETRIEVING THE FLASH CODES)

NOTE: The preferred method is to use the HDS to retrieve the P-code.

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

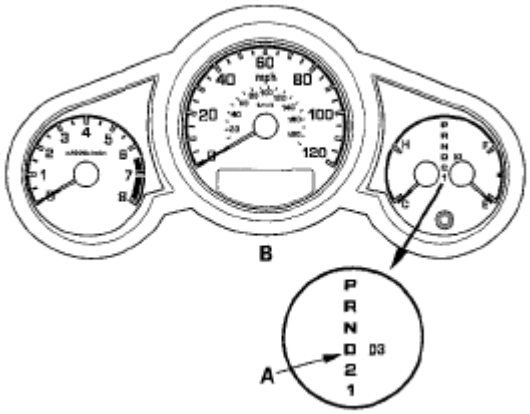


Fig. 5: Identifying D Indicator In Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the D indicator has been reported on, connect the HDS to the DLC (A) (located under the driver's side of the dashboard). Turn the ignition switch ON (II), select SCS mode, then the D indicator will indicate (blink) the DTC.

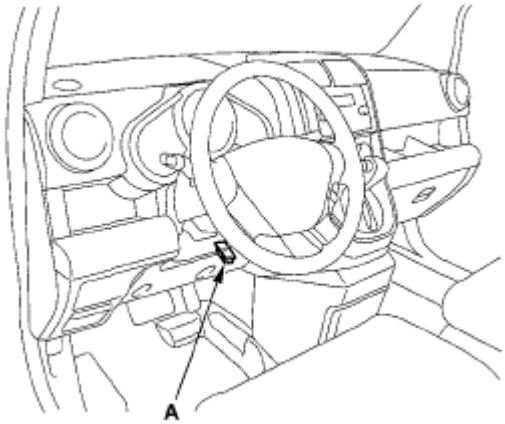


Fig. 6: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

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

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).

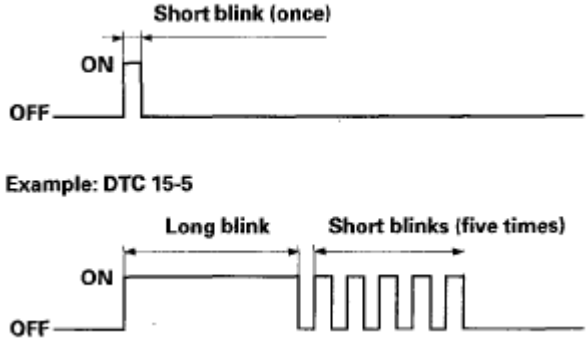


Fig. 7: Data Link Connector - Blinking Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Record all fuel and emissions DTCs and A/T DTCs.
4. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC.
5. Clear the DTC and data.
6. Drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, and then recheck for DTC. If the A/T DTC returns, go to the indicated DTCs troubleshooting. If the DTC

does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

HOW TO TROUBLESHOOT CIRCUITS AT THE PCM

Special Tools Required

- Digital multimeter KS-AHM-32-003 (1) or a commercially available digital multimeter
- Backprobe set 07SAZ-001000A (2)

1. Connect the backprobe adapters (A) to the stacking patch cords (B), and connect the cords to a digital multimeter (C).

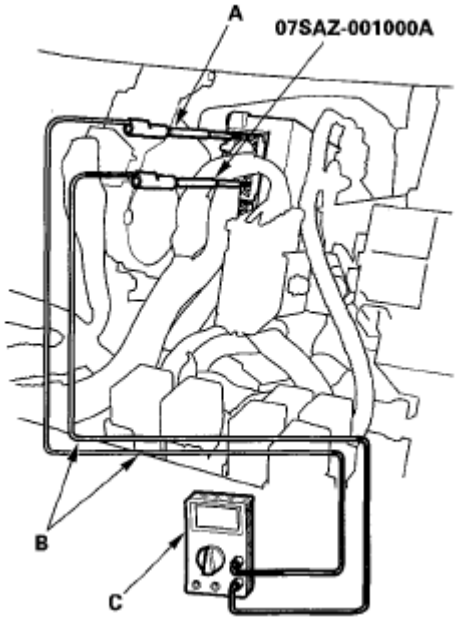


Fig. 8: Connecting Backprobe Adapters To Stacking Patch Cords
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Using the wire insulation as a guide for the contoured tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it touches the end of the wire terminal.
3. If you cannot get to the wire side of the connector or the wire side is sealed (A), disconnect the connector and probe the terminals (B) from the terminal side. Do not force the probe into the connector.

NOTE: Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

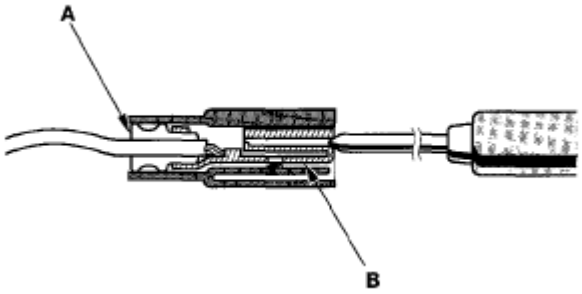


Fig. 9: Probing Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLEAR A/T DTCS PROCEDURE

1. Connect the HDS to the DLC.
2. Turn the ignition switch ON (II).
3. Clear the DTC(s) on the HDS screen.

PCM RESET PROCEDURE

1. Connect the HDS to the DLC.
2. Turn the ignition switch ON (II).
3. Reset the PCM with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II), and wait for 30 seconds.
6. Turn the ignition switch OFF, and disconnect the HDS from the DLC.
7. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

OBD STATUS

The OBD Status shows the current system status of each DTC and all of the parameters. This function is used to see if the technician's repair was successfully finished. The results of diagnostic tests for the DTC are displayed as:

- PASSED: The on-board diagnosis is successfully finished.
- FAILED: The on-board diagnosis has finished but failed.
- NOT COMPLETED: The on-board diagnosis was running but is out of the enable conditions of the DTC.

HOW TO END A TROUBLESHOOTING SESSION

This procedure must be done after any troubleshooting.

1. Turn the ignition switch OFF.
2. Connect the HDS to the DLC.

3. Turn the ignition switch ON (II).
4. Clear the DTC(s) on the HDS screen.
5. Turn the ignition switch ON (II).
6. Start the engine in the P or N position, and warm it up to normal operating temperature (the radiator fan comes on).
7. To verify that the problem is repaired, test-drive the vehicle for several minutes at speeds over 31 mph (50 km/h) or in freeze data range.

UPDATING THE PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA600 and an iN workstation with HDS and CM update software

NOTE:

- **Use this procedure when you need to update the PCM during troubleshooting procedures.**
- **Make sure the HDS/HIM has the latest software version.**
- **Before you update the PCM, 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 PCM damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, door locks, etc.) during the update.**
- **To ensure the latest program is installed, do a PCM update whenever the PCM is substituted or replaced.**
- **You cannot update a PCM 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 PCM damage.**

1. Turn the ignition switch ON (II), but do not start the engine.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

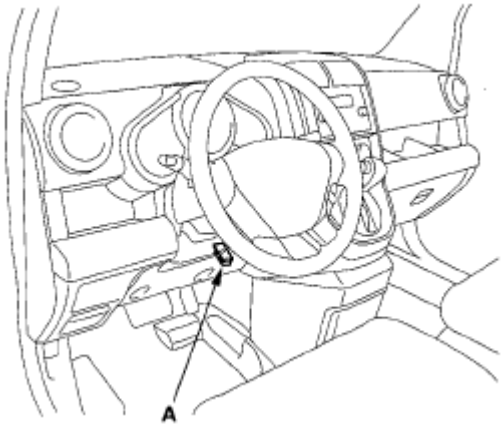


Fig. 10: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from the DLC circuit troubleshooting, skip steps 4 and 5, then clean the throttle body after updating the PCM (see **THROTTLE BODY CLEANING**).
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts with the HDS.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Exit the HDS, then select the CM Update, and follow the screen prompts to update the PCM.
7. If the software in the PCM 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 PCM is not the latest, follow the instructions on the screen.

NOTE: If the PCM update system requires you to cool the PCM, follow the screen prompts. If you run into a problem (programming takes over 15 minutes, status bar goes over 100 %, D or immobilizer indicator flashes, HDS tablet freezes, etc.) during the update procedure, follow these steps to minimize the chance of damaging the PCM:

- **Leave the ignition switch in the "ON (II)" position.**
- **Connect a jumper battery (do not connect a battery charger).**
- **Shut down the HDS.**
- **Disconnect the HDS from the DLC.**
- **Reboot the HDS.**
- **Reconnect the HDS to the DLC, and try the update procedure again.**

8. If the TP POSITION CHECK failed in step 6, clean the throttle body (see **THROTTLE BODY CLEANING**).
9. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

SUBSTITUTING THE PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA600 and an iN workstation with HDS and CM update software

NOTE: Use this procedure when you need to substitute a known-good PCM during troubleshooting procedures.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

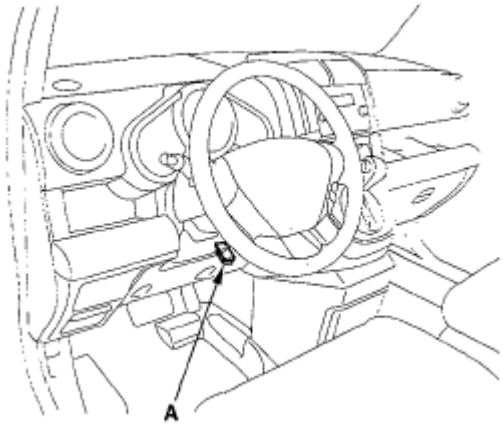


Fig. 11: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from DLC circuit troubleshooting, skip steps 4 through 14, then clean the throttle body after substituting the PCM (see **THROTTLE BODY CLEANING**).
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK and follow the screen prompts.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Remove the passenger's dashboard under cover (see **GLOVE BOX REMOVAL/INSTALLATION**) and the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
9. Cut the plastic cross brace in the glove box opening with diagonal cutters in the area shown, and discard it.

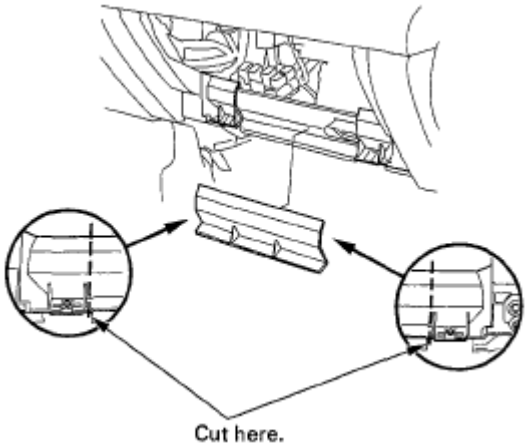


Fig. 12: Identifying Plastic Cutting Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the relays (A), then remove the bolts (B) and the glove box frame (C).

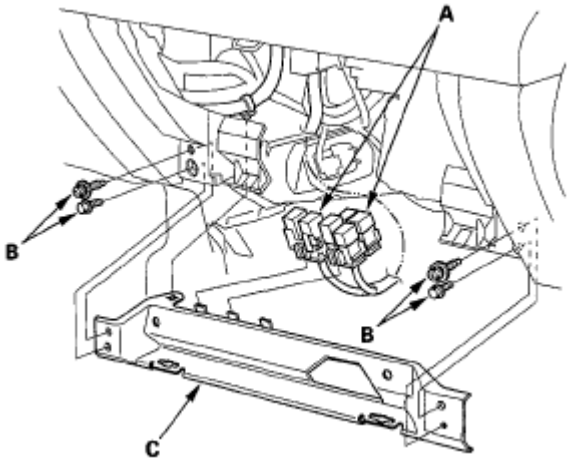


Fig. 13: Identifying Glove Box Frame And Relays With Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the gray 20P PCM wire harness connector (A) from the PCM mounting bracket.

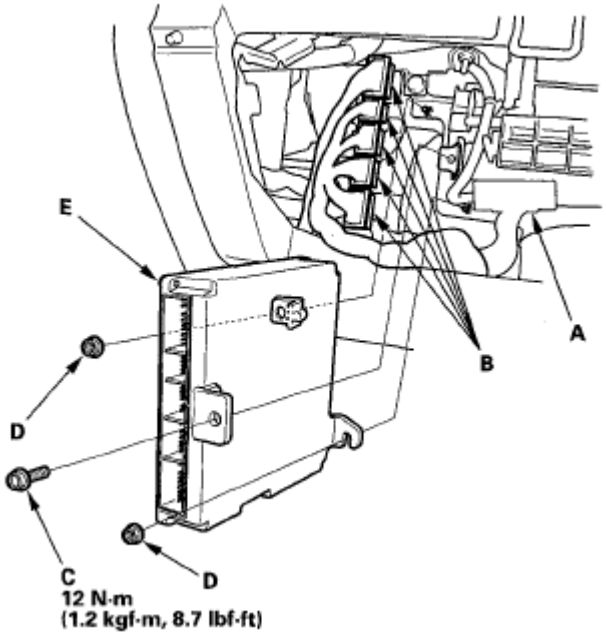


Fig. 14: Identifying PCM Wire Harness Connector And PCM Mounting Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Disconnect the PCM connectors (B).
13. Remove the PCM mounting bolt (C) and the bracket.
14. Remove the nuts (D), then remove the PCM (E).
15. Install the PCM in the reverse order of removal.
16. Open the SCS line with the HDS.
17. Turn the ignition switch ON (II).

NOTE: DTC P0630 "VIN Not Programmed or Mismatch" may be stored because the VIN has not been programmed into the PCM; ignore it, and continue this procedure.

18. Manually input the VIN to the PCM with the HDS.
19. Update the PCM if it does not have the latest software.
20. Select the IMMOBI SYSTEM with the HDS.
21. Enter the immobilizer code with the PCM replacement procedure in the HDS; it allows you to start the engine.
22. Reset the PCM with the HDS.
23. If the TP POSITION CHECK failed in step 5, clean the throttle body (see **THROTTLE BODY CLEANING**).
24. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
25. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP)**

PATTERN LEARN).

DTC TROUBLESHOOTING INDEX

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

DTC TROUBLESHOOTING INDEX

DTC(1)	D Indicator		Detection Item
P0705 (5-2)(2)	Blinks	ON	Short in Transmission Range Switch Circuit (Multiple Shift-position Input)
P0706 (6-2)(2)	OFF	ON	Open in Transmission Range Switch Circuit
P0711ID560367 (28-5)(2)	Blinks	OFF	Problem in ATF Temperature Sensor Circuit
P0712 (28-3)(2)	Blinks	OFF	Short in ATF Temperature Sensor Circuit
P0713 (28-4)(2)	Blinks	OFF	Open in ATF Temperature Sensor Circuit
P0716 (15-5)(2)	Blinks	ON	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit
P0717 (15-3)(2)	Blinks	ON	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit (No Signal Input)
P0718 (15-6)(2)	Blinks	ON	Input Shaft (Mainshaft) Speed Sensor Intermittent Failure
	Blinks	ON	Problem in Output Shaft

P0721 (9-5)(2)			(Countershaft) Speed Sensor Circuit
P0722 (9-3)(2)	Blinks	ON	Problem in Output Shaft (Countershaft) Speed Sensor Circuit (No Signal Input)
P0723 (9-6)(2)	Blinks	ON	Output Shaft (Countershaft) Speed Sensor Intermittent Failure
P0731 (64-1)	Blinks	OFF	Problem in 1st Clutch and 1st Clutch Hydraulic Circuit (1st gear incorrect ratio)
P0732 (64-2)	Blinks	OFF	Problem in 2nd Clutch and 2nd Clutch Hydraulic Circuit (2nd gear incorrect ratio)
P0733 (64-3)	Blinks	OFF	Problem in 3rd Clutch and 3rd Clutch Hydraulic Circuit (3rd gear incorrect ratio)
P0734 (64-4)	Blinks	OFF	Problem in 4th Clutch and 4th Clutch Hydraulic Circuit (4th gear incorrect ratio)
P0735 (64-5)	Blinks	OFF	Problem in 5th Clutch and 5th Clutch Hydraulic Circuit (5th gear incorrect ratio)
P0741 (40-3)	Blinks	OFF	Torque Converter Clutch Hydraulic Circuit Stuck OFF
P0747 (76-4)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve A Stuck ON
P0752 (70-4)	Blinks	ON	Shift Solenoid Valve A Stuck ON
P0756 (71-3)	Blinks	ON	Shift Solenoid Valve B Stuck OFF
P0757 (71-4)	Blinks	ON	Shift Solenoid Valve B Stuck ON
P0761 (72-3)	Blinks	ON	Shift Solenoid Valve C Stuck OFF
P0771 (74-3)	Blinks	ON	Shift Solenoid Valve E

			Stuck OFF

NOTE:

(1) The DTC in parentheses is the flash code (Honda code). The D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode.

(2) This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

DTC TROUBLESHOOTING INDEX

DTC(1)	D Indicator		Detection Item
P0776 (77-3)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve B Stuck OFF
P0777 (77-4)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve B Stuck ON
P0780 (45-1)	Blinks	ON	Shift Control System
P0796 (78-3)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve C Stuck OFF
P0797 (78-4)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve C Stuck ON
P0842 (25-3)(2)	Blinks	ON	Short in 2nd Clutch Transmission Fluid Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck ON
P0843 (25-4)(2)	Blinks	ON	Open in 2nd Clutch Transmission Fluid

			Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck OFF
P0847 (26-3)(2)	Blinks	OFF	Short in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck ON
P0848 (26-4)(2)	Blinks	OFF	Open in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck OFF
P0962 (16-3)(2)	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve A Circuit
P0963 (16-4)(2)	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve A
P0966 (23-3)(2)	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve B Circuit
P0967 (23-4)(2)	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve B
P0970 (29-3)(2)	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve C Circuit
P0971 (29-4)(2)	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve C

NOTE:

(1) The DTC in parentheses is the flash code (Honda code). The D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode.

(2) This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL

TROUBLESHOOTING INFORMATION).

DTC TROUBLESHOOTING INDEX

DTC[1]	D Indicator		Detection Item
P0973 (7-3)[2]	Blinks	ON	Short in Shift Solenoid Valve A Circuit
P0974 (7-4)[2]	Blinks	ON	Open in Shift Solenoid Valve A Circuit
P0976 (8-3)[2]	Blinks	ON	Short in Shift Solenoid Valve B Circuit
P0977 (8-4)[2]	Blinks	ON	Open in Shift Solenoid Valve B Circuit
P0979 (22-3)[2]	Blinks	ON	Short in Shift Solenoid Valve C Circuit
P0980 (22-4)[2]	Blinks	ON	Open in Shift Solenoid Valve C Circuit
P0982 (60-3)[2]	Blinks	ON	Short in Shift Solenoid Valve D Circuit
P0983 (60-4)[2]	Blinks	ON	Open in Shift Solenoid Valve D Circuit
P0985 (61-3)[2]	Blinks	ON	Short in Shift Solenoid Valve E Circuit
P0986 (61-4)[2]	Blinks	ON	Open in Shift Solenoid Valve E Circuit
P1717 (62-1)[2]	Blinks	OFF	Open in Transmission Range Switch ATP RVS Switch Circuit
P1730 (45-2)	Blinks	ON	Problem in Shift Control System: • Shift Solenoid Valves A or D Stuck OFF • Shift Solenoid Valve B Stuck ON

			• Shift Valves A, B, or D Stuck
P1731 (45-3)	Blinks	ON	Problem in Shift Control System: • Shift Solenoid Valve E Stuck ON • Shift Valve E Stuck • A/T Clutch Pressure Control Solenoid Valve A Stuck OFF
P1732 (45-4)	Blinks	ON	Problem in Shift Control System • Shift Solenoid Valves B or C Stuck ON • Shift Valves B or C Stuck
P1733 (45-5)	Blinks	ON	Problem in Shift Control System: • Shift Solenoid Valve D Stuck ON • Shift Valve D Stuck • A/T Clutch Pressure Control Solenoid Valve C Stuck OFF
P1734 (45-6)	Blinks	ON	Problem in Shift Control System: • Shift Solenoid Valves B or C Stuck OFF • Shift Valves B or C Stuck

NOTE:

(1) The DTC in parentheses is the flash code (Honda code). The D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode.

This code is caused by an electrical circuit problem and cannot be caused by a mechanical

(2) problem in the transmission.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Probable cause(s)	Notes
When you turn the ignition switch ON (II), the D indicator comes on and stays on in all shift lever positions, or it never comes on at all	• F-CAN communication line error • Gauge control module defective • PCM defective	• Check the F-CAN communication line for a DTC (see **DTC B1168: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE ECM/PCM (ENGINE MESSAGES); DTC B1169: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE PCM (A/T MESSAGE)** . • Check indicator drive circuit in the gauge control module by gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).
A/T gear position indicator does not come on while the shift lever is in that position	• F-CAN communication line error • Gauge control module defective • PCM defective • Transmission range switch defective	• Check the F-CAN communication line for a DTC (see **DTC B1168: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE ECM/PCM (ENGINE MESSAGES); DTC B1169: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE PCM (A/T MESSAGE)** . • Check indicator drive circuit in the gauge control module by gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**). • Inspect the transmission range switch (see **TRANSMISSION**

		RANGE SWITCH TEST).
Transmission still shifts into 4th or 5th gear in D even though the D3 switch is pushed	A problem in the D3 switch circuit	Troubleshoot the D3 switch circuit (see **D3 SWITCH CIRCUIT TROUBLESHOOTING**).
Shift lever cannot be moved from P while you are pressing on the brake pedal	• Accelerator pedal position sensor circuit • Accelerator pedal position sensor defective • Brake pedal position switch circuit • Brake pedal position switch defective • Shift lock solenoid defective • Shift lock solenoid control circuit • Shift lock mechanism defective • Throttle body defective • Transmission range switch ATP P switch stuck OFF • Transmission range switch ATP P switch line opened	• Inspect the APP sensor signal (see **APP SENSOR SIGNAL INSPECTION**). • Troubleshoot the shift lock system circuit (see **SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING**). • Test the shift lock solenoid (see **SHIFT LOCK SOLENOID TEST**). • Inspect the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).
Ignition switch cannot be moved from ACC (1) to LOCK (0) (key is pushed in, shift lever in P)	• Interlock control system circuit • Key interlock solenoid stuck ON • Park pin switch stuck ON • Transmission range switch	• Troubleshoot the key interlock system circuit (see **KEY INTERLOCK SYSTEM CIRCUIT TROUBLESHOOTING**). • Inspect the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).
HDS does not communicate with the PCM or the vehicle	DLC circuit error	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
Engine runs, but vehicle does not move in any gear	1. Low ATF level 2. Shift cable broken or out of adjustment 3. Connection between the in shift cable and transmission or body is worn 4. ATF pump worn or binding 5. Regulator valve stuck or	• Check the ATF level, and check the ATF cooler lines for leakage and loose connections. If necessary, clean the ATF cooler lines. • Check for a loose shift cable at the shift lever and the transmission control shaft.

	spring worn 6. ATF strainer clogged 7. Mainshaft worn or damaged 8. Final gears worn or damaged 9. Transmission-to-engine assembly error 10. Axle disengaged	• Improper alignment of ATF pump and torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Check the line pressure. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will result in ATF pump seizure if not detected. Use the proper tools. • Install the main seal flush with the torque converter housing. If you push it into the torque converter housing until it bottoms out, it will block the fluid return passage and result in damage. • Check the ATF strainer for debris. If the ATF strainer is clogged with particles of steel or aluminum, inspect the ATF pump. If the ATF pump is OK, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter. • Inspect the differential pinion gears for wear. If the differential pinion gears are worn, replace the differential assembly, replace the ATF strainer, thoroughly clean the transmission, and clean the torque converter, cooler, and lines.
Vehicle moves in 2 and R, but not in D or 1	1. 1st accumulator defective 2. 1st gears worn or damaged 3. 1st clutch defective	• Check the 1st clutch pressure. • Inspect the clutch piston, clutch piston check valve, and O-

		rings. Check the spring retainer and retainer seal for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Inspect the 1st clutch feed pipe. If the 1st clutch feed pipe is scored, replace the end cover. • Replace the secondary shaft if the bushing for the 1st clutch feed pipe is loose or damaged.
Vehicle moves in D, 1, and R, but not in 2	1. 2nd accumulator defective 2. 2nd gears worn or damaged 3. 2nd clutch defective	• Check the 2nd clutch pressure. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer and retainer seal for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Vehicle moves in D, 2, and 1, but not in R	1. Shift solenoid valve E defective 2. Shift fork shaft stuck 3. Shift valve E defective	• Check for a stored DTC, and check for loose connectors. • Inspect the shift solenoid valve E for seizure, and O-rings for

	4. 4th/reverse accumulator defective 5. 4th clutch defective 6. Reverse gears worn or damaged	wear and damage. • Check for a missing shift fork bolt on the shift fork shaft. • Check the 4th clutch pressure. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Inspect the reverse selector gear teeth chamfers, and inspect the engagement teeth chamfers of the countershaft 4th gear and reverse gear. Replace the reverse gears and the reverse selector if they are worn or damaged. If the transmission makes a clicking, grinding, or whirring noise, also replace the mainshaft 4th gear, reverse idler gear, and countershaft 4th gear.
Poor acceleration; flares when starting off in D and R; stall speed high in 2 and 1, and in D in 1st and 2nd	1. Low ATF level 2. Shift cable broken or out of adjustment 3. ATF pump worn or binding 4. Regulator valve stuck or spring worn 5. ATF strainer clogged 6. Torque converter check valve defective	• Check the ATF level, and check the ATF cooler lines for leakage and loose connections. If necessary, clean the ATF cooler lines. • Check for a loose shift cable at the shift lever and the transmission control shaft. • Improper alignment of ATF pump and torque converter housing may cause ATF pump

		seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Check the ATF strainer for debris. If the ATF strainer is clogged with particles of steel or aluminum, inspect the ATF pump. If the ATF pump is OK, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter.
Poor acceleration; flares when starting off in D and R; stall speed high when starting off in 2	2nd clutch defective	• Check the 2nd clutch pressure. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer and retainer seal for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Poor acceleration; flares when starting off in D and R; stall speed high in R	1. Shift cable broken or out of adjustment 2. 4th clutch defective	• Check for a loose shift cable at the shift lever and the transmission control shaft. • Check the 4th clutch pressure in the D and R positions. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch

		discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Poor acceleration; stall speed low in 2 and 1, and in D in 1st and 2nd	1. Shift solenoid valve E defective 2. Torque converter one-way clutch defective 3. Engine output low 4. Torque converter clutch piston defective 5. Lock-up shift valve defective	• Check for a stored DTC, and check for loose connectors. • Inspect the shift solenoid valve E for seizure, and O-ring for wear and damage. • Replace the torque converter.
Poor acceleration; stall speed low in R	1. Engine output low 2. Torque converter clutch piston defective 3. Lock-upshift valve defective	Replace the torque converter.
Engine idle vibration	1. Misadjusted engine and transmission mounts 2. Low ATF level 3. Shift solenoid valve E defective 4. Drive plate defective or transmission misassembled 5. Engine output low 6. Torque converter clutch piston defective 7. ATF pump worn or binding 8. Lock-up shift valve defective	• Check the ATF level, and check the ATF cooler lines for leakage and loose connections. If necessary, clean the ATF cooler lines. • Improper alignment of ATF pump and torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Inspect the ATF strainer for clogging with particles of steel or aluminum. If the ATF strainer is clogged, replace it, and clean the torque converter, cooler, and lines. • Check for a stored DTC, and check for loose connectors. Inspect the shift solenoid valve

		E for seizure, and O-rings for wear and damage. • Check for a misinstalled/damaged drive plate. • Adjust the engine and transmission mounts. • Replace the torque converter.
Vehicle moves in N	1. Excessive ATF 2. Foreign material in separator plate orifice 3. Relief valve defective 4. 1st clutch defective 5. 2nd clutch defective 6. 3rd clutch defective 7. 4th clutch defective 8. 5th clutch defective 9. Clearance between the clutch end-plate and the top disc 10. Needle bearing seized, worn, or damaged 11. Thrust washer seized, worn, or damaged	• Check the ATF level, and drain the ATF if necessary. • Check the 1st, 2nd, 3rd, 4th, and 5th clutch pressures. • Check the ATF strainer for debris. If the ATF strainer is clogged with particles of steel or aluminum, inspect the ATF pump. If the ATF pump is OK, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer and retainer seal (1st, 2nd, and 3rd) for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Inspect the 1st clutch feed pipe. If the 1st clutch feed pipe is scored, replace the end cover. • Inspect the 3rd clutch feed pipe. If the 3rd clutch feed pipe

		is scored, replace it and O-ring under the feed pipe guide. • Replace the secondary shaft if the bushing for the 1st or 3rd clutch feed pipe is loose or damaged. • Inspect the 5th clutch feed pipe. If the 5th clutch feed pipe is scored, replace it and the O-ring under the feed pipe guide. • Replace the mainshaft if the bushing for the 5th clutch feed pipe is loose or damaged.
Late shift after shifting from N to D, or excessive shock when shifted into D	1. Shift solenoid valve E defective 2. A/T clutch pressure control solenoid valve A defective 3. A/T clutch pressure control solenoid valve B defective 4. A/T clutch pressure control solenoid valve C defective 5. Shift cable broken or out of adjustment 6. Connection between the shift cable and transmission or body is worn 7. Input shaft (mainshaft) speed sensor defective 8. Output shaft (countershaft) speed sensor defective 9. ATF temperature sensor defective 10. Foreign material in separator plate orifice 11. Servo control valve defective 12. 1st accumulator defective 13. 1st check ball stuck 14. Lock-up shift valve defective 15. 1st clutch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation. • Check for a loose shift cable at the shift lever and the transmission control shaft. • Check the 1st clutch pressure. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer and retainer seal for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.

		• Inspect the 1st clutch feed pipe. If the 1st clutch feed pipe is scored, replace the end cover. • Replace the secondary shaft if the bushing for the 1st clutch feed pipe is loose or damaged.
Late shift after shifting from N to R, or excessive shock when shifted into R	1. Shift solenoid valve E defective 2. A/T clutch pressure control solenoid valve A defective 3. Shift cable broken or out of adjustment 4. Connection between the shift cable and transmission or body is worn 5. Input shaft (mainshaft) speed sensor defective 6. Output shaft (countershaft) speed sensor defective 7. ATF temperature sensor defective 8. Shift fork shaft stuck 9. Foreign material in separator plate orifice 10. Shift valve E defective 11. 4th/reverse accumulator defective 12. Lock-upshift valve defective 13. 4th clutch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation. • Check for a loose shift cable at the shift lever and the transmission control shaft. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Check for a missing shift fork bolt on the shift fork shaft. • Check the 4th clutch pressure. • Inspect the servo valve and O-ring.
Transmission does not shift	1. Input shaft (mainshaft) speed sensor defective 2. Output shaft (countershaft)	• Check for a stored DTC, and check for loose connectors. • Check the input shaft

	speed sensor defective	(mainshaft) and output shaft (countershaft) speed sensor installation.
Excessive shock or flares on all upshifts and downshifts	1. A/T clutch pressure control solenoid valve B defective 2. A/T clutch pressure control solenoid valve C defective 3. Input shaft (mainshaft) speed sensor defective 4. Output shaft (countershaft) speed sensor defective 5. ATF temperature sensor defective 6. Foreign material in separator plate orifice	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation.
Excessive shock or flares on 1-2 upshift or 2-1 downshift	1. Shift solenoid valve E defective 2. A/T clutch pressure control solenoid valve A defective 3. A/T clutch pressure control solenoid valve B defective 4. A/T clutch pressure control solenoid valve C defective 5. 2nd clutch transmission fluid pressure switch defective 6. Foreign material in separator plate orifice 7. 1st accumulator defective 8. 2nd accumulator defective 9. 1st check ball stuck 10. 2nd check ball stuck 11. Lock-upshift valve defective 12. 1st clutch defective 13. 2nd clutch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Check the 1st and 2nd clutch pressures. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer and retainer seal for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Inspect the 1st clutch feed pipe. If the 1st clutch feed pipe is scored, replace the end cover.

		• Replace the secondary shaft if the bushing for the 1st clutch feed pipe is loose or damaged.
Excessive shock or flares on 2-3 upshift or 3-2 downshift	1. A/T clutch pressure control solenoid valve B defective 2. A/T clutch pressure control solenoid valve C defective 3. 3rd clutch transmission fluid pressure switch defective 4. Foreign material in separator plate orifice 5. 2nd accumulator defective 6. 3rd accumulator defective 7. 2nd check ball stuck 8. 2nd clutch defective 9. 3rd clutch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Check the 2nd and 3rd clutch pressures. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer and retainer seal for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Inspect the 3rd clutch feed pipe. If the 3rd clutch feed pipe is scored, replace it and the O-ring under the feed pipe guide. • Replace the secondary shaft if the bushing for the 3rd clutch feed pipe is loose or damaged.
Excessive shock or flares on 3-4 upshift or 4-3 downshift	1. A/T clutch pressure control solenoid valve B defective 2. A/T clutch pressure control solenoid valve C defective 3. Foreign material in separator plate orifice 4. 3rd accumulator defective 5. 4th accumulator defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Check the 3rd and 4th clutch pressures.

	6. 3rd clutch defective 7. 4th clutch defective	• Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer and retainer seal (3rd) for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Inspect the 3rd clutch feed pipe. If the 3rd clutch feed pipe is scored, replace it and the O-ring under the feed pipe guide. • Replace the secondary shaft if the bushing for the 3rd clutch feed pipe is loose or damaged.
Excessive shock or flares on 4-5 upshift or 5-4 downshift	1. A/T clutch pressure control solenoid valve B defective 2. A/T clutch pressure control solenoid valve C defective 3. Foreign material in separator plate orifice 4. 4th accumulator defective 5. 5th accumulator defective 6. 4th clutch defective 7. 5th clutch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Check the 4th and 5th clutch pressures. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs are worn or damaged, replace them as a set. Inspect the clutch wave-

		plate height. If the height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate. • Inspect the 5th clutch feed pipe. If the 5th clutch feed pipe is scored, replace it and the O-ring under the feed pipe guide. • Replace the mainshaft if the bushing for the 5th clutch feed pipe is loose or damaged.
Noise from transmission in all shift lever positions	1. ATF pump worn or binding 2. Mainshaft bearing, countershaft bearing, or secondary shaft bearing defective	• Improper alignment of ATF pump and torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will result in ATF pump seizure if not detected. Use the proper tools. • Install the main seal flush with the torque converter housing. If you push it into the torque converter housing until it bottoms out, it will block the fluid return passage and result in damage. • Inspect the ATF strainer for clogging with particles of steel or aluminum. If the ATF strainer is clogged, replace it, and clean the torque converter, cooler, and lines. • Inspect the mainshaft, countershaft and secondary shaft for wear or damage.
Vehicle does not accelerate above 31 mph (50 km/h)	Torque converter one-way clutch defective	Replace the torque converter.

Vibration in all shift lever positions	Drive plate defective or transmission misassembled	• Check for a misinstalled/damaged drive plate. • Adjust the engine and transmission mounts.
Shift lever does not operate smoothly	1. Transmission range switch defective or out of adjustment 2. Shift cable broken or out of adjustment 3. Connection between the shift cable and transmission or body is worn	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch for operation. • Check for a loose shift cable at the shift lever and the transmission control shaft.
Transmission does not shift into P	1. Shift cable broken or out of adjustment 2. Connection between the shift cable and transmission or body is worn 3. Park mechanism defective	• Check for a loose shift cable at the shift lever and the transmission control shaft. • Check the park pawl spring installation and the park lever spring installation. If installation is incorrect, install the spring correctly. Make sure that the park lever stop is not installed upside down. Check the distance between the park pawl shaft and park lever roller pin. If the distance is out of tolerance, adjust the distance with the park lever stop.
Torque converter clutch does not disengage	1. Shift solenoid valve E defective 2. A/T clutch pressure control solenoid valve A defective 3. Torque converter clutch piston defective 4. Lock-upshift valve defective 5. Lock-up control valve defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Replace the torque converter.
Torque converter clutch does not operate smoothly	1. Shift solenoid valve E defective 2. A/T clutch pressure control solenoid valve A defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect

	3. Torque converter clutch piston defective 4. Torque converter check valve defective 5. Lock-upshift valve defective 6. Lock-up control valve defective	the solenoid valves for seizure. • Replace the torque converter.
Torque converter clutch does not engage	1. Shift solenoid valve E defective 2. A/T clutch pressure control solenoid valve A defective 3. Input shaft (mainshaft) speed sensor defective 4. Output shaft (countershaft) speed sensor defective 5. Torque converter clutch piston defective 6. Torque converter check valve defective 7. Lock-up shift valve defective 8. Lock-up control valve defective	• Check for a stored DTC, and check for loose connectors. • Inspect the solenoid valve filter/gasket and O-rings for wear and damage, and inspect the solenoid valves for seizure. • Replace the torque converter. • Check the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor installation.
A/T gear position indicator does not indicate shift lever positions	1. Transmission range switch defective or out of adjustment 2. Shift cable broken or out of adjustment 3. Connection between the shift cable and transmission or body is worn	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch operation. • Check for a loose shift cable at the shift lever and the transmission control shaft.
Speedometer and odometer do not work	Output shaft (countershaft) speed sensor defective	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch operation. • Check the output shaft (countershaft) speed sensor installation.
Engine does not rev to high rpm, and the transmission upshifts at low rpm (engine at	VTEC rocker arms defective	Check the engine rocker arms.

normal operating temperature)		

COMPONENT LOCATION INDEX

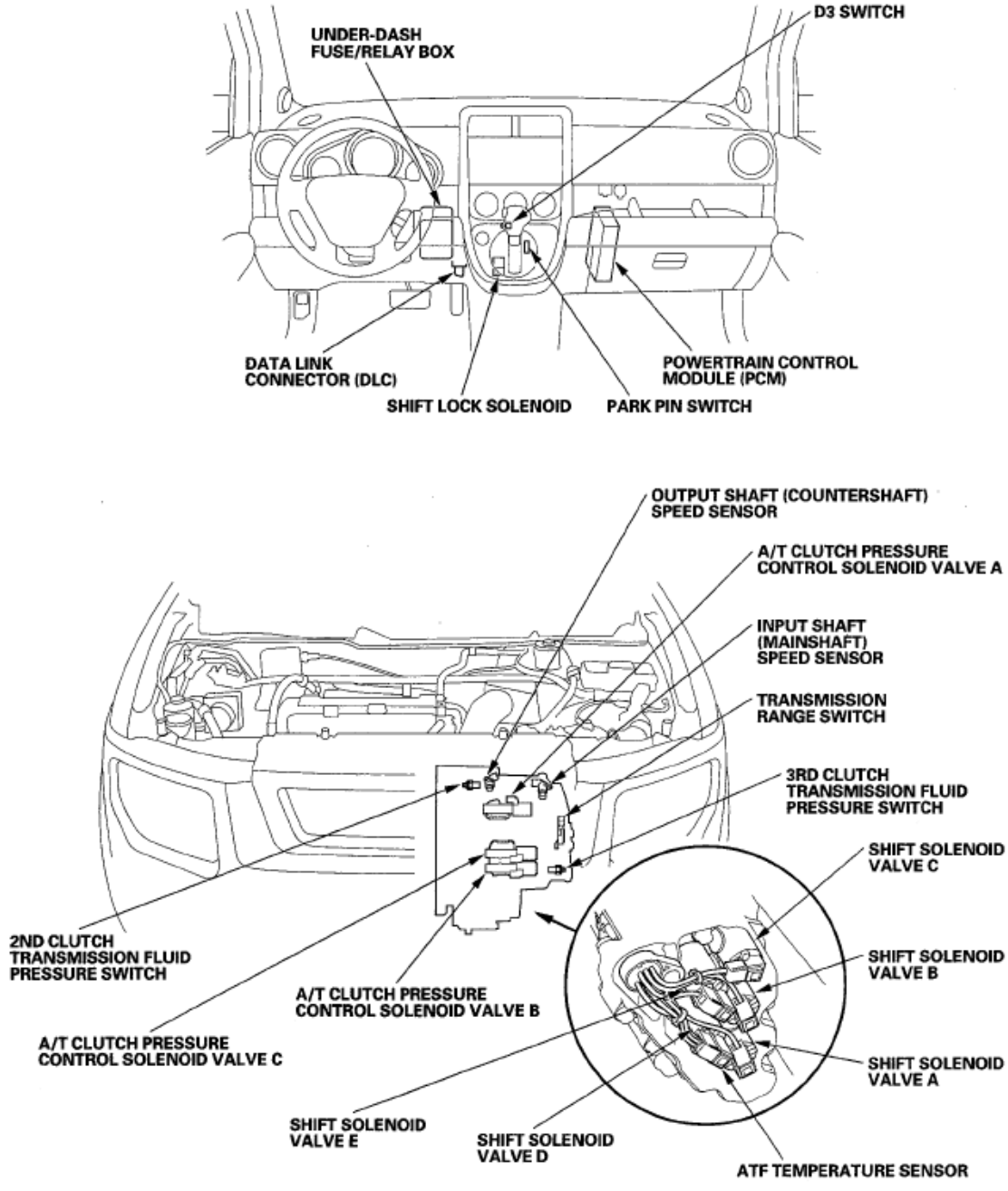


Fig. 15: Identifying Automatic Transmission Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

GENERAL OPERATION

The automatic transmission is a combination of a three-element torque converter and triple-shaft electronically controlled unit which provides five speeds forward and one reverse. The entire unit is positioned in line with the engine.

Torque Converter, Gears, and Clutches

The torque converter consists of a pump, turbine, and stator assembly in a single unit. The converter housing (pump) is connected to the engine crankshaft and turns as the engine turns. Around the outside of the torque converter is a ring gear which meshes with the starter pinion when the engine is being started. The entire torque converter assembly serves as a flywheel while transmitting power to the transmission mainshaft, the transmission has three parallel shafts; the mainshaft, the countershaft, and the secondary shaft. The mainshaft is in line with the engine crankshaft, and includes the 4th and 5th clutches, and gears for 5th, 4th, reverse, and idler. The mainshaft reverse gear is integral with the mainshaft 4th gear. The countershaft includes the gears for 1st, 2nd, 3rd, 4th, 5th, reverse, park, and the final drive. The final drive gear is integral with the countershaft. The countershaft 4th gear and the countershaft reverse gear can be locked to the countershaft providing 4th or reverse gear, depending on which way the selector is moved. The secondary shaft includes the 1st, 2nd, and 3rd clutches, and gears for 1st, 2nd, 3rd, and idler. The idler shaft is located between the mainshaft and secondary shaft, and the idler gear transmits power between the mainshaft and the secondary shaft. The gears on the mainshaft and the secondary shaft are in constant mesh with those on the countershaft. When certain combinations of gears in the transmission are engaged by the clutches, power is transmitted through the mainshaft, then to the secondary shaft to the countershaft, or through the mainshaft to the countershaft to provide drive.

Electronic Control

The electronic control system consists of the powertrain control module (PCM), sensors, and solenoid valves. Shifting and lock-up are electronically controlled for comfortable driving under all conditions. The PCM is located below the dashboard, under the front lower panel behind the center console.

Hydraulic Control

The valve bodies include the main valve body, the regulator valve body, and the servo body. They are bolted to the torque converter housing. The main valve body contains the manual valve, shift valves A, B, C, and E, the relief valve, the lock-up control valve, the cooler check valve, the servo control valve, and the ATF pump gears. The regulator valve body contains the regulator valve, the torque converter check valve, lock-up shift valve, and the 1st and 3rd accumulators. The servo body contains the servo valve, shift valve D, the accumulators for 2nd, 4th, and 5th, and shift solenoid valves A, B, C, D, and E. Fluid from the regulator passes through the manual valve to the various control valves. The 1st, 3rd, and 5th clutches receive fluid from their respective feed pipes, and the 2nd and the 4th clutches receive fluid from the internal hydraulic circuit.

Shift Control Mechanism

To shift gears the PCM controls shift solenoid valves A, B, C, D, and E, and A/T clutch pressure control solenoid valves A, B, and C, while receiving input signals from various sensors and switches located throughout the vehicle. The shift solenoid valves shift the positions of the shift valves to switch the port leading hydraulic pressure to the clutch. A/T clutch pressure control solenoid valves A, B, and C regulate their respective

pressure, and pressurize the clutches to engage them and their corresponding gears. The pressures of the A/T clutch pressure control solenoid valves also apply to the shift valves to switch the port.

Lock-up Mechanism

The lock-up mechanism operates in the D position (2nd, 3rd, 4th, and 5th), and in D position D3 driving mode (2nd and 3rd). The pressurized fluid is drained from the back of the torque converter through a fluid passage, causing the torque converter clutch piston to be held against the torque converter cover. As this takes place, the mainshaft rotates at the same speed as the engine crankshaft. Together with the hydraulic control, the PCM optimizes the timing and volume of the lock-up mechanism. When shift solenoid valve E is turned on by the PCM, shift solenoid valve E pressure switches the lock-up shift valve on and off. A/T clutch pressure control solenoid valve A and the lock-up control valve control the volume of the lock-up conditions.

Gear Selection

The shift lever has six positions; P: PARK, R: REVERSE, N: NEUTRAL, D: DRIVE 1st through 5th gear range, and 1st through 3rd gear range with D3 driving mode, 2: 2nd gear, and 1: 1st gear.

SHIFT LEVER GEAR POSITION

Position	Description
P: PARK	Front wheels locked; park pawl engaged with park gear on countershaft. All clutches are released.
R: REVERSE	Reverse; reverse selector engaged with countershaft reverse gear and 4th clutch engaged.
N: NEUTRAL	All clutches are released.
D: DRIVE (1st through 5th)	General driving; starts off in 1st, shifts automatically to 2nd, 3rd, 4th, then 5th, depending on vehicle speed and throttle position. Downshifts through 4th, 3rd, 2nd, and 1st on deceleration to stop. The lock-up mechanism operates in 2nd, 3rd, 4th, and 5th gears.
D: DRIVE with D3 driving mode (1st through 3rd)	Used the rapid acceleration at highway speeds and general driving, up-hill and down-hill driving; starts off in 1st, shifts automatically to 2nd, then 3rd, depending on vehicle speed and throttle position. Downshifts through 2nd to 1st on deceleration to stop. The lock-up mechanism operates in 2nd and 3rd gears.
2: SECOND	Used for engine braking or better traction starting off on loose or slippery surfaces; stays in 2nd gear, does not shift up and down.
1: FIRST	Used for engine braking; stays in 1st gear, does not shift up.

Starting is possible only in the P and N positions because of a slide-type neutral-safety switch.

Automatic Transmission (A/T) Gear Position Indicator

The A/T gear position indicator in the instrument panel shows which shift lever position has been selected without having to look down at the shift lever.

Transfer Mechanism (4WD)

The transfer mechanism consists of the transfer drive gear on the differential, the transfer shaft, the transfer drive gear (hypoid gear), the transfer output shaft (hypoid gear), and the companion flange. The transfer mechanism assembly is on the rear of the transmission, beside the differential. The transfer drive gear on the differential drives the transfer shaft and transfer drive gear (hypoid gear), and the transfer drive gear (hypoid gear) drives the transfer output shaft (hypoid gear). Power is transmitted from the transfer drive gear on the differential to the rear differential via the transfer shaft and the propeller shaft.

CLUTCHES AND GEARS

The 5-speed automatic transmission uses hydraulically-actuated clutches to engage or disengage the transmission gears. When hydraulic pressure is introduced into the clutch drum, the clutch piston moves. This presses the friction discs and steel plates together, locking them so they do not slip. Power is then transmitted through the engaged clutch pack to its hub-mounted gear. Likewise, when the hydraulic pressure is bled from the clutch pack, the piston releases the friction discs and steel plates, and they are free to slide past each other. This allows the gear to spin independently on its shaft, transmitting no power.

1st Clutch

The 1st clutch engages/disengages 1st gear, and is located at the middle of the secondary shaft. The 1st clutch is joined back-to-back to the 3rd clutch. The 1st clutch is supplied hydraulic pressure by its ATF feed pipe within the secondary shaft.

2nd Clutch

The 2nd clutch engages/disengages 2nd gear, and is located at the end of the secondary shaft, opposite the end cover. The 2nd clutch is supplied hydraulic pressure by a circuit connected to the internal hydraulic circuit.

3rd Clutch

The 3rd clutch engages/disengages 3rd gear, and is located at the middle of the secondary shaft. The 3rd clutch is joined back-to-back to the 1st clutch. The 3rd clutch is supplied hydraulic pressure by its ATF feed pipe within the secondary shaft.

4th Clutch

The 4th clutch engages/disengages 4th gear, as well as reverse gear, and is located at the middle of the mainshaft. The 4th clutch is joined back-to-back to the 5th clutch. The 4th clutch is supplied hydraulic pressure by its ATF feed pipe within the mainshaft.

5th Clutch

The 5th clutch engages/disengages 5th gear, and is located at the middle of the mainshaft. The 5th clutch is joined back-to-back to the 4th clutch. The 5th clutch is supplied hydraulic pressure by its ATF feed pipe within the mainshaft.

Gear operation

Gears on the mainshaft:

- 4th gear engages/disengages with the mainshaft by the 4th clutch.
- 5th gear engages/disengages with the mainshaft by the 5th clutch.
- Reverse gear engages/disengages with the mainshaft by the 4th clutch.
- Idler gear is splined with the mainshaft, and rotates with the mainshaft.

Gears on the countershaft:

- Final drive gear is integral with the countershaft.
- 1st, 2nd, 3rd, 5th, and park gears are splined with the countershaft, and rotate with the countershaft.
- 4th gear and reverse gear rotate freely from the countershaft. The reverse selector engages 4th gear and reverse gear with the reverse selector hub. The reverse selector hub is splined to the countershaft so that the 4th gear and reverse gear engage with the countershaft.

Gears on the secondary shaft:

- 1st gear engages/disengages with the secondary shaft by the 1st clutch.
- 2nd gear engages/disengages with the secondary shaft by the 2nd clutch.
- 3rd gear engages/disengages with the secondary shaft by the 3rd clutch.
- Idler gear is splined with the secondary shaft, and rotates with the secondary shaft.

The idler gear on the idler shaft transmits power between the mainshaft and the secondary shaft.

The reverse idler gear transmits power from the mainshaft reverse gear to the countershaft reverse gear, and changes rotational direction of the countershaft to reverse.

Transmission Cutaway View

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

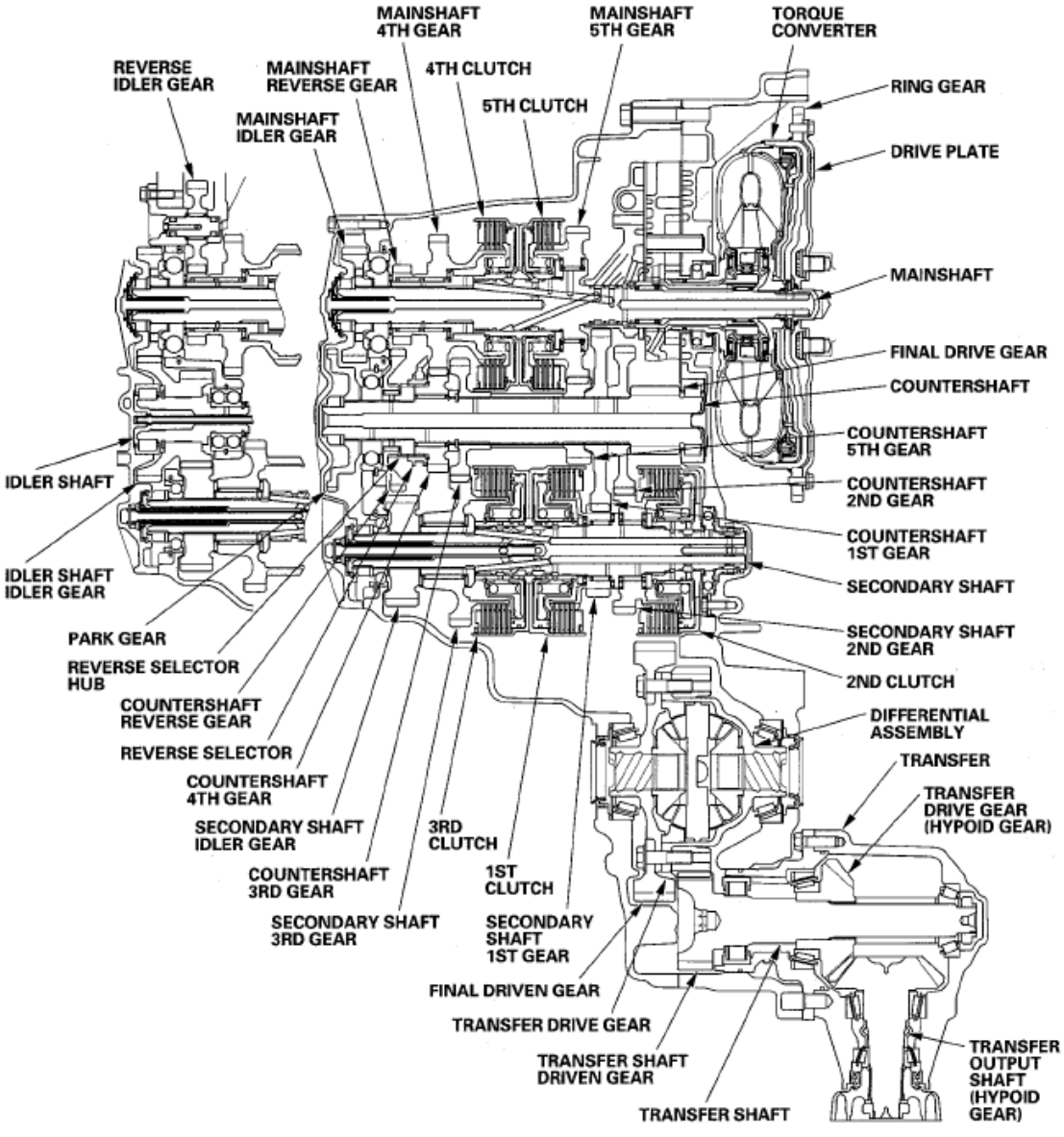


Fig. 16: Automatic Transmission Cutaway View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER FLOW

P Position

Hydraulic pressure is not applied to the clutch. Power is not transmitted to the countershaft. The countershaft is locked by the park pawl, interlocking the park gear.

N Position

Engine power transmitted from the torque converter drives the mainshaft idler gear, the idler shaft idler gear, and the secondary shaft idler gear, but hydraulic pressure is not applied to the clutches. Power is not transmitted

to the countershaft. In this position, the position of the reverse selector differs according to whether the shift lever shifted from the D or R position:

- When shifted from the D position, the reverse selector engages with the countershaft 4th gear and the reverse selector hub, and the 4th gear engages with the countershaft.
- When shifted from the R position, the reverse selector engages with the countershaft reverse gear and the reverse selector hub, and the reverse gear engages with the countershaft.

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

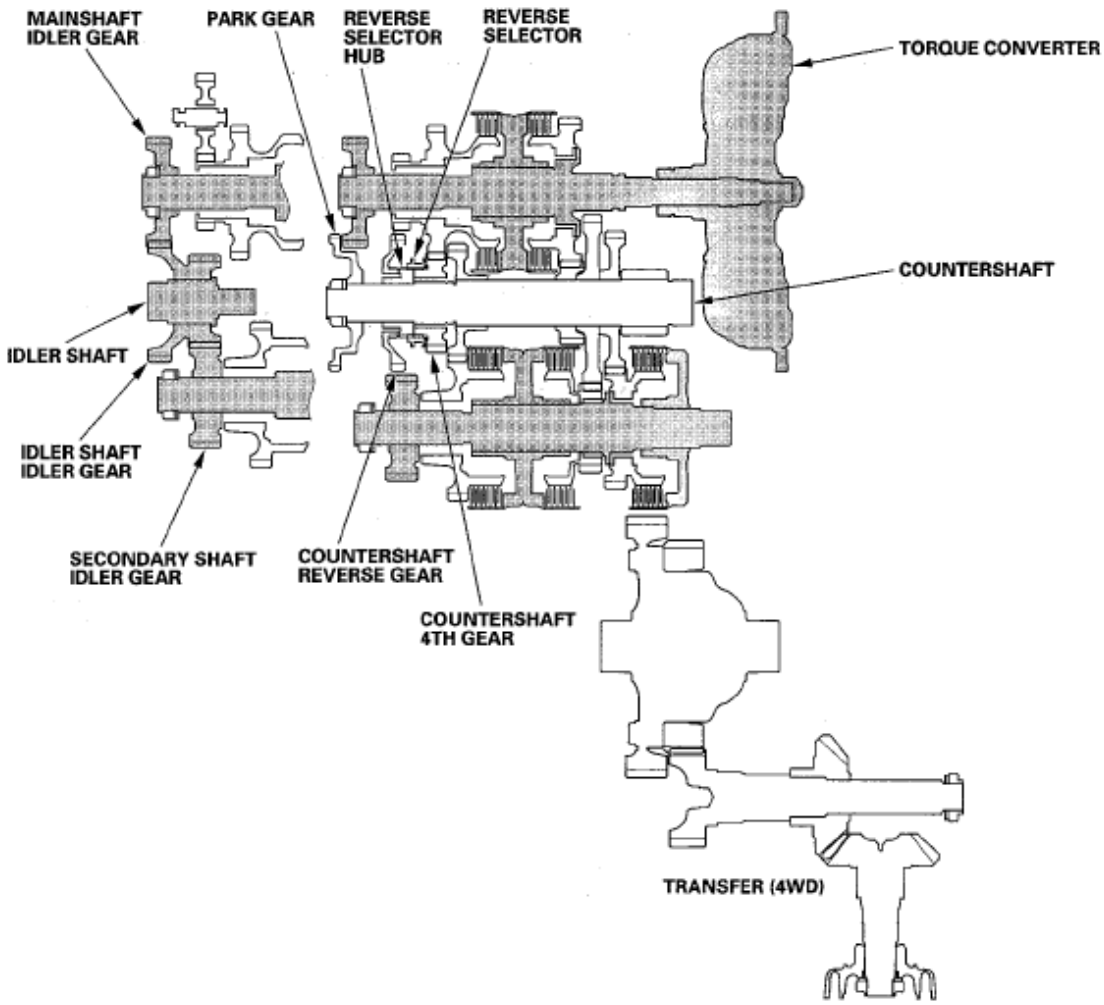


Fig. 17: Automatic Transmission Power Flow Diagram - N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1st Gear

- Hydraulic pressure is applied to the 1st clutch, then the 1st clutch engages the secondary shaft 1st gear with the secondary shaft.

- The mainshaft idler gear drives the secondary shaft via the idler shaft idler gear and the secondary shaft idler gear.
- The secondary shaft 1st gear drives the countershaft 1st gear and the countershaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear, and the transfer drive gear (4WD).
- 4WD: The transfer drive gear drives the transfer drive gear (hypoid gear) and the transfer output shaft (hypoid gear).

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

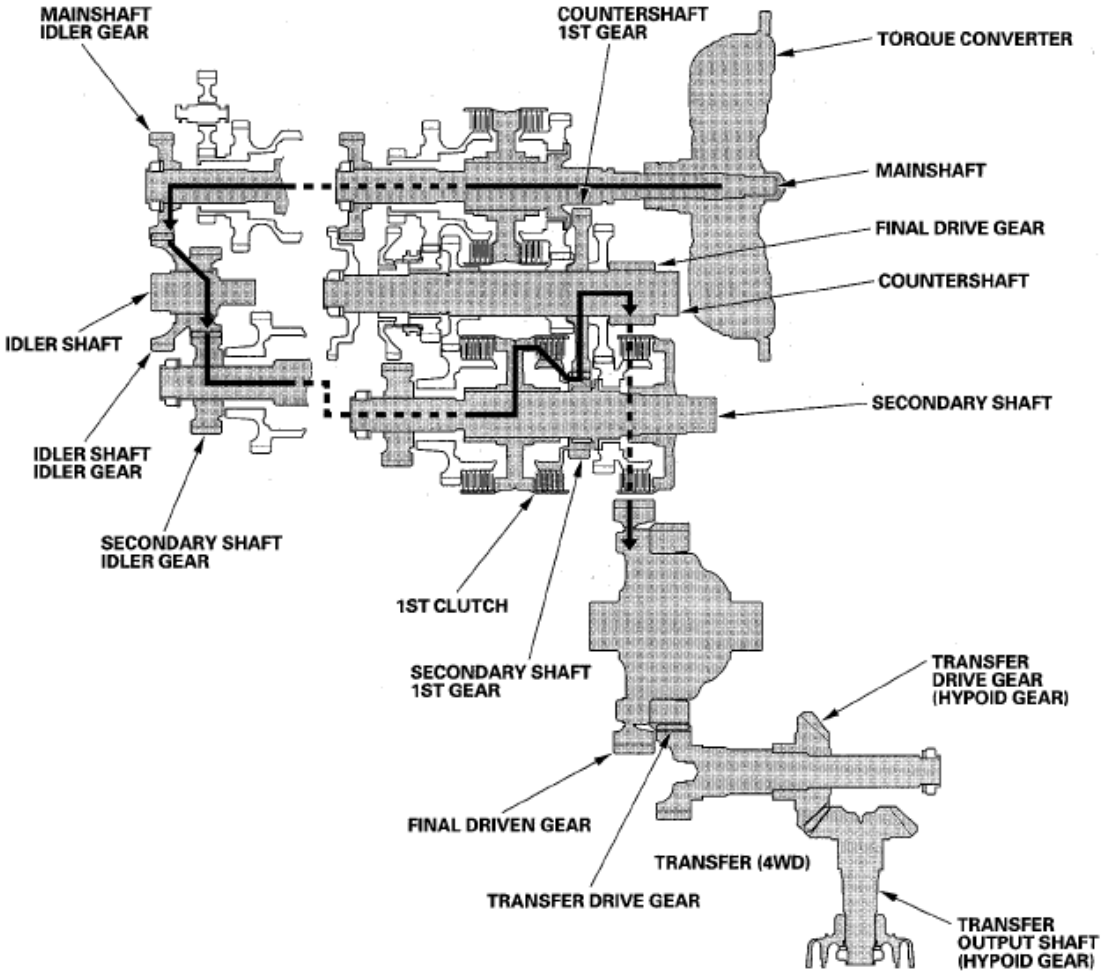


Fig. 18: Automatic Transmission Power Flow Diagram - 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2nd Gear

- Hydraulic pressure is applied to the 2nd clutch, then the 2nd clutch engages the secondary shaft 2nd gear with the secondary shaft.

- The mainshaft idler gear drives the secondary shaft via the idler shaft idler gear and the secondary shaft idler gear.
- The secondary shaft 2nd gear drives the countershaft 2nd gear and the countershaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear, and the transfer drive gear (4WD).
- 4WD: The transfer drive gear drives the transfer drive gear (hypoid gear) and the transfer output shaft (hypoid gear).

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

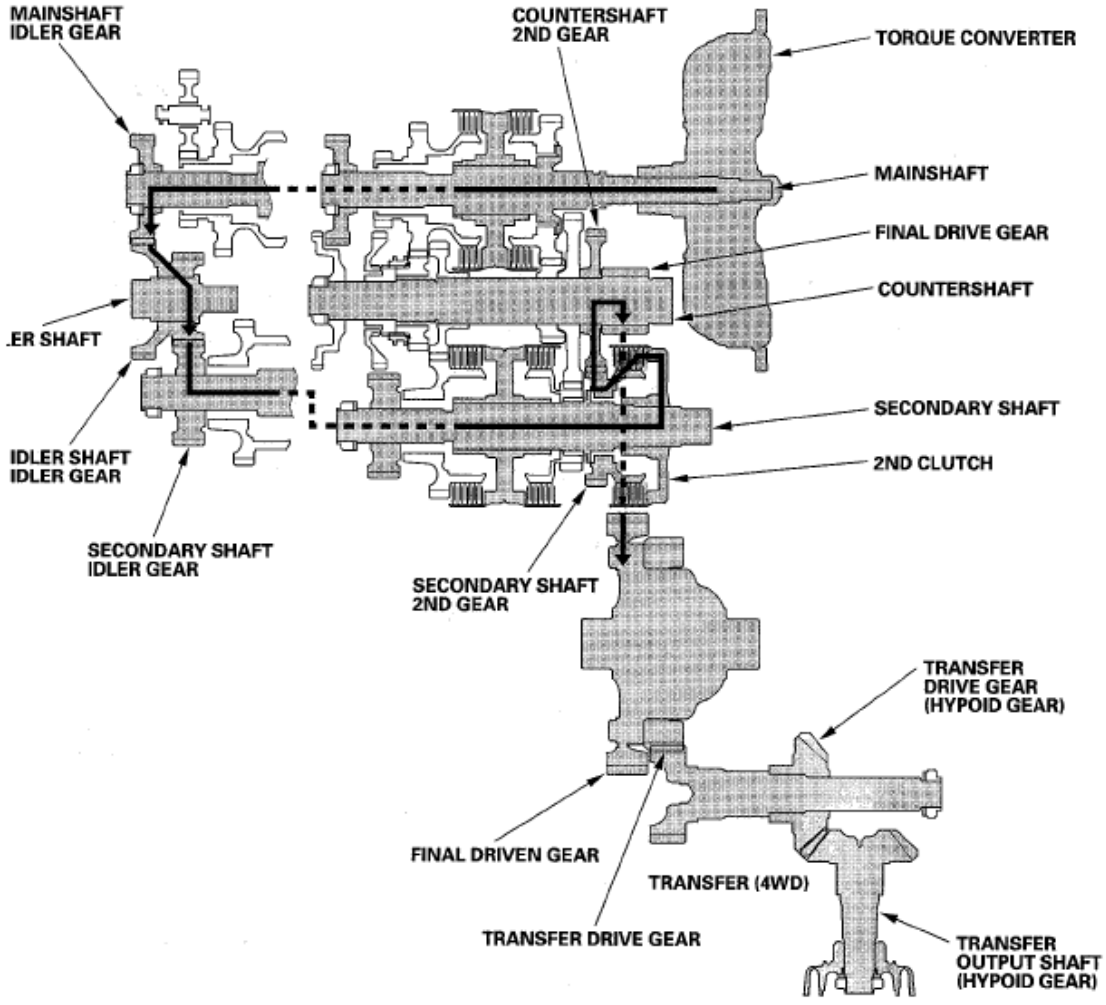


Fig. 19: Automatic Transmission Power Flow Diagram - 2nd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3rd Gear

- Hydraulic pressure is applied to the 3rd clutch, then the 3rd clutch engages the secondary shaft 3rd gear

with the secondary shaft.

- The mainshaft idler gear drives the secondary shaft via the idler shaft idler gear and secondary shaft idler gear.
- The secondary shaft 3rd gear drives the countershaft 3rd gear and the countershaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear, and the transfer drive gear (4WD).
- 4WD: The transfer drive gear drives the transfer drive gear (hypoid gear) and the transfer output shaft (hypoid gear).

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

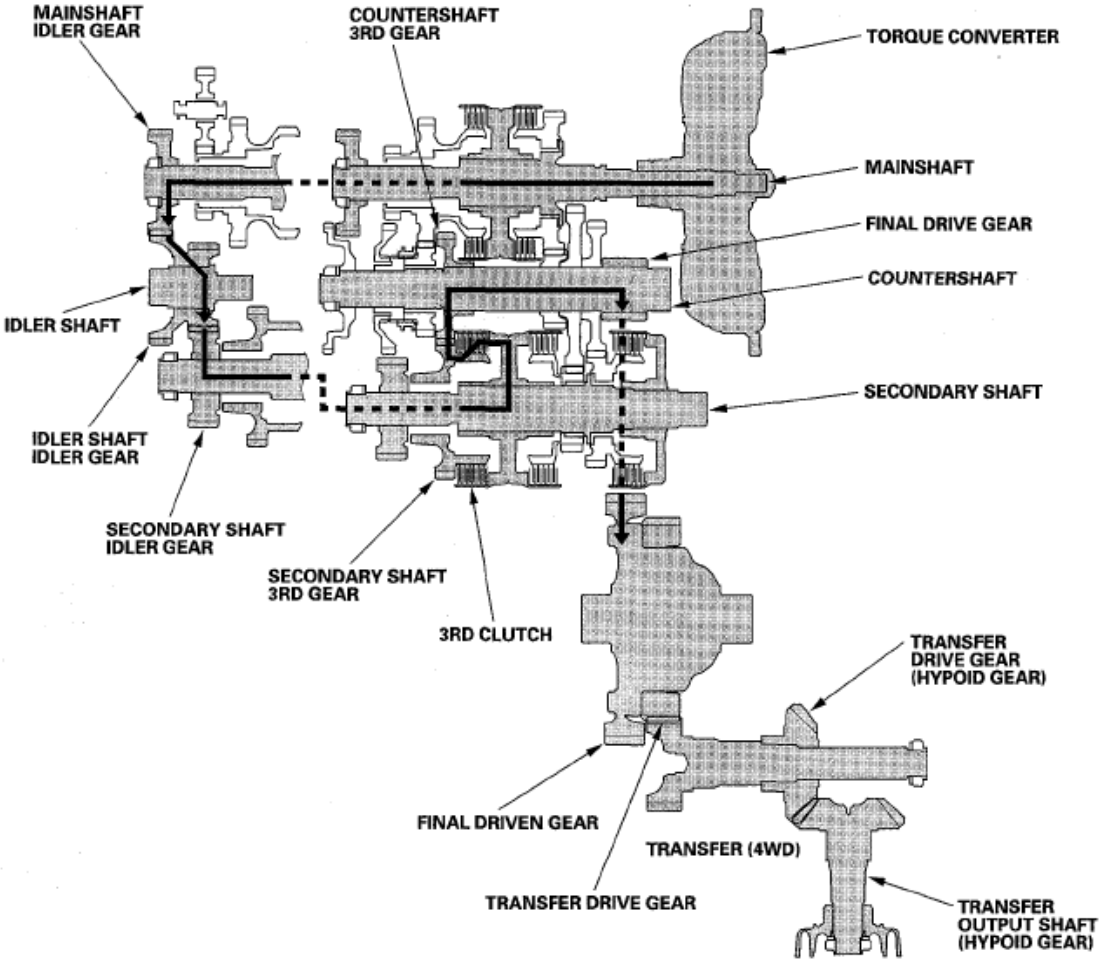


Fig. 20: Automatic Transmission Power Flow Diagram - 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4th Gear

- Hydraulic pressure is applied to the servo valve to engage the reverse selector with the countershaft 4th

gear and reverse selector hub while the shift lever is in forward range (D, 2, and 1 positions).

- Hydraulic pressure is also applied to the 4th clutch, then the 4th clutch engages the mainshaft 4th gear with the mainshaft.
- The mainshaft 4th gear drives the countershaft 4th gear and the countershaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear, and the transfer drive gear (4WD).
- 4WD: The transfer drive gear drives the transfer drive gear (hypoid gear) and the transfer output shaft (hypoid gear).

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

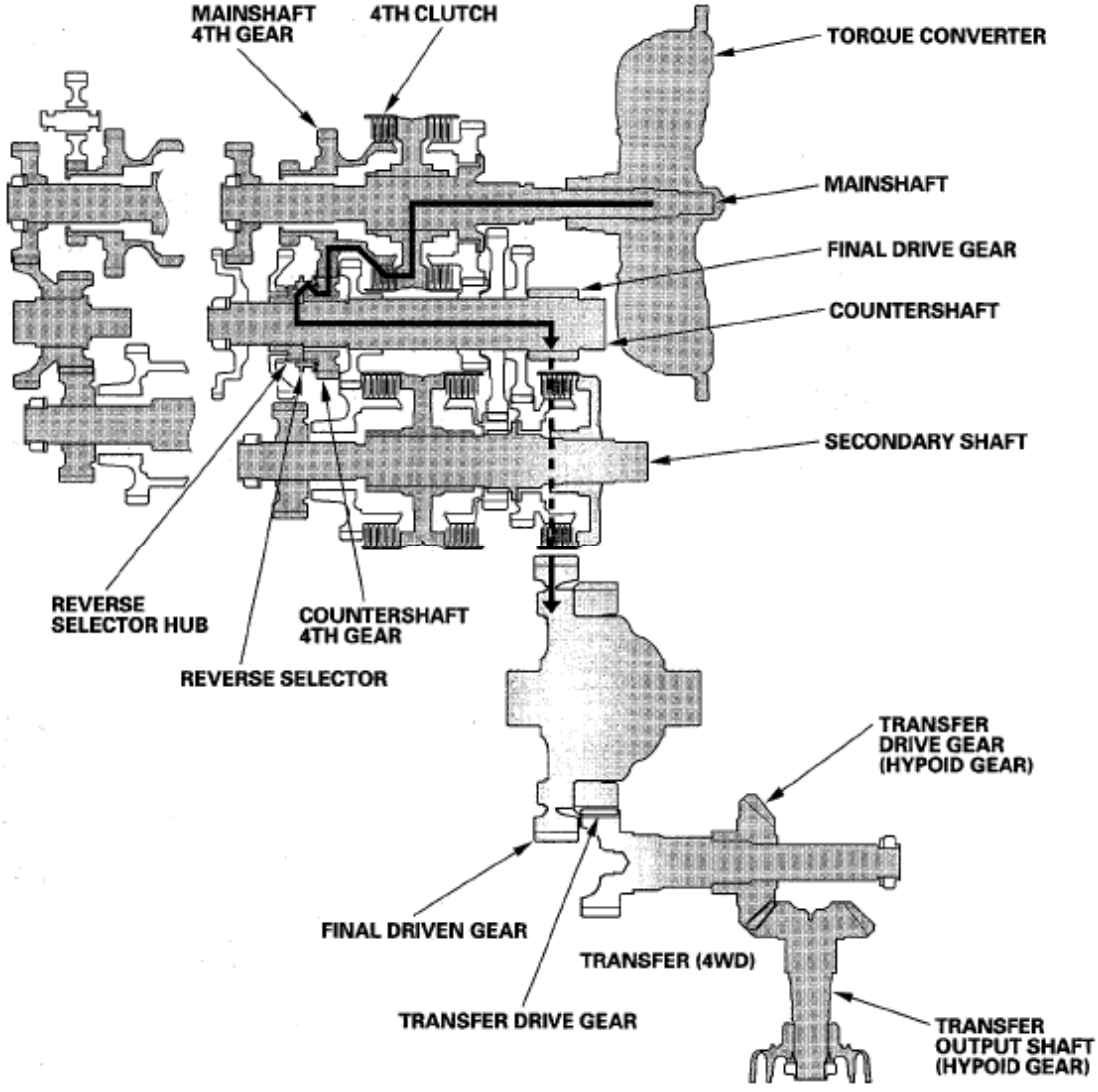


Fig. 21: Automatic Transmission Power Flow Diagram - 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5th Gear

- Hydraulic pressure is applied to the 5th clutch, then the 5th clutch engages the mainshaft 5th gear with the mainshaft.
- The mainshaft 5th gear drives the countershaft 5th gear and the countershaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear, and the transfer drive gear (4WD).
- 4WD: The transfer drive gear drives the transfer drive gear (hypoid gear) and the transfer output shaft (hypoid gear).

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

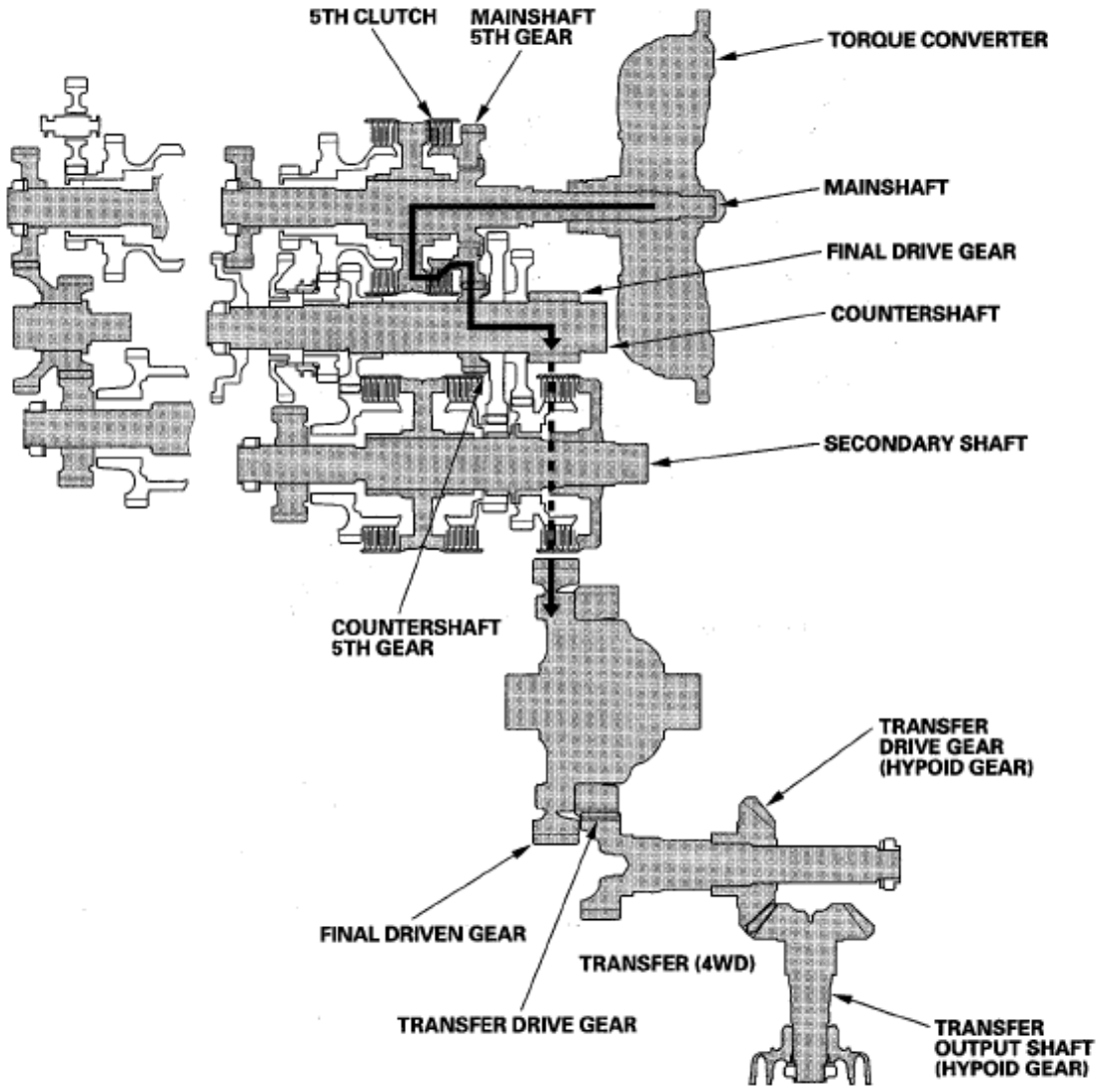


Fig. 22: Automatic Transmission Power Flow Diagram - 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

R Position

- Hydraulic pressure is applied to the servo valve to engage the reverse selector with the countershaft reverse gear and reverse selector hub while the shift lever is in the R position.
- Hydraulic pressure is also applied to the 4th clutch, then the 4th clutch engages the mainshaft reverse gear with the mainshaft.
- The mainshaft reverse gear drives the countershaft reverse gear via the reverse idler gear.
- The rotation direction of the countershaft reverse gear is changed by the reverse idler gear.
- The countershaft reverse gear drives the countershaft via the reverse selector, which drives the reverse selector hub.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear, and the transfer drive gear (4WD).
- 4WD: The transfer drive gear drives the transfer drive gear (hypoid gear) and the transfer output shaft (hypoid gear).

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

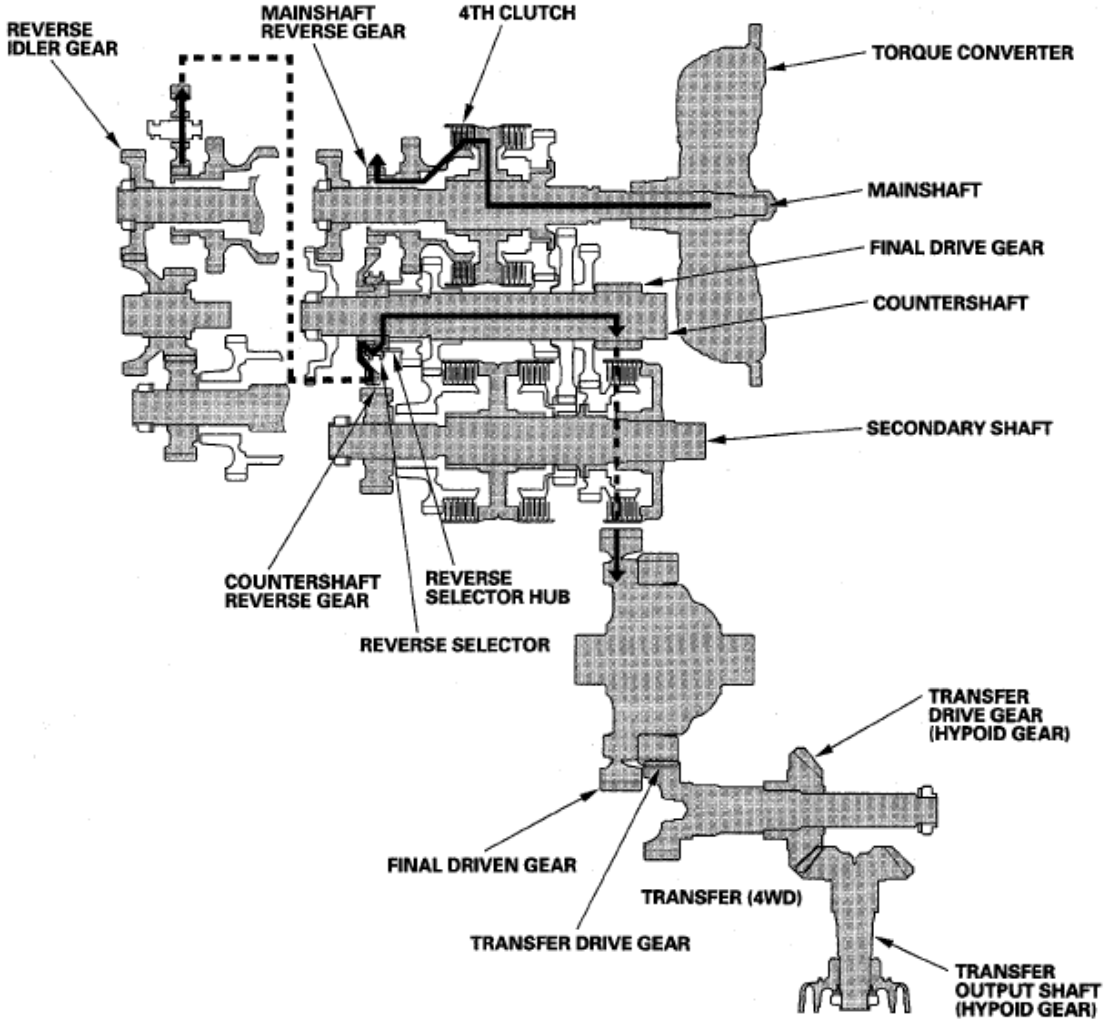


Fig. 23: Automatic Transmission Power Flow Diagram - R Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC CONTROL SYSTEM

Functional Diagram

The electronic control system consists of the powertrain control module (PCM), sensors, and solenoid valves. Shifting and lock-up are electronically controlled for comfortable driving under all conditions.

The PCM receives input signals from the sensors, switches, and other control units, processes data, and outputs signals for the engine control system and A/T control system. The A/T control system includes shift control, grade logic control, clutch pressure control, and lock-up control.

The PCM switches the shift solenoid valves and the A/T clutch pressure control solenoid valves to control shifting transmission gears and lock-up torque converter clutch.

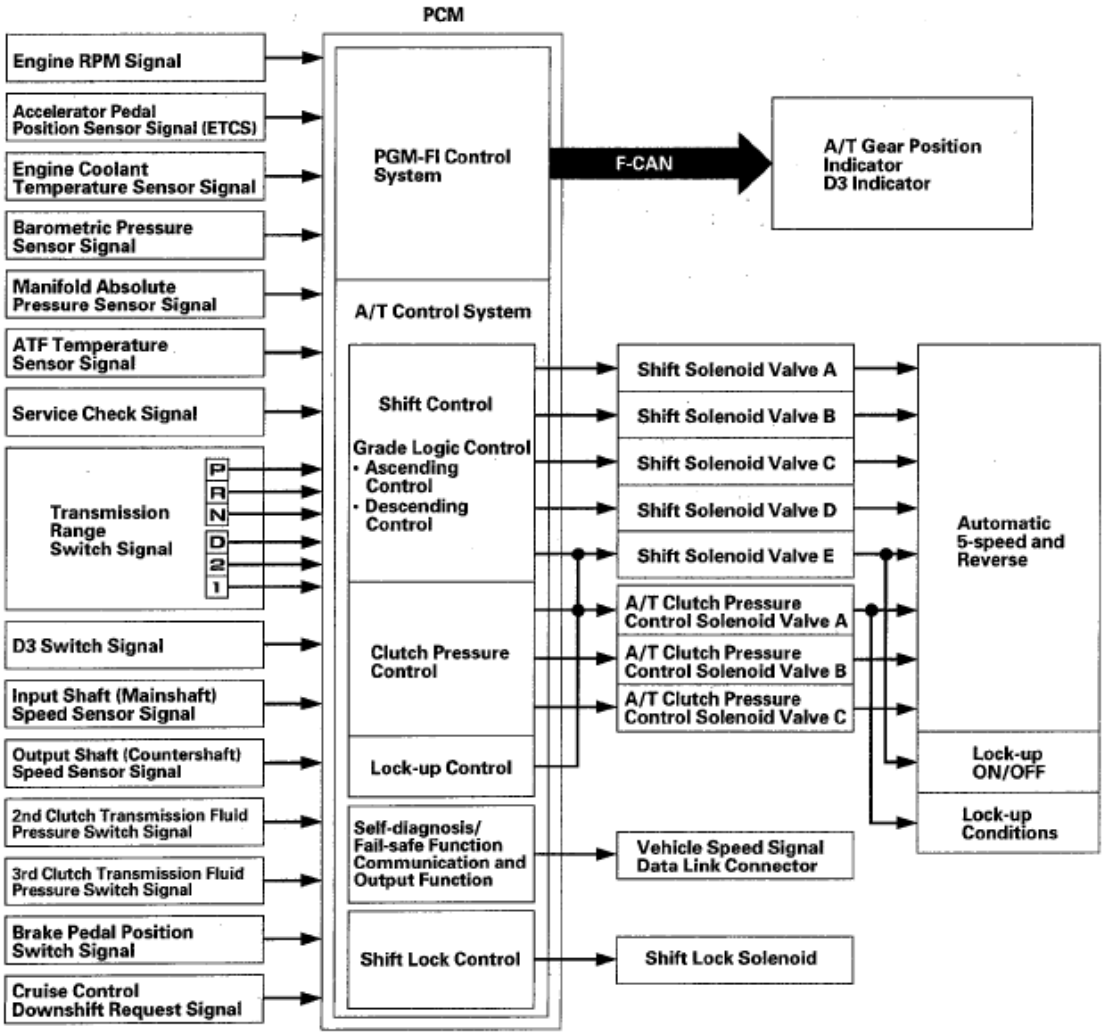


Fig. 24: Powertrain Control Module - Functional Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Control

The PCM instantly determines which gears should be selected by various signals sent from sensors and switches, and it actuates shift solenoid valves A, B, C, D, and E to control shifting transmission gears.

Also, a grade logic control system has been adopted to control shifting in the D position. The PCM compares actual driving conditions with memorized driving conditions, based on the input from the accelerator pedal position sensor, the engine coolant temperature sensor, the barometric pressure sensor, the brake pedal position switch signal, and the shift lever position signal, to control shifting while the vehicle is ascending or descending a slope.

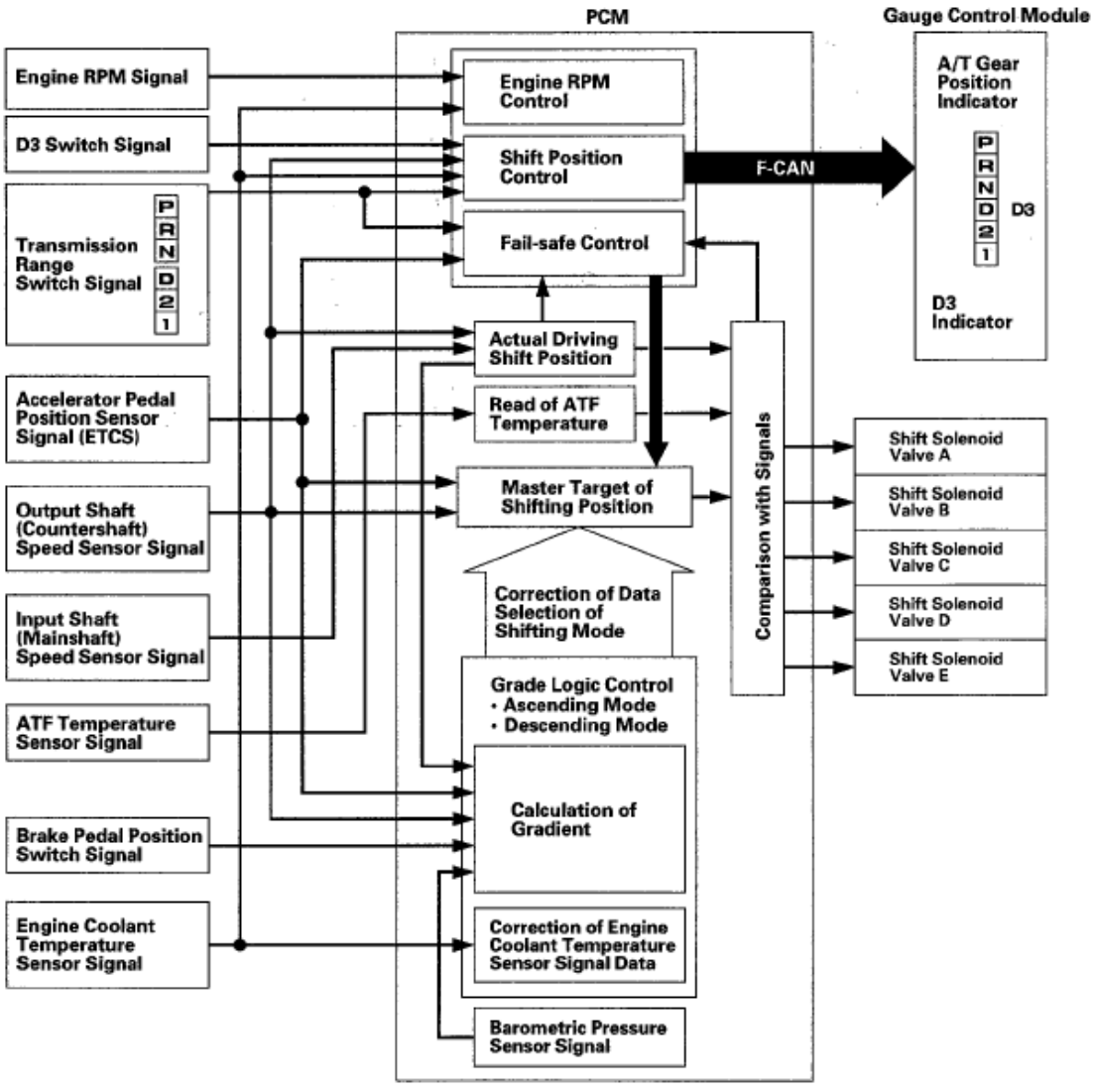


Fig. 25: Powertrain Control Module - Functional Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Solenoid Valve ON-OFF Operation

The PCM turns shift solenoid valves A, B, C, D, and E ON and OFF to control transmission gear shifting. The combination of driving signals to shift solenoid valves A, B, C, D, and E are shown in the table.

SHIFT SOLENOID VALVE ON-OFF OPERATION

Position	Gear position	Shift solenoid valves				
		A	B	C	D	E
D	Shifting from N position	OFF	ON	ON	OFF	OFF
	Stays in 1st	ON	ON	ON	OFF	OFF
	Shifting gears	OFF	ON	ON	OFF	OFF

	between 1st and 2nd					
	Stays in 2nd	OFF	ON	OFF	ON	OFF or ON
	Shifting gears between 2nd and 3rd	OFF	ON	ON	ON	OFF or ON
	Stays in 3rd	OFF	OFF	ON	OFF	OFF or ON
	Shifting gears between 3rd and 4th	OFF	OFF	OFF	OFF	OFF or ON
	Stays in 4th	ON	OFF	OFF	OFF	OFF or ON
	Shifting gears between 4th and 5th	ON	OFF	OFF	ON	OFF or ON
	Stays in 5th	ON	OFF	ON	ON	OFF or ON
2	2nd gear	OFF	ON	OFF	ON	OFF
1	1st gear	ON	ON	ON	OFF	OFF
R	Shifting from P and N position	OFF	ON	OFF	OFF	ON
	Stays in reverse	ON	ON	OFF	OFF	ON
	Reverse inhibit	ON	ON	OFF	OFF	OFF
P	Park	OFF	ON	OFF	OFF	ON
N	Neutral	OFF	ON	ON	OFF	OFF

Grade Logic Control: Ascending Control

When the PCM determines that the vehicle is climbing a hill in the D position, the system extends the engagement area of 2nd, 3rd, and 4th gears to prevent the transmission from frequently shifting between 2nd and 3rd gears, between 3rd and 4th gears, and between 4th and 5th gears, so the vehicle can run smooth and have more power when needed.

Shift schedules stored in the PCM between 2nd and 3rd gears, between 3rd and 4th gears, and between 4th and 5th gears, enable it to automatically select the most suitable gear according to the magnitude of a gradient.

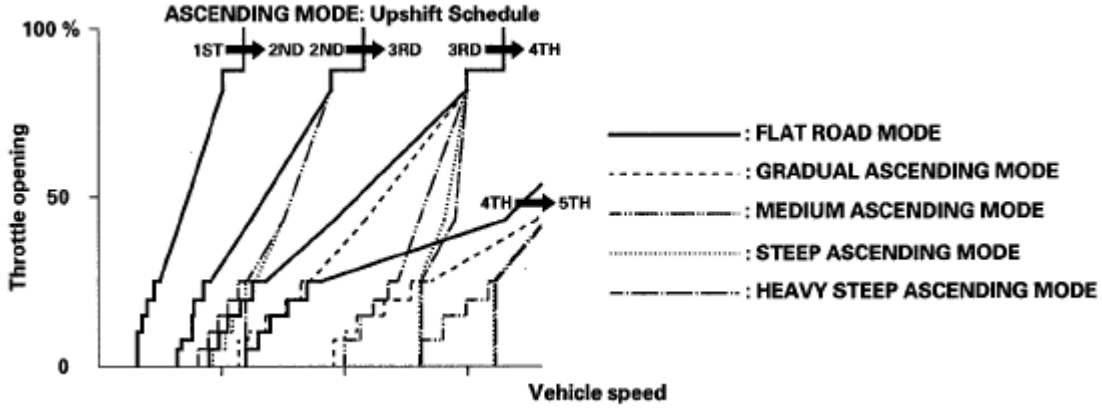


Fig. 26: Grade Logic Control - Ascending Control Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Grade Logic Control: Descending Control

When the PCM determines that the vehicle is going down a hill in the D position, the shift-up speed from 4th to 5th gear, from 3rd to 4th gear, and from 2nd to 3rd gear (when the throttle is closed) becomes faster than the set speed for flat road driving to widen the 4th gear, 3rd gear, and 2nd gear driving area. This, in combination with engine braking from the deceleration lock-up, achieves smooth driving when the vehicle is descending. There are three descending modes with different 4th gear driving areas, 3rd gear driving areas, and 2nd gear driving areas according to the magnitude of a gradient stored in the PCM. When the vehicle is in 5th gear or 4th gear, and you are decelerating when you are applying the brakes on a steep hill, the transmission will downshift to lower gear. When you accelerate, the transmission will then return to a higher gear.

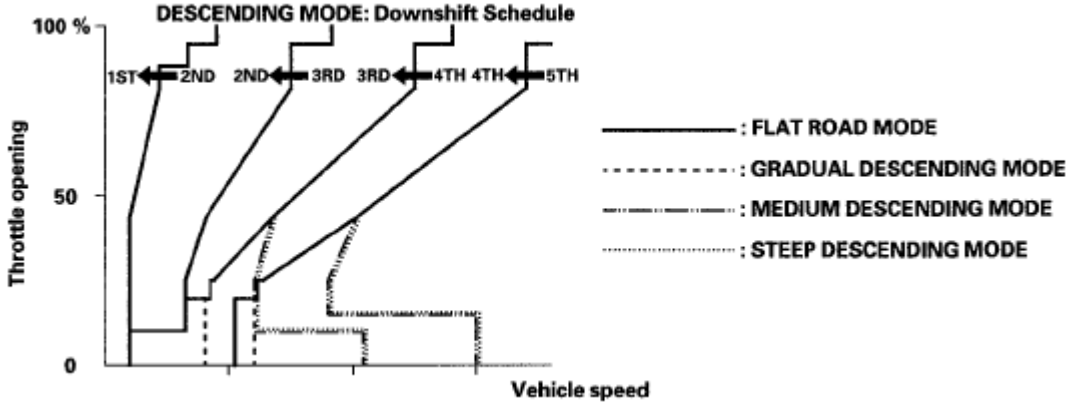


Fig. 27: Grade Logic Control - Descending Control Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Clutch Pressure Control

The PCM actuates A/T clutch pressure control solenoid valves A, B, and C to control the clutch pressure. When shifting between lower and higher gears, the clutch pressure regulated by A/T clutch pressure control solenoid valves A, B, and C engages and disengages the clutch smoothly.

The PCM receives input signals from the various sensors and switches, processes data, and outputs a current to A/T clutch pressure control solenoid valves A, B, and C.

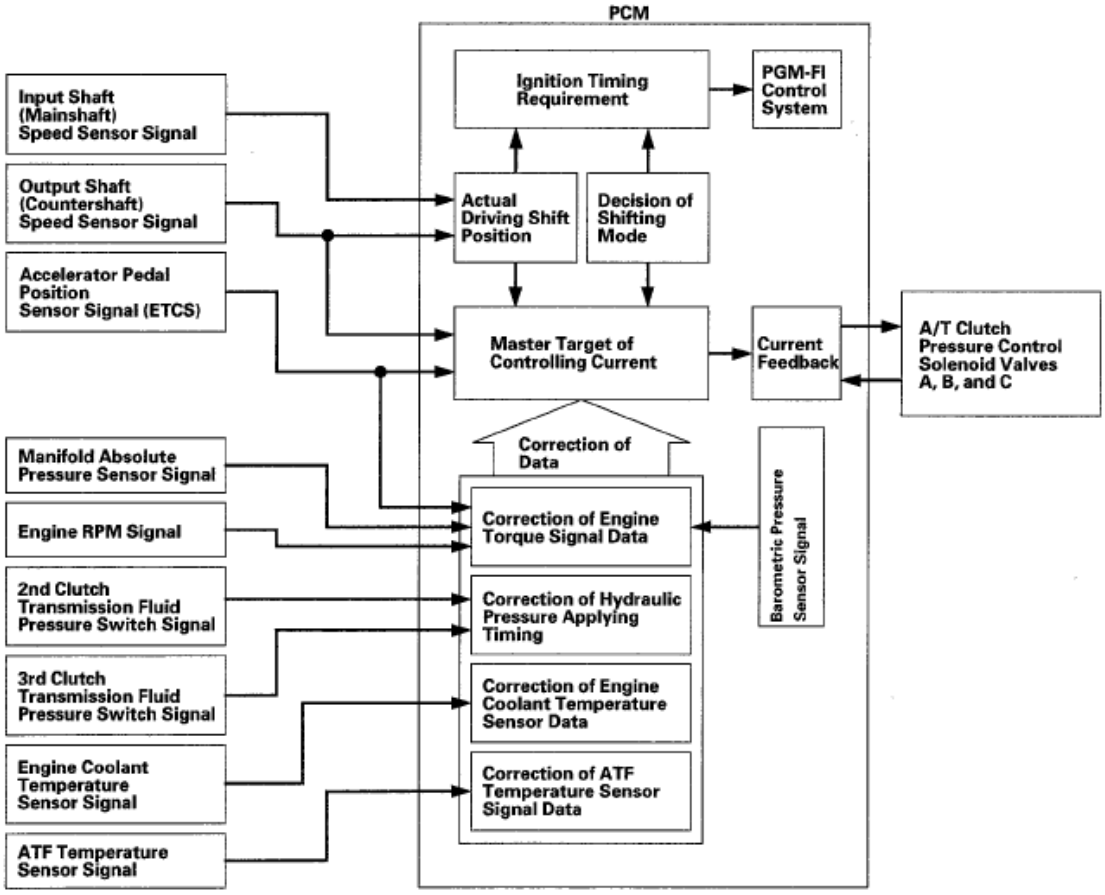


Fig. 28: Clutch Pressure Control - Functional Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Lock-up Control

Shift solenoid valve E controls the hydraulic pressure to switch the lock-up shift valve and lock-up ON and OFF. The PCM actuates shift solenoid valve E and A/T clutch pressure control solenoid valve A to control the torque converter clutch lock-up. When shift solenoid valve E is turned ON, the lock-up condition starts. A/T clutch pressure control solenoid valve A regulates and apply the hydraulic pressure to the lock-up control valve to control the amount of the lock-up. The lock-up mechanism operates in 2nd, 3rd, 4th, and 5th gears in the D position, and 2nd and 3rd gears in the D position D3 driving mode.

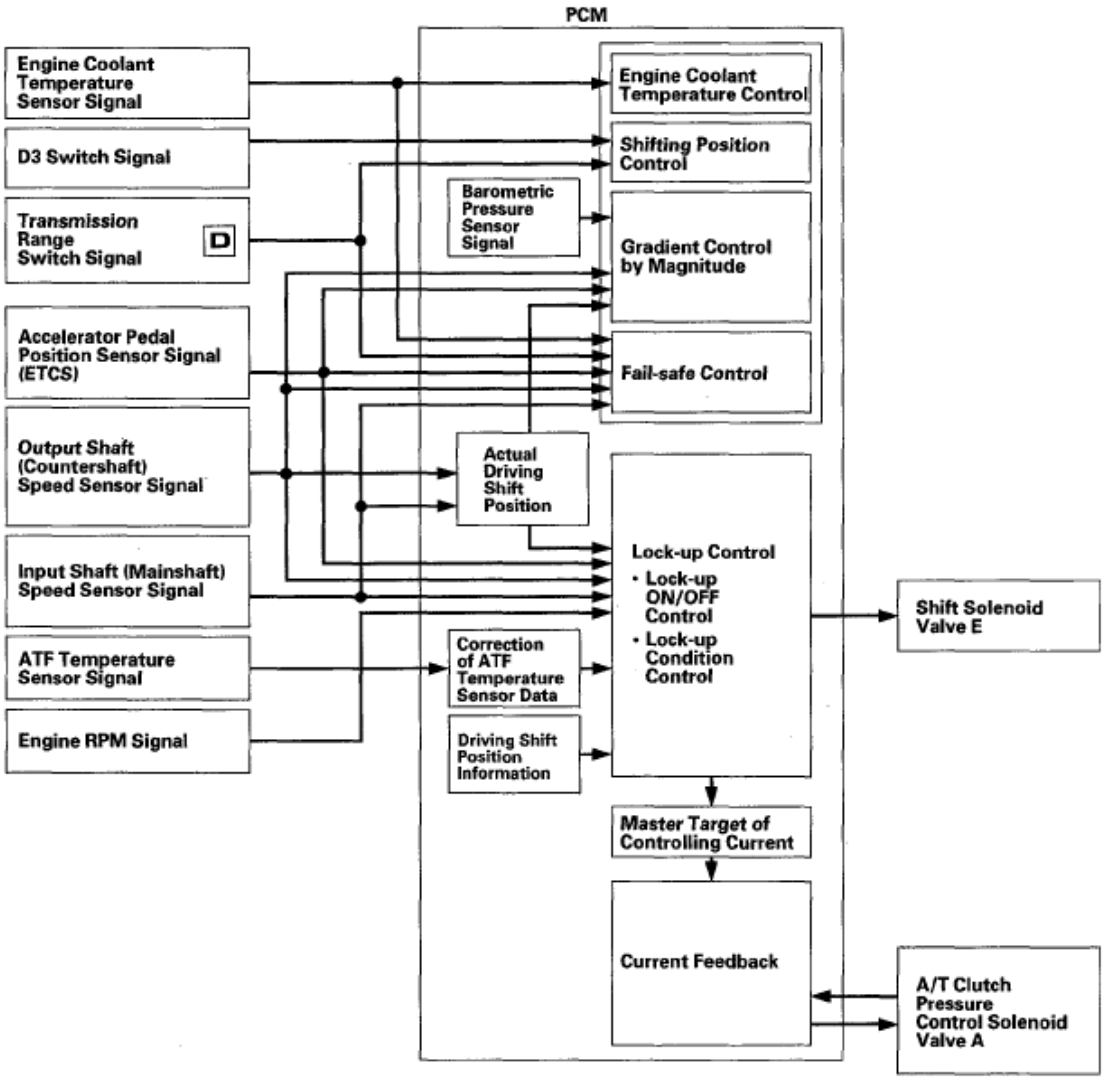


Fig. 29: Lock-Up Control - Functional Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM A/T Control System Electrical Connections

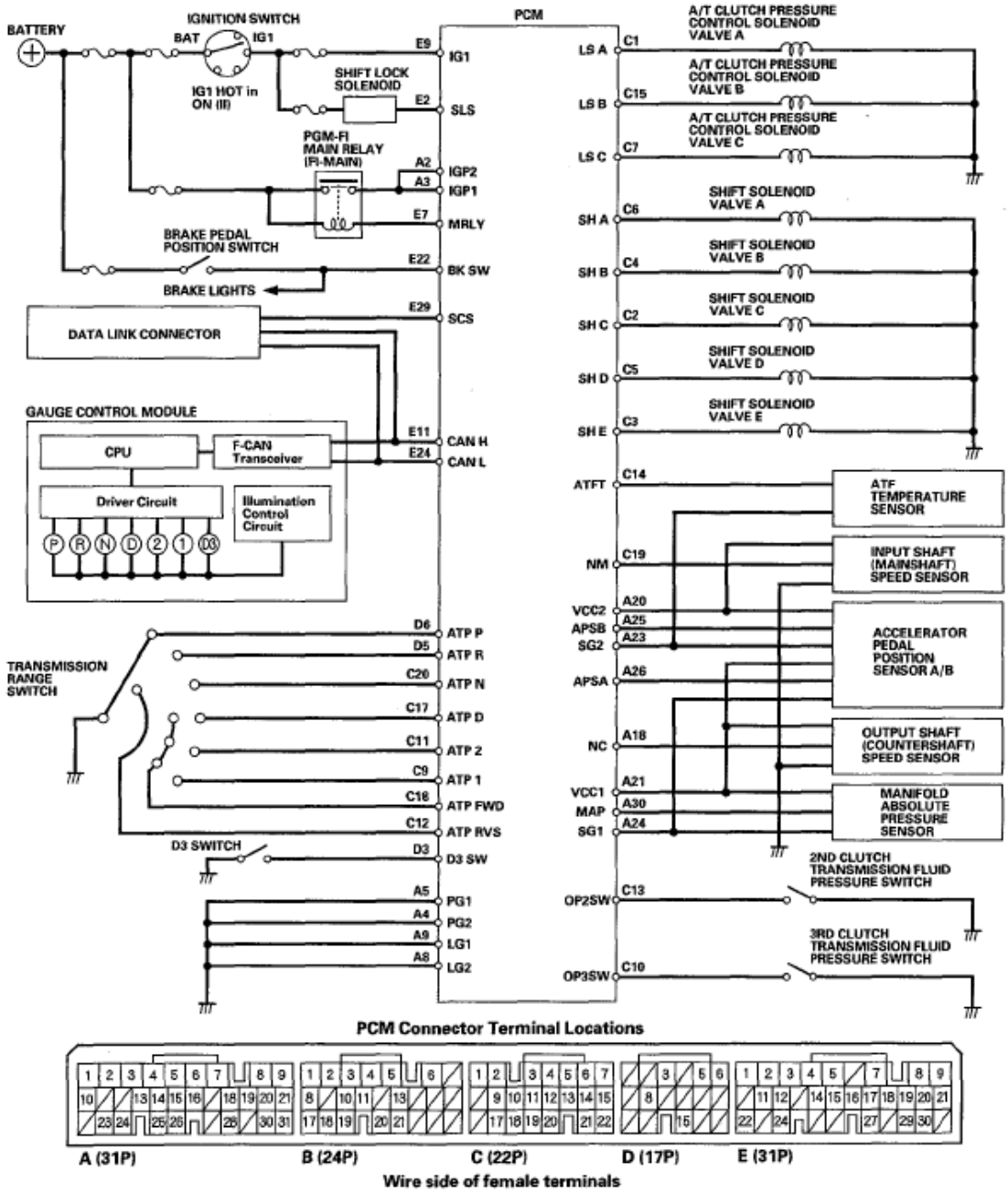


Fig. 30: PCM A/T Control System - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM Connector Terminal Locations

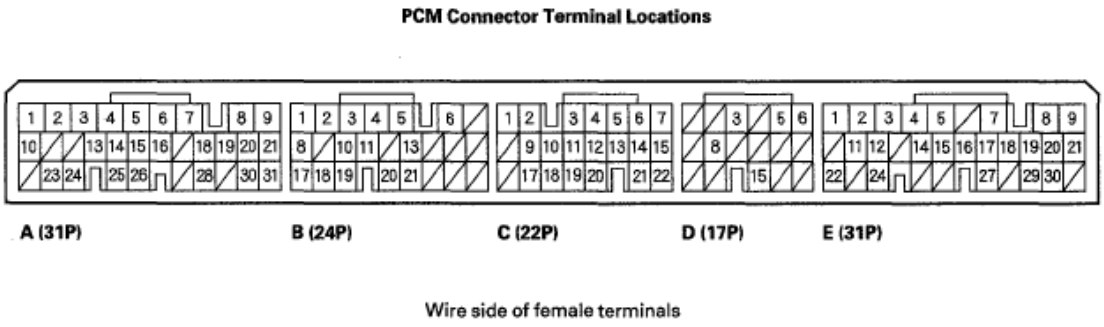


Fig. 31: Identifying PCM Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM CONNECTOR A (31P)

PCM CONNECTOR TERMINAL REFERENCE

Terminal number	Wire color	Terminal name	Description	Signal
A2	YEL/BLK	IGP2 (POWER SOURCE)	Power source for PCM circuit	With ignition switch ON (II): Battery voltage With ignition switch OFF: About 0 V
A3	YEL/BLK	IGP1 (POWER SOURCE)	Power source for PCM circuit	With ignition switch ON (II): Battery voltage With ignition switch OFF: About 0 V
A4	BLK	PG2 (POWER GROUND)	Ground circuit for PCM	Less than 1.0 V at all times
A5	BLK	PG1 (POWER GROUND)	Ground circuit for PCM	Less than 1.0 V at all times
A8	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for PCM	Less than 1.0 V at all times
A9	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for PCM	Less than 1.0 V at ail times
A18	BLU	NC (OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signal	With ignition switch ON (II): About 0 V or about 5.0 V With vehicle moving: About 1.5-3.5 V (pulses)
A20	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II):

				About 5.0 V With ignition switch OFF: About 0 V
A21	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): About 5.0 V With ignition switch OFF: About 0 V
A23	GRN/BLK	SG2 (SENSOR GROUND)	Sensor around	Less than 1.0 V at all times
A24	GRN/WHT	SG1 (SENSOR GROUND)	Sensor around	Less than 1.0 Vat all times
A25	RED/YEL	APSB (ACCELERATOR PEDAL POSITION (APP) SENSOR B)	Detects APP sensor B signal	With ignition switch ON (II) and accelerator pedal fully pressed: About 2.3 V With ignition switch ON (II) and accelerator pedal released: About 0.2 V
A26	RED/BLU	APSA (ACCELERATOR PEDAL POSITION (APP) SENSOR A)	Detects APP sensor A signal	With ignition switch ON (II) and accelerator pedal fully pressed: About 4.5 V With ignition switch ON (II) and accelerator pedal released: About 0.5 V
A30	GRN/RED	MAP (MANIFOLD ABSOLUTE PRESSURE SENSOR)	Detects MAP sensor signal	With ignition switch ON (II): About 3.0 V At idle: About 1.0 V (depending on engine speed)

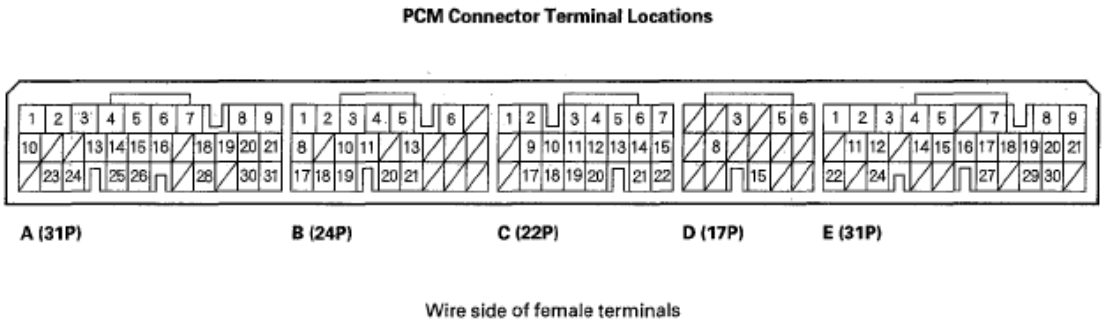


Fig. 32: Identifying PCM Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM CONNECTOR C (22P)

PCM CONNECTOR TERMINAL REFERENCE

Terminal number	Wire color	Terminal name	Description	Signal
C1	BLK/BLU	LS A (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A)	Drives A/T clutch pressure control solenoid valve A	With ignition switch ON (II): Current controlled
C2	GRN	SHC (SHIFT SOLENOID VALVE C)	Drives shift solenoid valve C	With engine running in N, D (in 1st, 3rd, and 5th gears), and 1 positions: Battery voltage With engine running in P, R, D (in 2nd and 4th gears), and 2 positions: About 0 V
C3	YEL	SHE (SHIFT SOLENOID VALVE E)	Drives shift solenoid valve E	With engine running in P and R positions: Battery voltage With engine running in N, D, 2, and 1 positions: About 0 V
C4	GRN/WHT	SH B (SHIFT SOLENOID VALVE B)	Drives shift solenoid valve B	With engine running in P, R, N, D (in 1st and 2nd gears), 2, and 1 positions: Battery voltage With engine running in. D (in 3rd, 4th and 5th gears) positions: About 0 V
C5	GRN/RED	SH D (SHIFT	Drives shift	With engine running

		SOLENOID VALVE D)	solenoid valve D	in D (in 2nd and 5th gears), and 2 positions: Battery voltage With engine running in P, R, N, D (in 1st, 3rd, and 4th gears), and 1 positions: About 0 V
C6	BLU/BLK	SH A (SHIFT SOLENOID VALVE A)	Drives shift solenoid valve A	With engine running in R, D (in 1st, 4th, and 5th gears), and 1 positions: Battery voltage With engine running in P, N, D (in 2nd and 3rd gears), and 2 positions: About 0 V
C7	BLU/YEL	LS C (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C)	Drives A/T clutch pressure control solenoid valve C	With ignition switch ON (II): Current controlled
C9	BRN	ATP 1 (TRANSMISSION RANGE SWITCH 1)	Detects transmission range switch 1 position signal	In 1 position: About 0 V In any position other than 1 position: Battery voltage
C10	BLU/WHT	OP3SW (3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 3rd clutch transmission fluid pressure switch signal	With ignition switch ON (II): • Without 3rd clutch pressure: About 5.0 V • With 3rd clutch pressure: About 0 V
C11	BLU	ATP 2 (TRANSMISSION RANGE SWITCH 2)	Detects transmission range switch 2 position signal	In 2 position: About 0 V In any position other than 2 position: Battery voltage
C12	RED/WHT	ATP RVS (TRANSMISSION	Detects transmission range	In R position: About 0 V

		RANGE SWITCH RVS)	switch RVS signal	In any position other than R position: Battery voltage
C13	BLU/RED	OP2SW (2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 2nd clutch transmission fluid pressure switch signal	With ignition switch ON (II): • Without 2nd clutch pressure: About 5.0 V • With 2nd clutch pressure: About 0 V
C14	RED/YEL	ATFT (ATF TEMPERATURE SENSOR)	Detects ATF temperature sensor signal	With ignition switch ON (II): About 0.2-4.8 V (about 1.8 V at operating temperature) (depending on ATF temperature)
C15	BRN/WHT	LS B (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B)	Drives A/T clutch pressure control solenoid valve B	With ignition switch ON (II): Current controlled
C17	YEL/GRN	ATP D (TRANSMISSION. RANGE SWITCH D)	Detects transmission range switch D signal	In D position: About 0 V In any position other than D position: Battery voltage
C18	YEL/RED	ATP FWD (TRANSMISSION RANGE SWITCH FWD)	Detects transmission range switch FWD signal	In D, 2, and 1 position: About 0 V In any position other than D, 2, and 1: Battery voltage
C19	WHT/RED	NM (INPUT SHAFT (MAINSHAFT) SPEED SENSOR)	Detects input shaft (mainshaft) speed sensor signal	With ignition switch ON (II): About 0 V or about 5.0 V With engine idling in N position: About 1.5-3.5 V (pulses)
C20	RED/BLK	ATP N (TRANSMISSION RANGE SWITCH N)	Detects transmission range switch N signal	In N position: About 0 V In any position other than N position:

				Battery voltage

PCM CONNECTOR D (17P)

PCM CONNECTOR TERMINAL REFERENCE

Terminal number	Wire color	Terminal name	Description	Signal
D3	GRN	D3 SW(D3 SWITCH)	Detects D3 switch signal	D3 switch ON: About 0 V D3 switch OFF: Battery Voltage
D5	WHT	ATP R (TRANSMISSION RANGE SWITCH R)	Detects transmission range switch R signal	In R position: About 0 V In any position other than R position: Battery voltage
D6	BLK/BLU	ATP P (TRANSMISSION RANGE SWITCH P)	Detects transmission range switch P signal	In P position: About 0 V In any position other than P position: Battery voltage

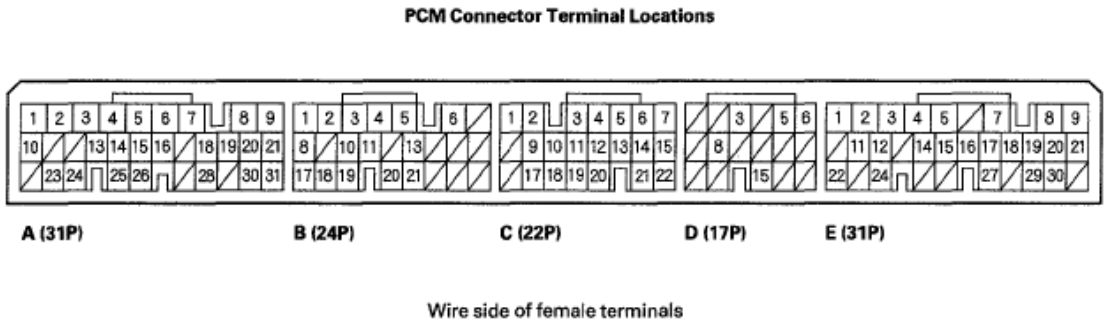


Fig. 33: Identifying PCM Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM CONNECTOR E (31P)

PCM CONNECTOR TERMINAL REFERENCE

Terminal number	Wire color	Terminal name	Description	Signal
E2	WHT/BLU	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II), in P position, brake pedal pressed, and accelerator closed: About 0 V

E7	RED/YEL	MRLY (PGM-FI MAIN RELAY)	Drives PGM-FI main relay 1 (FI-MAIN) Power source for DTC memory	With ignition switch ON (II): About 0 V With ignition switch OFF: Battery voltage
E9	BLK/YEL	IG1 (IGNITION SWITCH)	Detects ignition switch signal	With ignition switch ON (II): Battery voltage
E11	WHT	CAN H (CAN COMMUNICATION SIGNAL HIGH)	Sends and receives communication signal	With ignition switch ON (II): About 2.5 V (pulses)
E22	WHT/BLK	BK SW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With brake pedal released: About 0 V With brake pedal pressed: Battery voltage
E24	RED	CAN L (CAN COMMUNICATION SIGNAL LOW)	Sends and receives communication signal	With ignition switch ON (II): About 2.5 V (pulses)
E29	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With the service check signal shorted using HDS: About 0 V With the service check signal open: About 5.0 V

HYDRAULIC CONTROLS

Valve Bodies

The valve body includes the main valve body, the regulator valve body, and the servo body. The ATF pump is driven by splines on the left end of the torque converter which is attached to the engine. Fluid flows through the regulator valve to maintain specified pressure through the main valve body to the manual valve, directing pressure to the shift valves and to each of the clutches via the solenoid valves. Shift solenoid valves A, B, C, D, and E are bolted on the servo body. A/T clutch pressure control solenoid valves A, B, and C are mounted on the outside of the transmission housing.

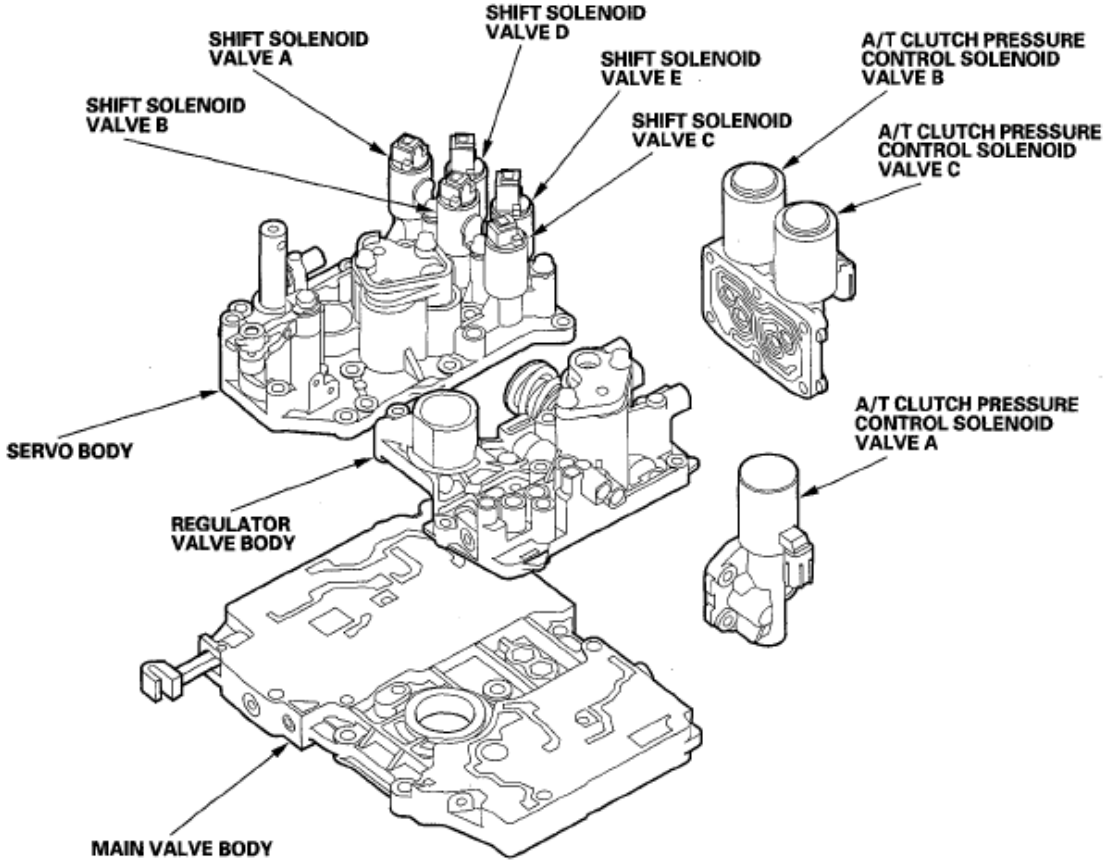


Fig. 34: Identifying Valve Bodies
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Valve Body

The main valve body contains the manual valve, shift valves A, B, C, and E, the relief valve, the lock-up control valve, the cooler check valve, the servo control valve, and the ATF pump gears. The primary function of the main valve body is to switch fluid pressure on and off and to control hydraulic pressure going to the hydraulic control system.

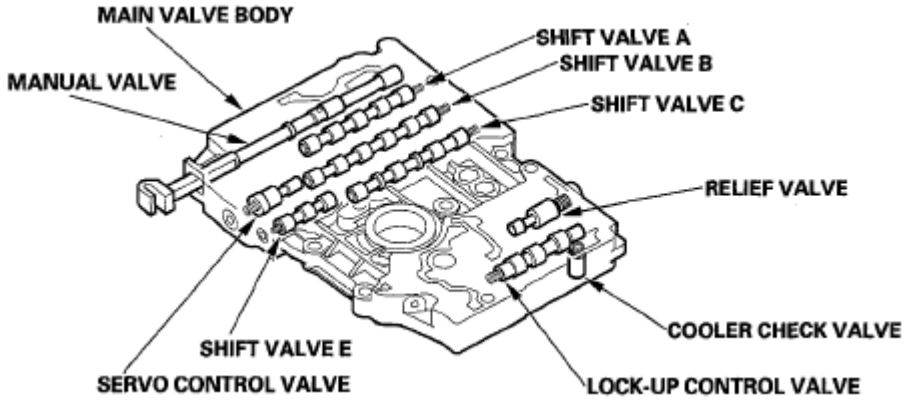


Fig. 35: Identifying Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Regulator Valve Body

The regulator valve body contains the regulator valve, the torque converter check valve, the lock-up shift valve, and the 1st and 3rd accumulators.

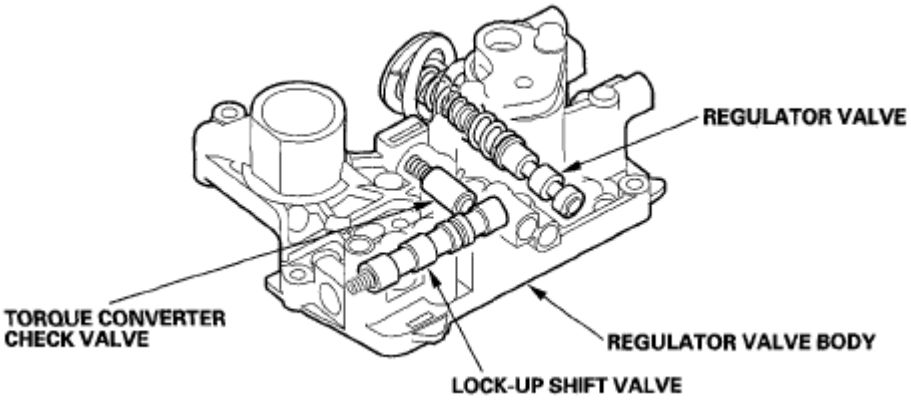


Fig. 36: Identifying Regulator Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Regulator Valve

The regulator valve maintains a constant hydraulic pressure from the ATF pump to the hydraulic control system, while also furnishing fluid to the lubrication system and torque converter. Fluid from the ATF pump flows through B and C. Fluid entering from B flows through the valve orifice to the A cavity. This pressure of the A cavity pushes the regulator valve to the right side, and this movement of the regulator valve uncovers the fluid port to the torque converter and the relief valve. The fluid flows out to the torque converter and the relief valve, and the regulator valve returns under spring force. According to the level of the hydraulic pressure through B, the position of the regulator valve changes, and the amount of fluid from C through torque converter also changes. This operation is continued, maintaining the line pressure.

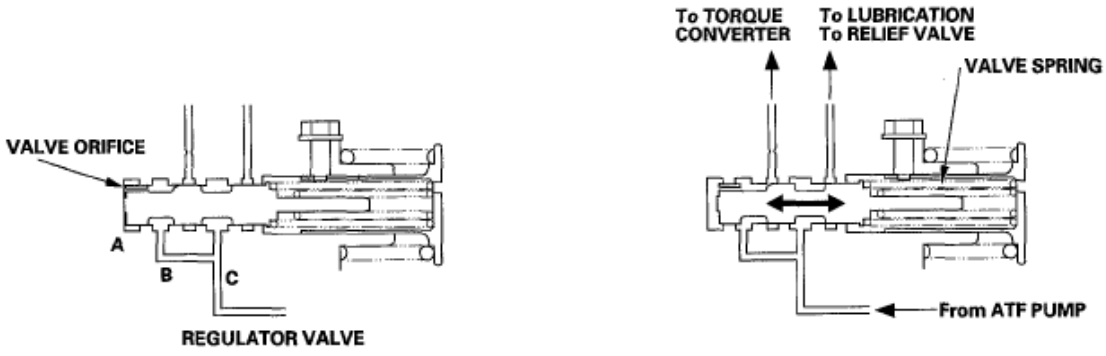


Fig. 37: Identifying Regulator Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Increases in hydraulic pressure according to torque are regulated by the regulator valve using stator torque reaction. The stator shaft is splined with the stator in the torque converter, and its arm end contacts the regulator spring cap. When the vehicle is accelerating or climbing (torque converter range), stator torque reaction acts on the stator shaft, and the stator arm pushes the regulator spring cap in the direction of the arrow in proportion to the reaction. The stator reaction spring compresses, and the regulator valve moves to increase the line pressure which is regulated by the regulator valve. The line pressure reaches its maximum when the stator torque reaction reaches its maximum.

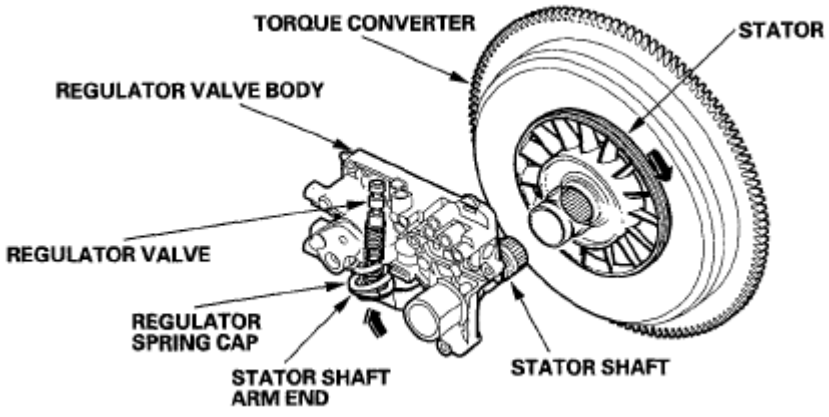


Fig. 38: Locating Regulator Spring Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Servo Body

The servo body contains the servo valve, shift valve D, the accumulators for 2nd, 4th, and 5th, and shift solenoid valves A, B, C, D, and E.

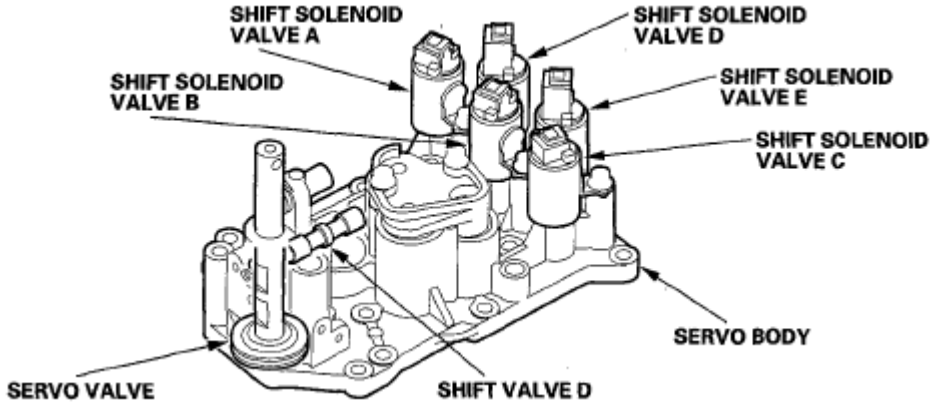


Fig. 39: Identifying Servo Body Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Accumulator

The accumulators are located in the regulator valve body and the servo body. The regulator valve body contains the 1st and 3rd accumulators, and the servo body contains the 2nd, 4th, and 5th accumulators.

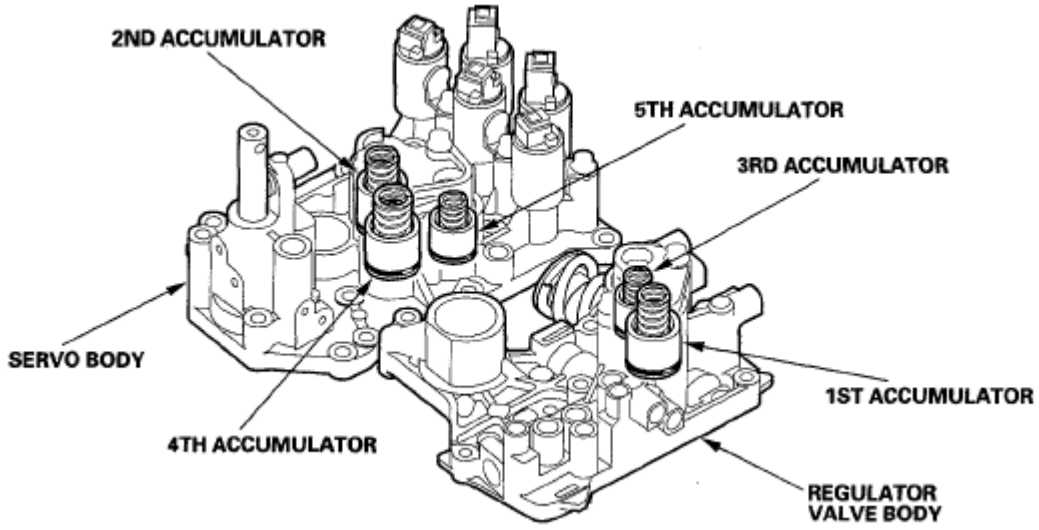


Fig. 40: Identifying Accumulator Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HYDRAULIC FLOW

Distribution of Hydraulic Pressure

As the engine turns, the ATF pump starts to operate. Automatic transmission fluid (ATF) is drawn through the ATF strainer (filter) and discharged into the hydraulic circuit. Then, ATF flowing from the ATF pump becomes line pressure that is regulated by the regulator valve. Torque converter pressure from the regulator valve enters the torque converter through the lock-up shift valve, and it is discharged from the torque converter. The torque converter check valve prevents torque converter pressure from rising.

The PCM turns the shift solenoid valves ON and OFF. The shift solenoid valve intercepts line pressure from the ATF pump via the manual valve when the shift solenoid valve is OFF. When the shift solenoid valve is turned ON, line pressure changes to shift solenoid valve pressure at the shift solenoid valve, then solenoid valve pressure flows to the shift valve. Applying shift solenoid pressure to the shift valves moves the position of the shift valve, and switches the port of the hydraulic circuit. The PCM also controls A/T clutch pressure control solenoid valves A, B, and C. The A/T clutch pressure control solenoid valves regulate hydraulic pressure, and apply the pressure to the clutches to engage smoothly. The clutches receive optimum clutch pressure which is regulated by the A/T clutch pressure control solenoid valves for comfortable driving and shifting under all conditions.

Hydraulic pressure at the port is as follows:

HYDRAULIC PRESSURE PORT REFERENCE

Port No.	Description of Pressure	Port No.	Description of Pressure
1	LINE	SB	SHIFT SOLENOID VALVE B
3	LINE	SC	SHIFT SOLENOID VALVE C

3'	LINE	SD	SHIFT SOLENOID VALVE D
4	LINE	SE	SHIFT SOLENOID VALVE E
4'	LINE	10	1ST CLUTCH
4"	LINE	20	2ND CLUTCH
7	LINE	30	3RD CLUTCH
1A	LINE or A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A	40	4TH CLUTCH
1B	LINE	50	5TH CLUTCH
3A	LINE	55	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A
3B	LINE	55'	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A
3C	LINE	56	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B
5A	LINE	57	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C
5B	LINE	90	TORQUE CONVERTER
5C	LINE	91	TORQUE CONVERTER
5D	LINE	92	TORQUE CONVERTER
5E	LINE or A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B	93	ATF COOLER
5F	LINE or A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A or B	94	TORQUE CONVERTER
5G	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B	95	LUBRICATION
5H	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C	96	TORQUE CONVERTER
5J	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C	97	TORQUE CONVERTER
5K	A/T CLUTCH PRESSURE CONTROL	99	SUCTION

	SOLENOID VALVE C		
5L	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C	X	DRAIN
5N	A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C	HX	HIGH POSITION DRAIN
SA	SHIFT SOLENOID VALVE A	AX	AIR DRAIN

N Position

The PCM controls the shift solenoid valves. The conditions of the shift solenoid valves and positions of the shift valves are as follows:

- Shift solenoid valve A: OFF, and shift valve A stays on the right side
- Shift solenoid valve B: ON, and shift valve B moves to the left side
- Shift solenoid valve C: ON, and shift valve C moves to the left side
- Shift solenoid valve D: OFF, and shift valve D stays on the left side
- Shift solenoid valve E: OFF, and shift valve E stays on the left side

Line pressure (1) flows to the shift solenoid valves and A/T clutch pressure control solenoid valve A. Under this condition, hydraulic pressure is not applied to the clutches.

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

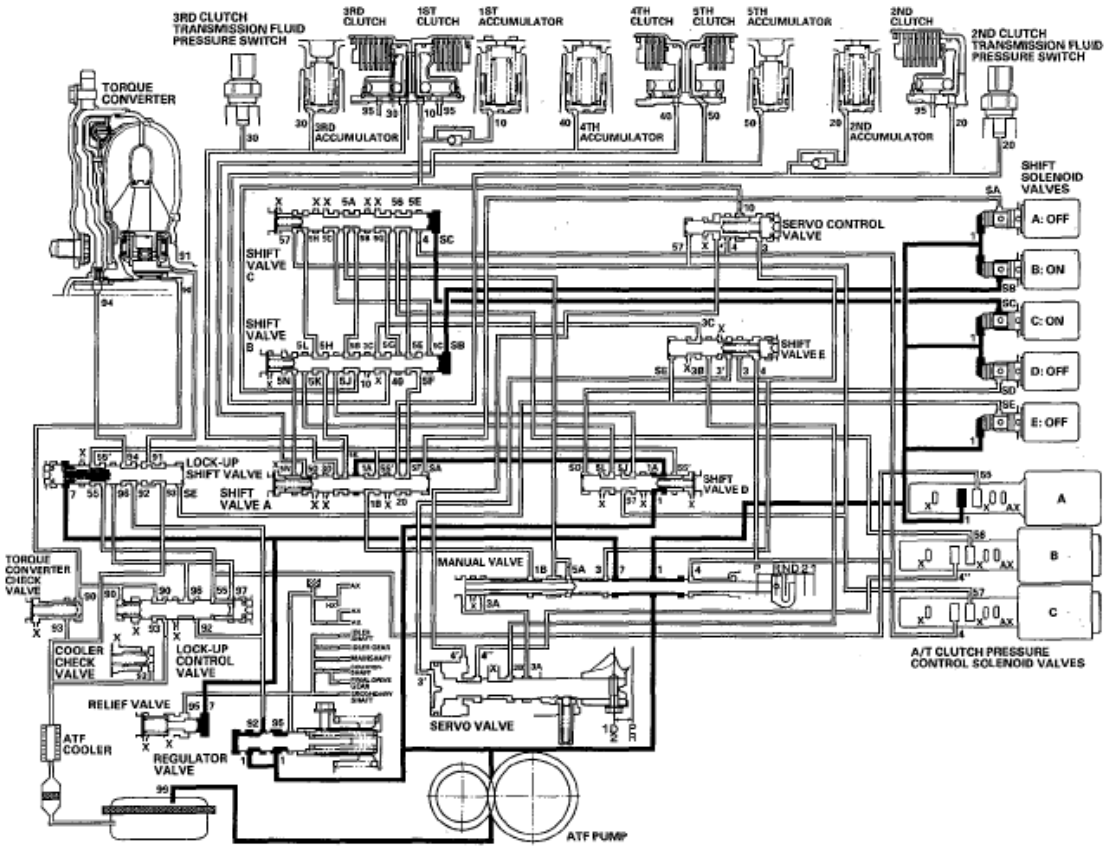


Fig. 41: Automatic Transmission Fluid Flow Diagram - N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: 1st gear shifting from N position

Shift solenoid valves remain the same as in the N position when shifting to the D position from N. The manual valve is moved to the D position, and switches the port of line pressure (4) leading to A/T clutch pressure control solenoid valve C. Hydraulic pressure to the 1st clutch from A/T clutch pressure control solenoid valve A is created as shift solenoid valve A is OFF, B and C stays ON. A/T clutch pressure control solenoid valve A pressure (55) changes to 1st clutch pressure (10) at shift valve B, and flows to the 1st clutch. The 1st clutch is engaged gently when shifting to the D position from N.

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

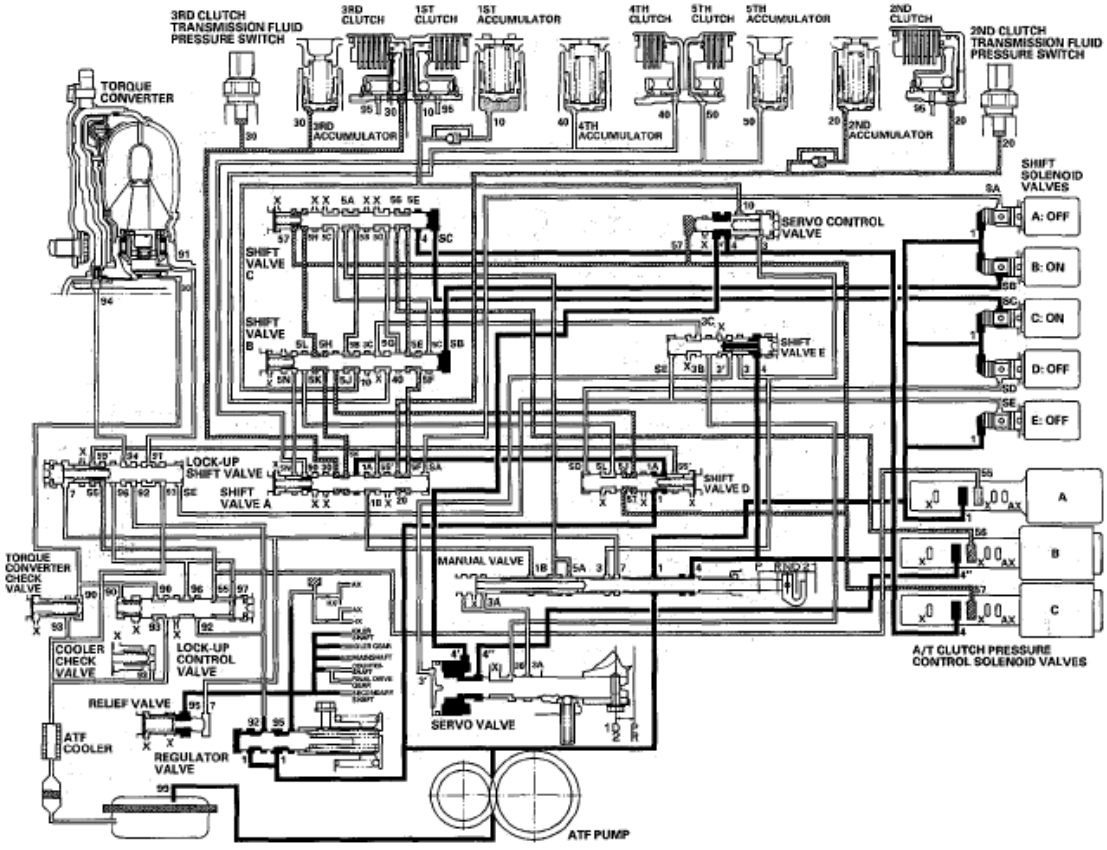


Fig. 42: Automatic Transmission Fluid Flow Diagram - N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Driving in 1st gear

The PCM turns shift solenoid valve A ON, and keeps B and C ON, and D and E OFF. Shift solenoid valve A pressure (SA) is applied to the right side of shift valve A. Shift valve A is moved to the left side to uncover the line pressure port leading to the 1st clutch, and to cover the A/T clutch pressure control solenoid valve pressure port.

Fluid flows to the 1st clutch by way of:

Line pressure (1) --> Shift valve D-Line pressure (1A) --> Shift valve A-Line pressure (1B) --> Manual valve-Line pressure (5A) --> Shift valve C-Line pressure (5B) --> Shift valve B-1st clutch pressure (10) --> 1st clutch

1st clutch pressure (10) is applied to the 1st clutch, and the 1st clutch is engaged securely.

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

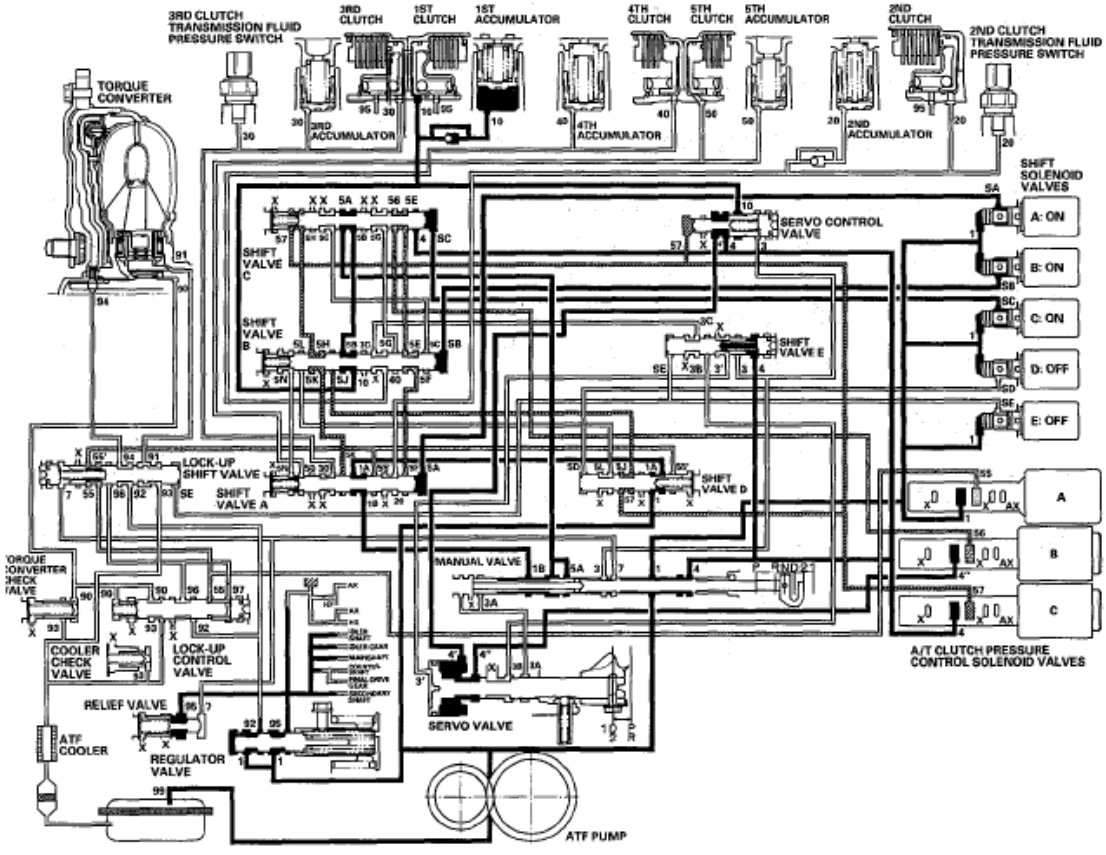


Fig. 43: Automatic Transmission Fluid Flow Diagram - (D Position) 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Shifting between 1st gear and 2nd gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve A OFF, and keeps Band CON, and D and E OFF. Shift solenoid valve A pressure (SA) in the right side of shift valve A is released. Shift valve A is moved to the right side to uncover the A/T clutch pressure control solenoid valve pressure port leading to the 1st and 2nd clutches. The PCM controls the A/T clutch pressure control solenoid valves to regulate hydraulic pressure. A/T clutch pressure control solenoid valve A pressure (55) changes to 1st clutch pressure (10) at shift valve B, and A/T clutch pressure control solenoid valve B pressure (56) changes to 2nd clutch pressure (20) at shift valve A. The 1st and 2nd clutches are engaged gently.

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

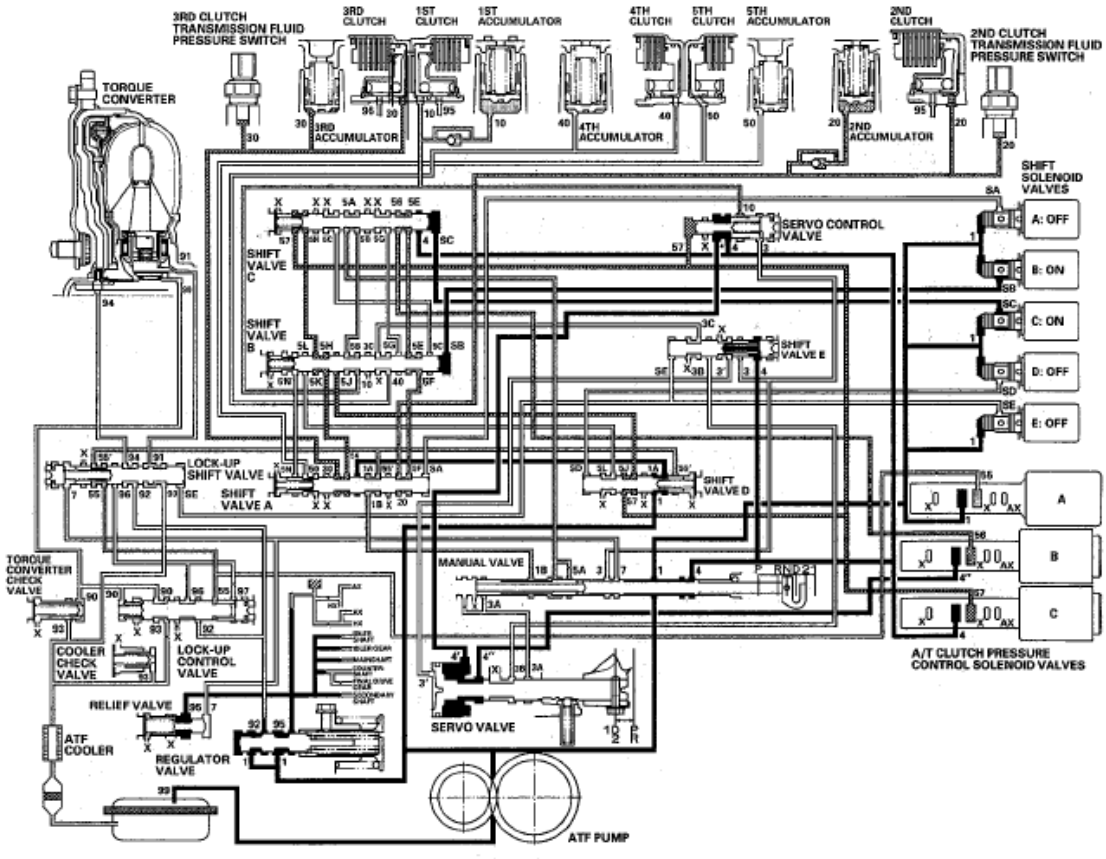


Fig. 44: Automatic Transmission Fluid Flow Diagram - (D Position) 1st Gear And 2nd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Driving in 2nd gear

The PCM turns shift solenoid valves C OFF, D ON, and keeps A and E OFF, and B ON. Shift solenoid valve C pressure (SC) in the right side of shift valve C is released. Shift valve C is moved to the right side to switch the ports. This movement covers the A/T clutch pressure control solenoid valve pressure ports to stop at shift valves C and A, and uncover the line pressure port leading to the 2nd clutch.

Fluid flows to 2nd clutch by way of:

Line pressure (1) --> Manual valve-Line pressure (4) --> Shift valve C-Line pressure (5E) --> Shift valve B-Line pressure (5F) --> Shift valve A-2nd clutch pressure (20) --> 2nd clutch

2nd clutch pressure (20) is applied to the 2nd clutch, and the 2nd clutch is engaged securely.

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

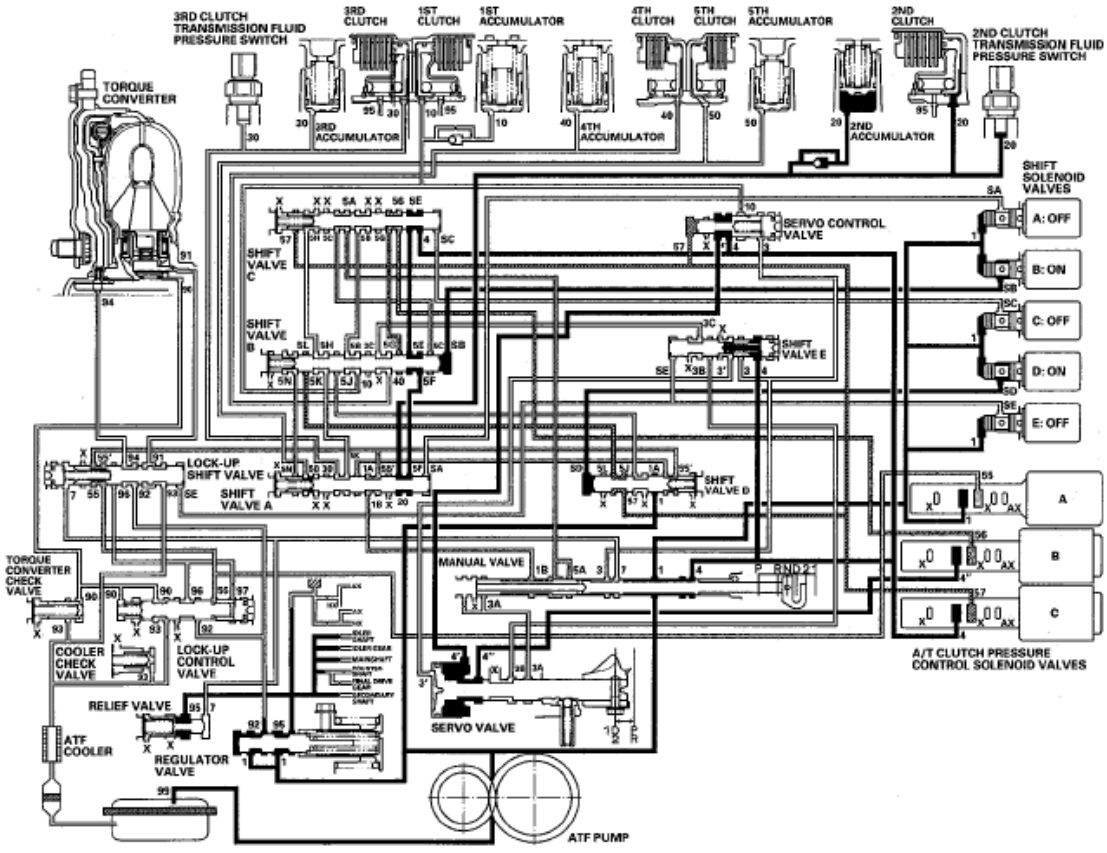


Fig. 45: Automatic Transmission Fluid Flow Diagram - (D Position) 2nd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Shifting between 2nd gear and 3rd gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valves C ON, and keeps A and E OFF, and B and D ON. Shift solenoid valve C pressure (SO is applied to the right side of shift valve C. Shift valve C is moved to the left side to uncover the A/T clutch pressure control solenoid valve pressure ports leading to the 2nd and 3rd clutches. The PCM controls the A/T clutch pressure control solenoid valves to regulate hydraulic pressure. A/T clutch pressure control solenoid valve B pressure (56) changes to 2nd clutch pressure (20) at shift valve A, and A/T clutch pressure control solenoid valve C pressure (57) changes to 3rd clutch pressure (30) at shift valve A. The 2nd and 3rd clutches are engaged gently.

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

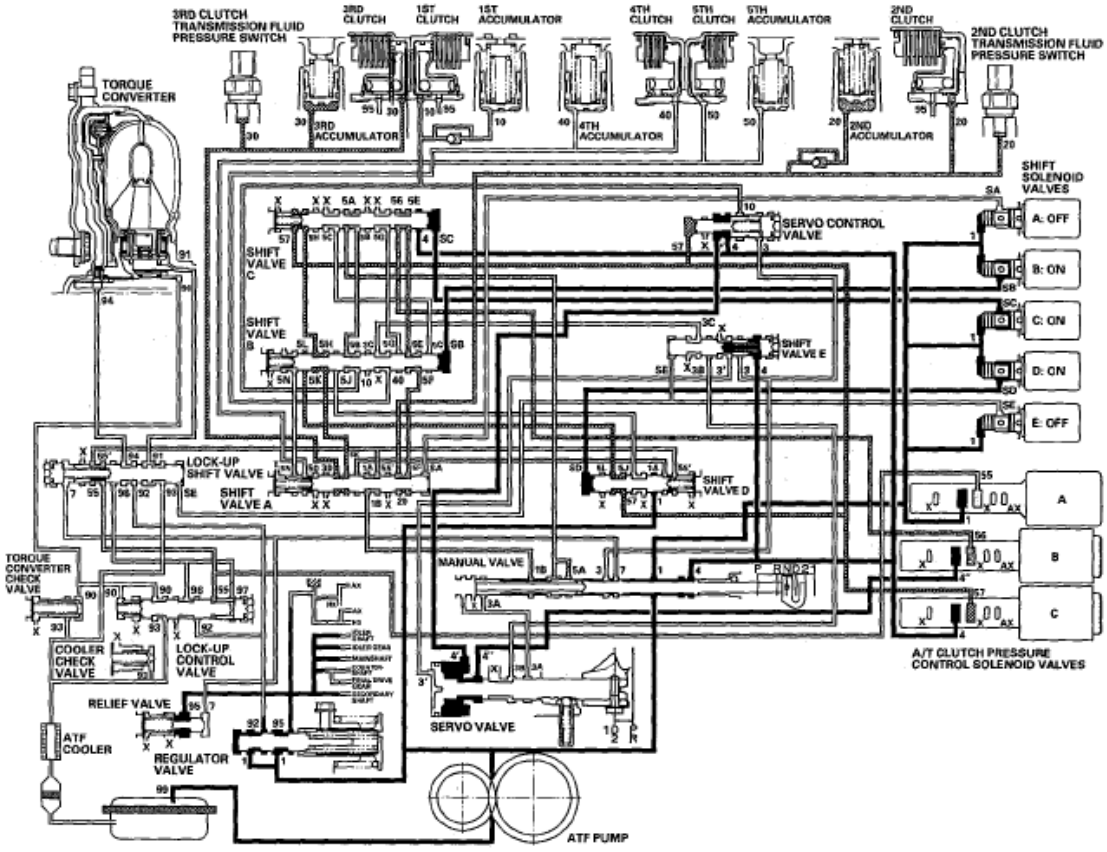


Fig. 46: Automatic Transmission Fluid Flow Diagram - (D Position) 2nd Gear And 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Driving in 3rd gear

The PCM turns shift solenoid valves B and D OFF, and keeps A and E OFF, and C ON. Shift solenoid valve B pressure (SB) in the right side of shift valve B is released, and shift valve B is moved to the right side. Shift solenoid valve D pressure (SD) in the left side of shift valve D is released, and shift valve D is moved to the left side. This valve movement switches the A/T clutch pressure control solenoid valve C pressure port leading to the 3rd clutch. A/T clutch pressure control solenoid valve C pressure (57) changes to (5J) at shift solenoid valve D and to (5K) at shift valve B, and becomes 3rd clutch pressure (30) at shift valve A. 3rd clutch pressure (30) is applied to the 3rd clutch, and the 3rd clutch is engaged securely.

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

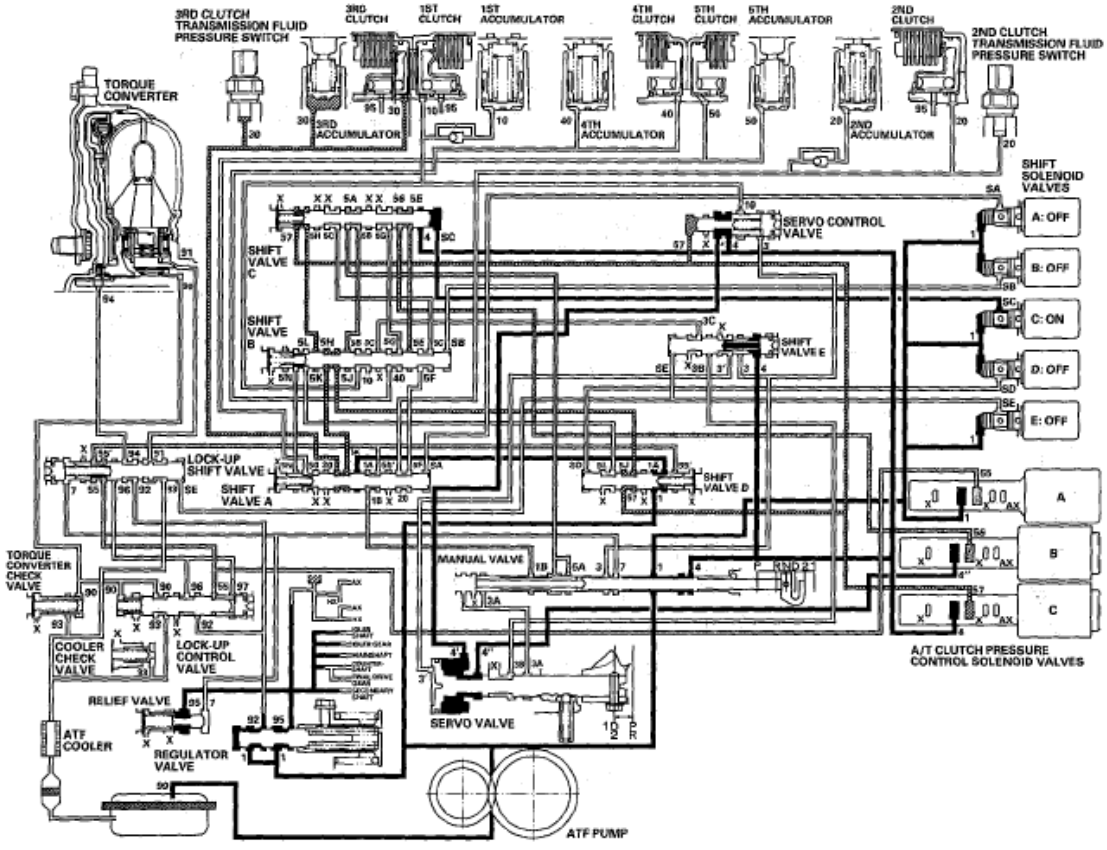


Fig. 47: Automatic Transmission Fluid Flow Diagram - (D Position) 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Shifting between 3rd gear and 4th gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valves C OFF, and keeps A, B, D, and E OFF. Shift solenoid valve C pressure (SC) in the right side of shift valve C is released. Shift valve C is moved to the right side to uncover the A/T clutch pressure control solenoid valve B and C pressure ports leading to the 3rd and 4th clutches. The PCM controls the A/T clutch pressure control solenoid valves to regulate hydraulic pressure. A/T clutch pressure control solenoid valve C pressure (57) changes to 3rd clutch pressure (30) at shift valve A, and A/T clutch pressure control solenoid valve B pressure (56) changes to 4th clutch pressure (40) at shift valve B. The 3rd and 4th clutches are engaged gently.

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

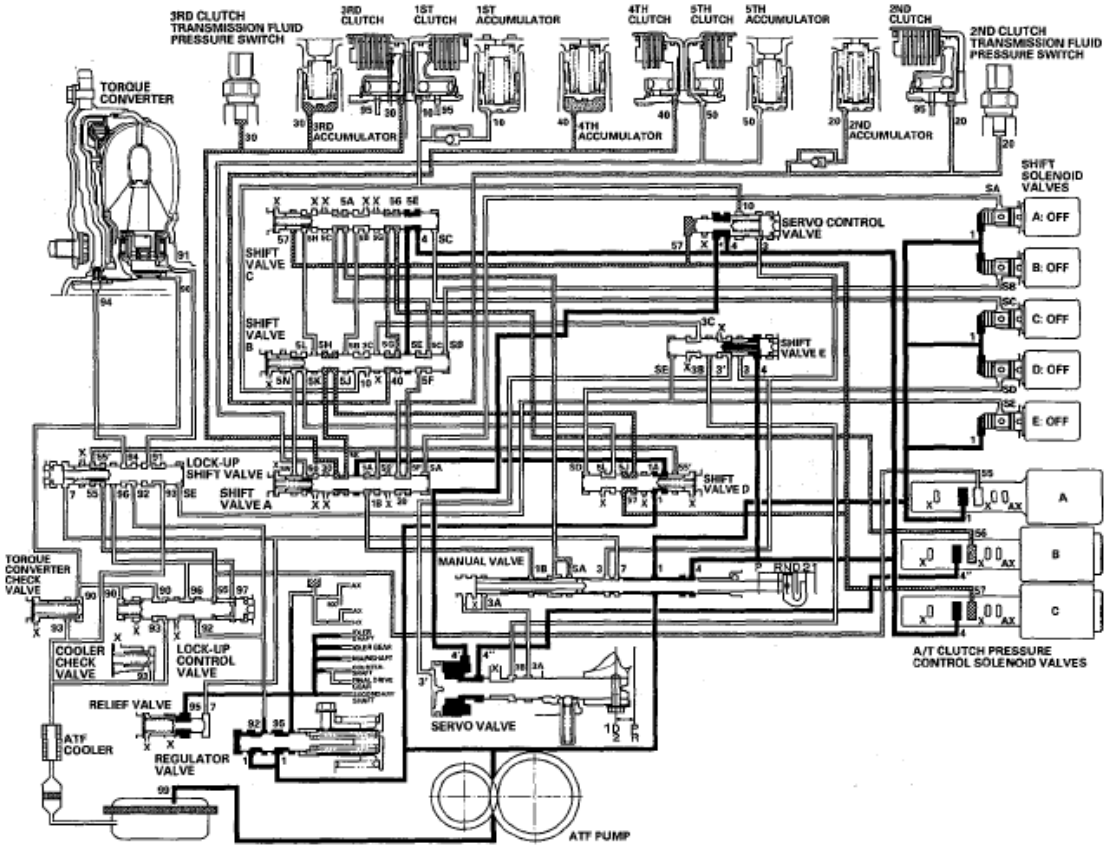


Fig. 48: Automatic Transmission Fluid Flow Diagram - (D Position) 3rd Gear And 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Driving in 4th gear

The PCM turns shift solenoid valve A ON, and keeps B, C, D, and E OFF. Shift solenoid valve A pressure (SA) is applied to the right side of shift valve A. Shift valve A is moved to the left side to cover the A/T clutch pressure control solenoid valve A and C pressure ports leading to the 2nd and 3rd clutches.

A/T clutch pressure control solenoid valve B pressure (56) changes to (5G) at shift valve C, and becomes 4th clutch pressure (40) at shift valve B. 4th clutch pressure (40) is held to high by A/T clutch pressure control solenoid valve B, and the 4th clutch is engaged securely.

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

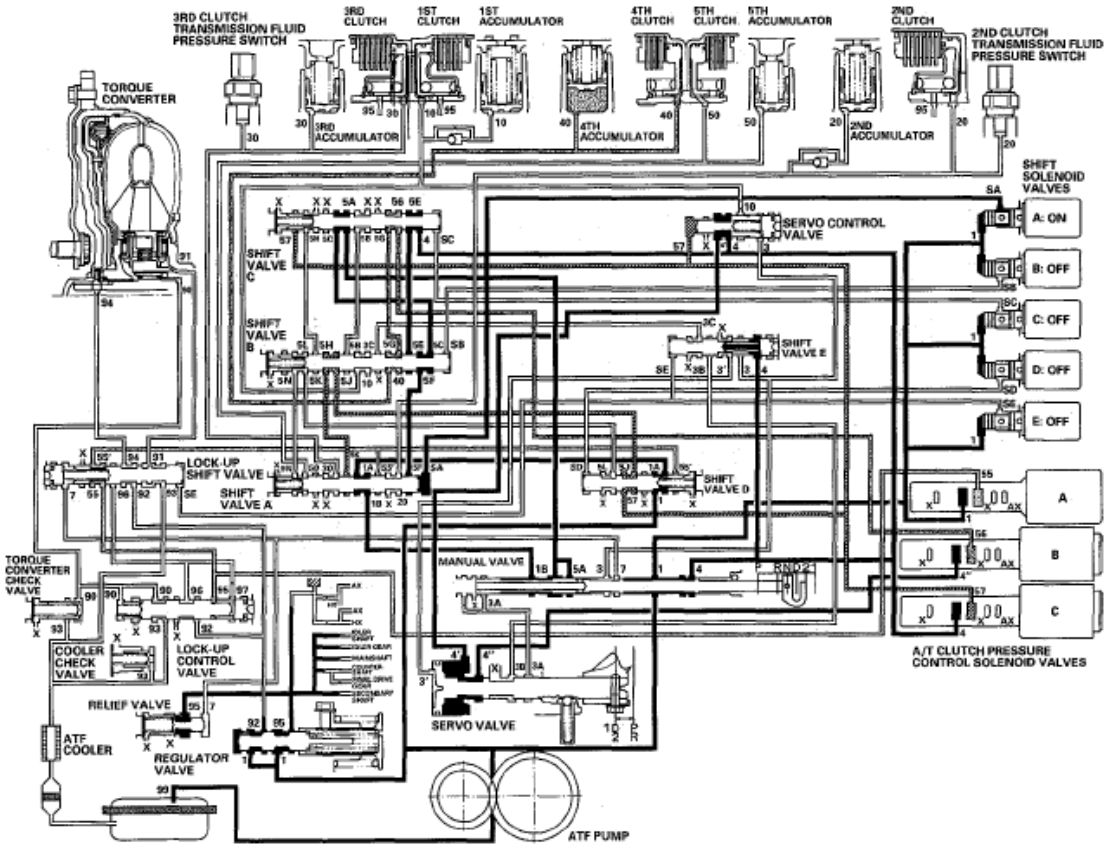


Fig. 49: Automatic Transmission Fluid Flow Diagram - (D Position) 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Shifting between 4th gear and 5th gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve D ON, and keeps A ON, and B, C, and E OFF. Shift solenoid valve D pressure (SD) is applied to the left side of shift valve D. Shift valve D is moved to the right side to uncover the A/T clutch pressure control solenoid valve C pressure port leading to the 5th clutch. A/T clutch pressure control solenoid valve B pressure (56) changes to 4th clutch pressure (40) at shift valve B. A/T clutch pressure control solenoid valve C pressure (57) changes to (5L) at shift valve D and to (5N) at shift valve B, and becomes 5th clutch pressure (50) at shift valve A. The 4th and 5th clutches are engaged gently.

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

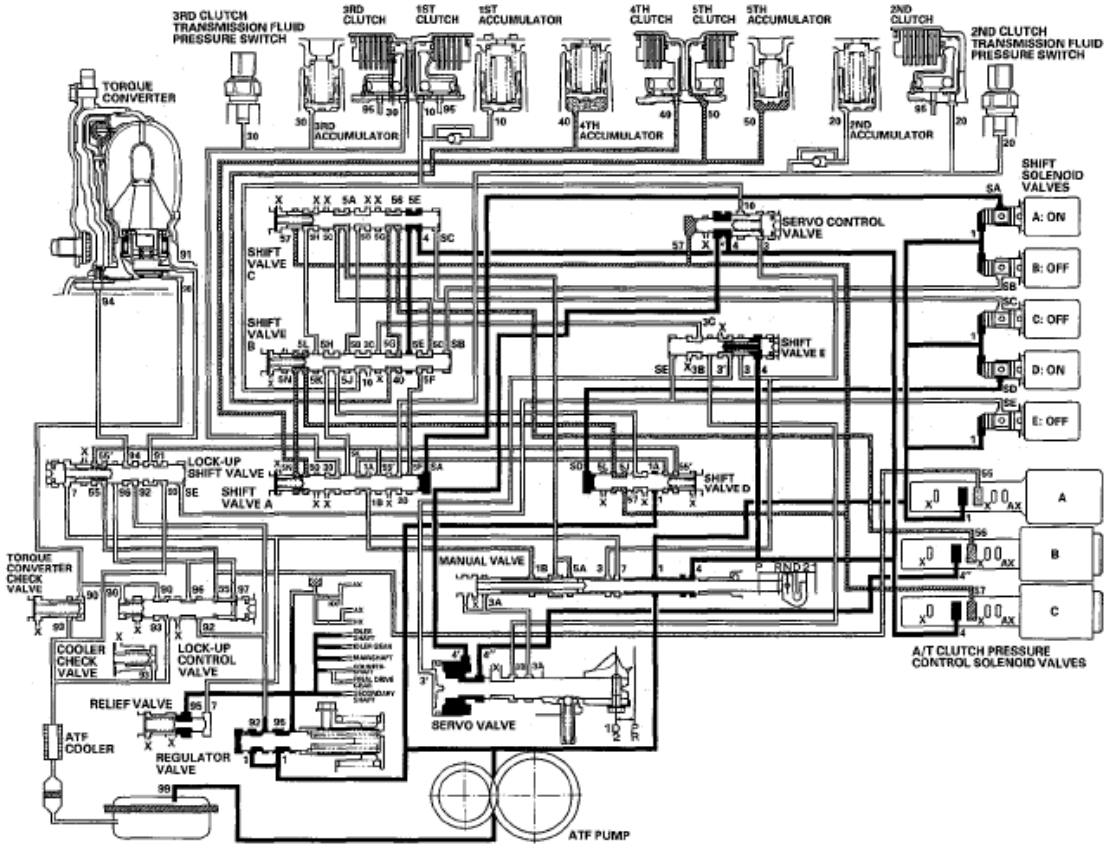


Fig. 50: Automatic Transmission Fluid Flow Diagram - (D Position) 4th Gear And 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Driving in 5th gear

The PCM turns shift solenoid valve C ON, and keeps A and D ON, and B and E turned OFF. Shift solenoid valve C pressure (SC) is applied to the right side of shift valve C. Shift valve C is moved to the left side to switch the A/T clutch pressure control solenoid valve B pressure port leading to the 4th clutch.

5th clutch pressure (50) is held high by A/T clutch pressure control solenoid valve C, and the 5th clutch is engaged securely.

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

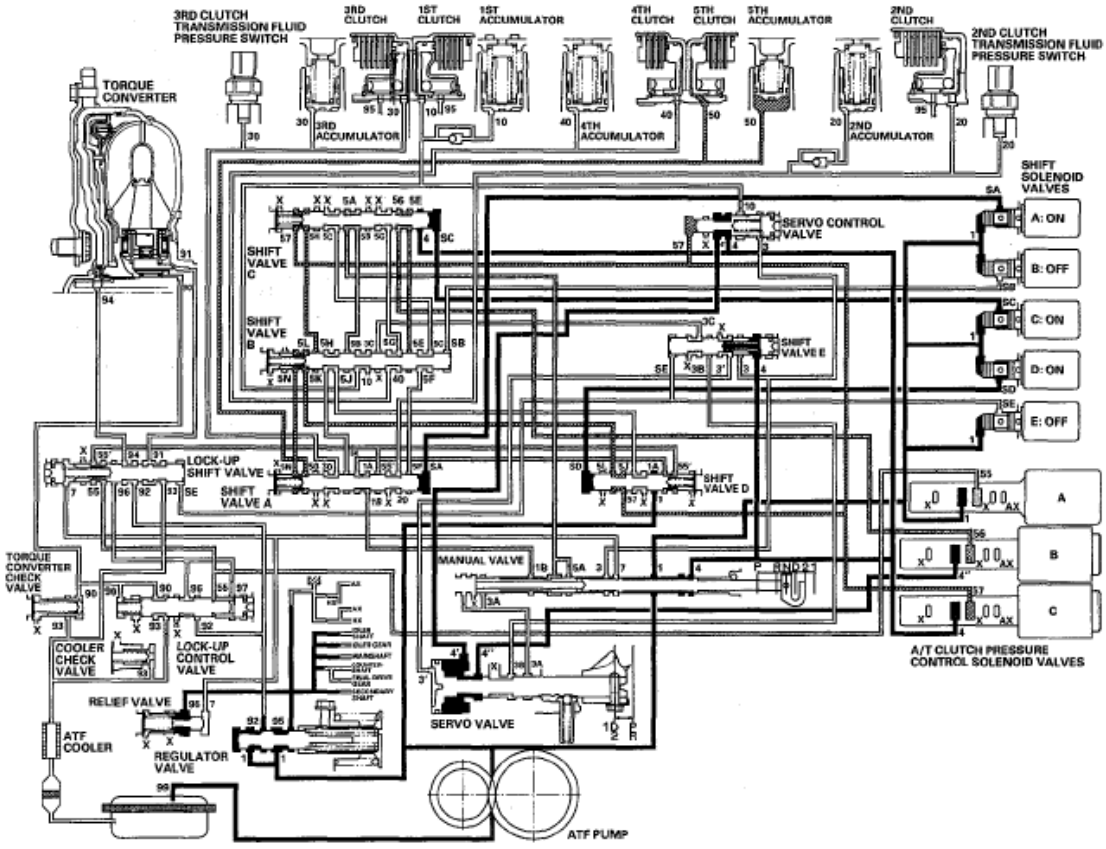


Fig. 51: Automatic Transmission Fluid Flow Diagram - (D Position) 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2 Position

The PCM controls the shift solenoid valves. The conditions of the shift solenoid valves and positions of the shift valves are as follows:

- Shift solenoid valve A: OFF, and shift valve A stays on the right side
- Shift solenoid valve B: ON, and shift valve B moves to the left side
- Shift solenoid valve C: OFF, and shift valve C stays on the right side
- Shift solenoid valve D: ON, and shift valve D moves to the right side
- Shift solenoid valve E: OFF, and shift valve E stays on the left side

Line pressured) changes to line pressure (4) at the manual valve, and flows to shift valve C. Line pressure (4) flows to shift valve A via shift valve B, and becomes the 2nd clutch pressure (20). 2nd clutch pressure (20) is applied to the 2nd clutch, and the 2nd clutch is engaged.

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

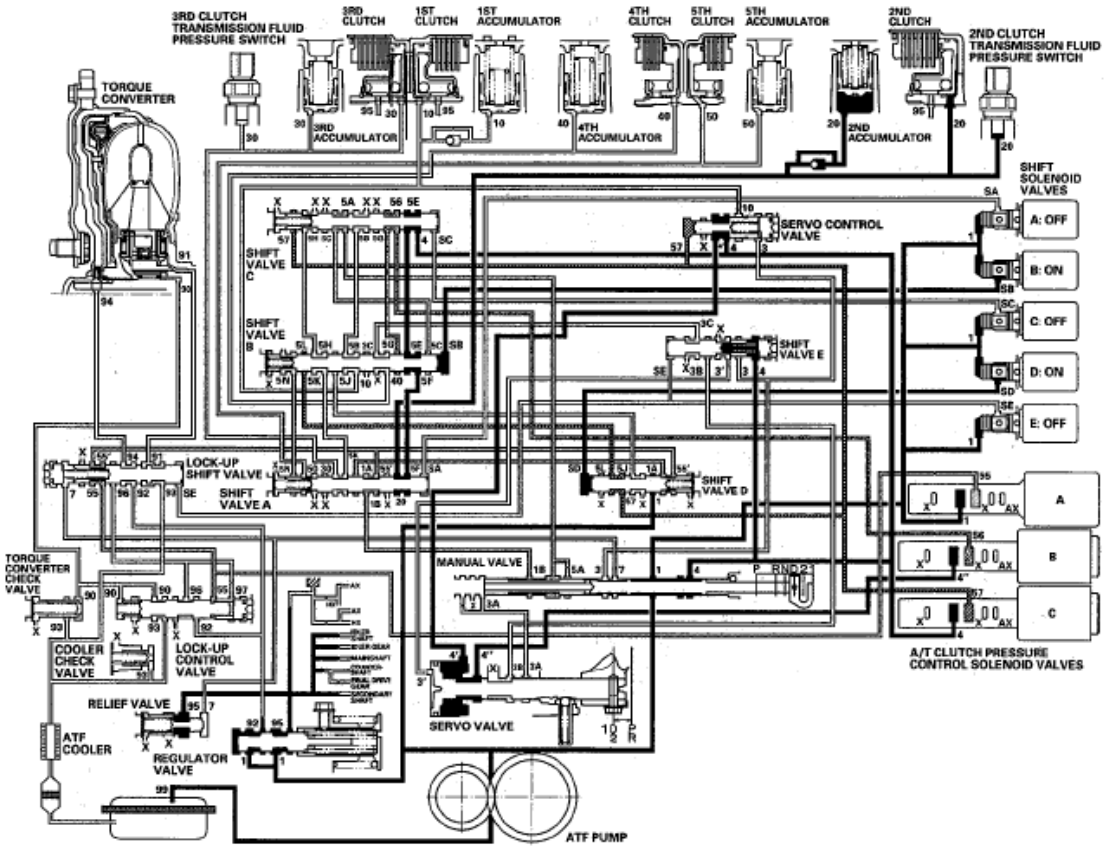


Fig. 52: Automatic Transmission Fluid Flow Diagram - (2 Position)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1 Position

The PCM controls the shift solenoid valves. The conditions of the shift solenoid valves and positions of the shift valves are as follows:

- Shift solenoid valve A: ON, and shift valve A moves to the left side
- Shift solenoid valve B: ON, and shift valve B moves to the left side
- Shift solenoid valve C: ON, and shift valve C moves to the left side
- Shift solenoid valve D: OFF, and shift valve D stays on the left side
- Shift solenoid valve E: OFF, and shift valve E stays on the left side

Line pressure (1) becomes 1st clutch pressure (10) at shift valve B.

Fluid flows to 1st clutch by way of:

Line Pressure (1) --> Shift Valve D-Line Pressure (1A) --> Shift Valve A-Line Pressure (1B) --> Manual Valve-Line Pressure (5A) --> Shift Valve C-Line Pressure (5B) --> Shift Valve B-1st Clutch Pressure (10) --> 1st Clutch

1st clutch pressure (10) is applied to the 1st clutch, and the 1st clutch is engaged.

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

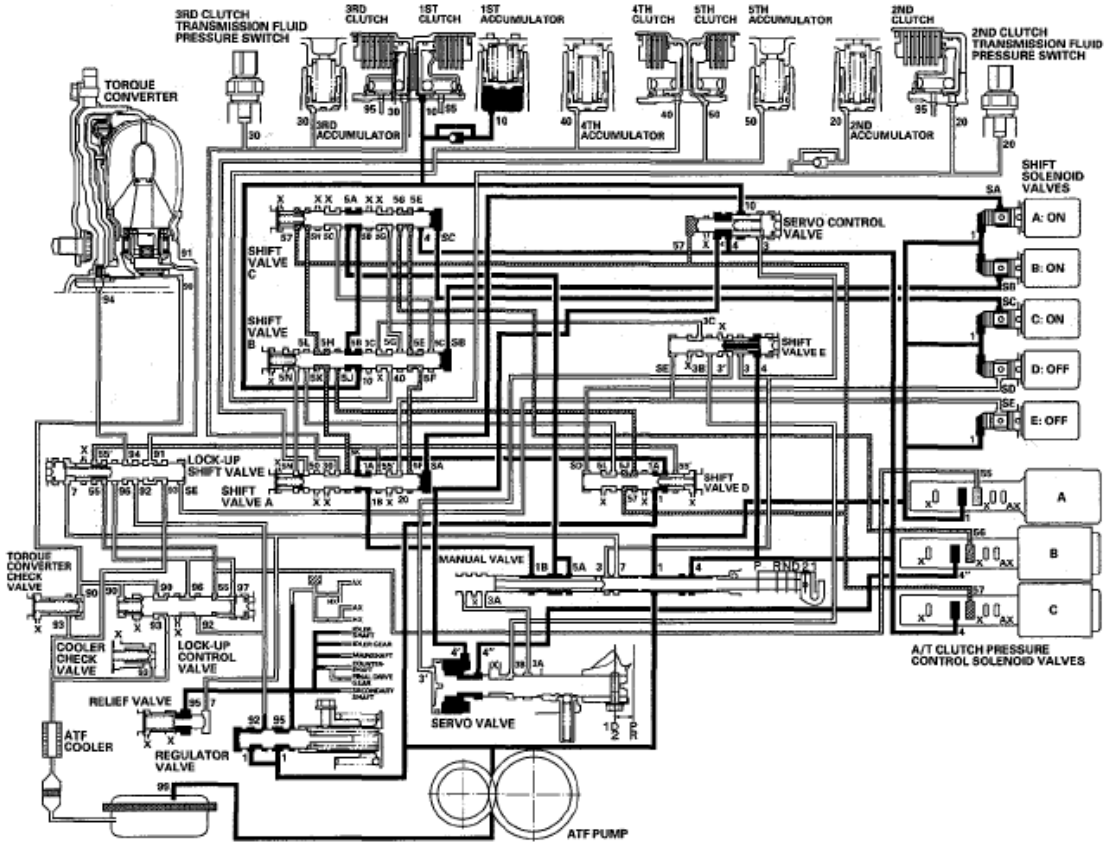


Fig. 53: Automatic Transmission Fluid Flow Diagram - (1 Position)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

R Position: Shifting to R position from P or N position

When shifting in the R position, the PCM turns shift solenoid valves B and E ON, and A, C, and D OFF. Shift solenoid valve B pressure (SB) is applied to the right side of shift valve B, and shift valve B is moved to left side. Shift solenoid valve E pressure (SE) is applied to the left side of shift valve E, and shift valve E is moved to the right side. Line pressured) changes to (3) at the manual valve, and flows to the servo valve via shift valve E. The servo valve is moved to the reverse range position. Movement of shift valves B and E, and servo valve creates 4th clutch pressure line between the 4th clutch and A/T clutch pressure control solenoid valve A. 4th clutch pressure (40) is applied to the 4th clutch, and the 4th clutch is engaged gently.

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

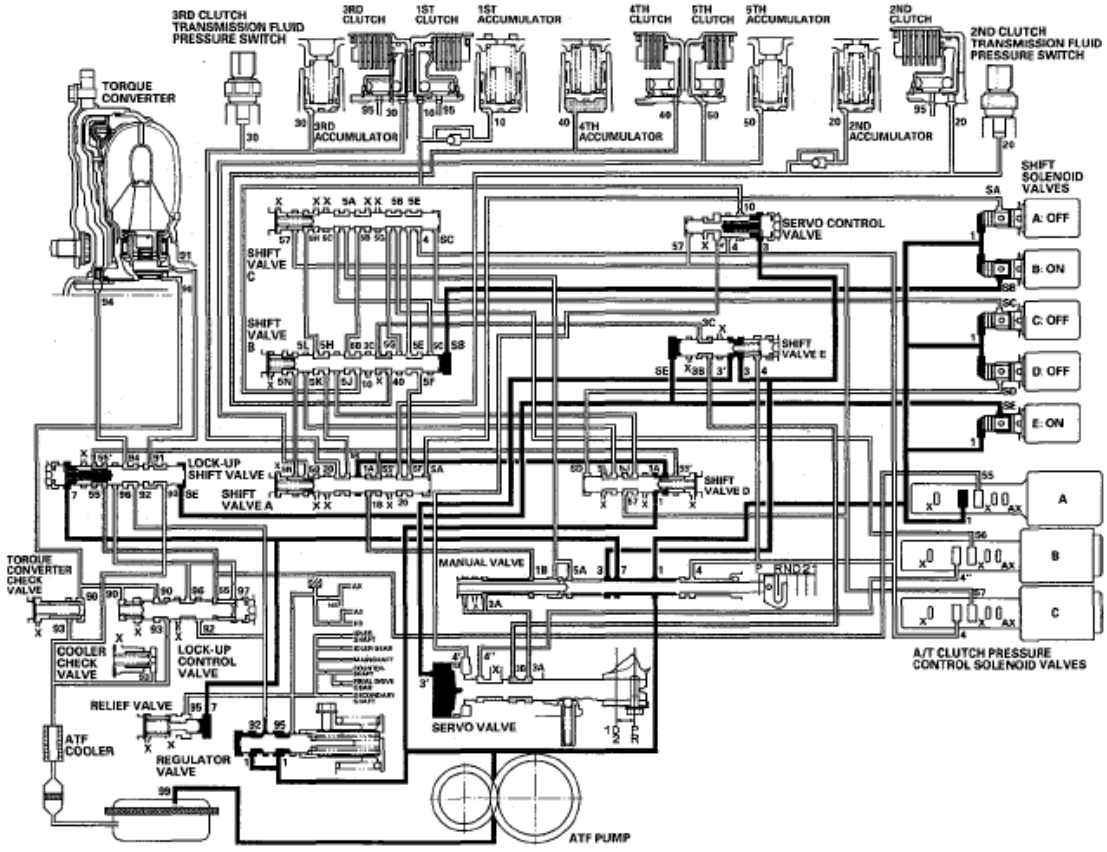


Fig. 54: Automatic Transmission Fluid Flow Diagram - (R Position)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

R Position: Driving in reverse gear

After starting off in reverse gear, the PCM turns shift solenoid valve A ON, and keeps B and E ON, and C and D OFF. Shift solenoid valve A pressure (SA) is applied to the right side of shift valve A to cover the A/T clutch pressure control solenoid valve A pressure port, and to uncover the line pressure port leading to the 4th clutch creating full line pressure. The 4th clutch is engaged securely with line pressure.

Reverse Inhibitor Control

While the vehicle is moving forward, the PCM keeps shift solenoid valve E remaining OFF. Shift valve E covers the port of line pressure (3') leading to the servo valve reverse position. The servo valve cannot be shifted to reverse position, and hydraulic pressure is not applied to the 4th clutch from servo valve for reverse; as a result, power is not transmitted to the reverse direction.

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

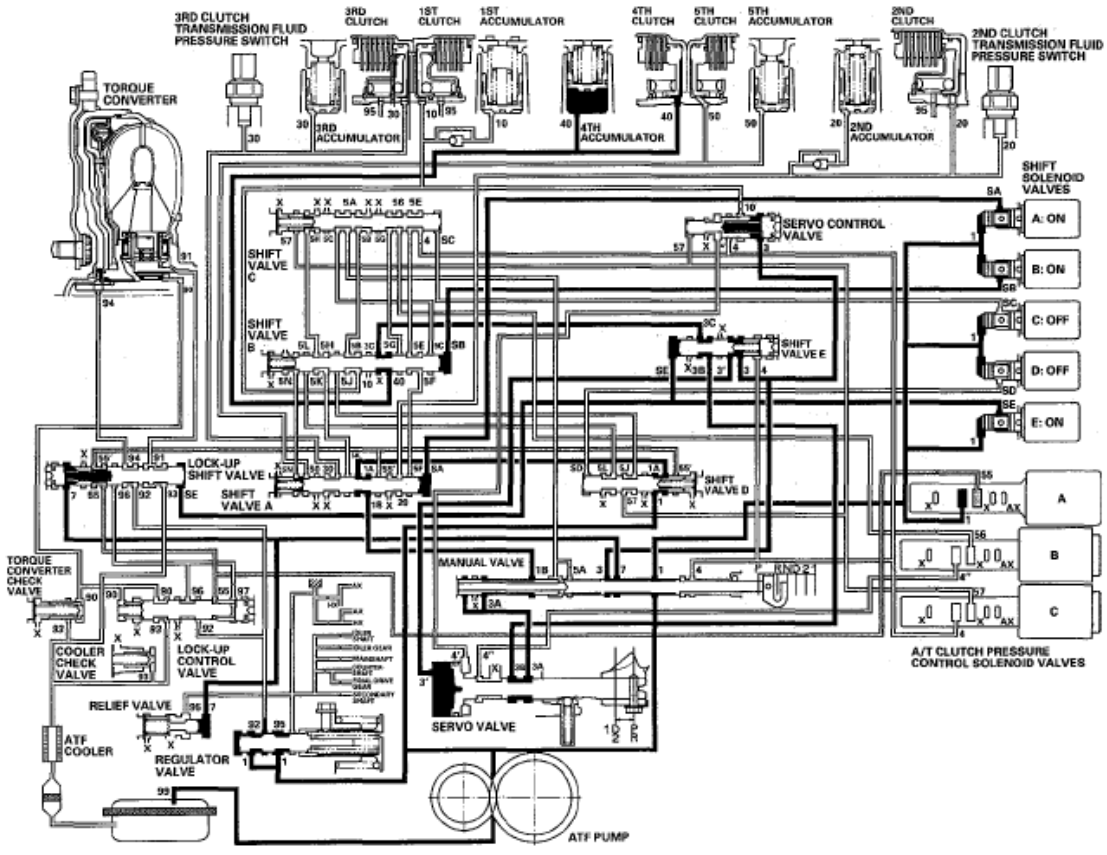


Fig. 55: Automatic Transmission Fluid Flow Diagram - Reverse Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

P Position

Shift solenoid valves Band E are turned ON, and A, C, and Dare turned OFF by the PCM. Line pressure (1) flows to the shift solenoid valves and A/T clutch pressure control solenoid valve A. Line pressure (3) changes to (3') at shift valve E, and flows to the servo valve. The servo valve is moved to the reverse/park position. Hydraulic pressure is not applied to the clutches.

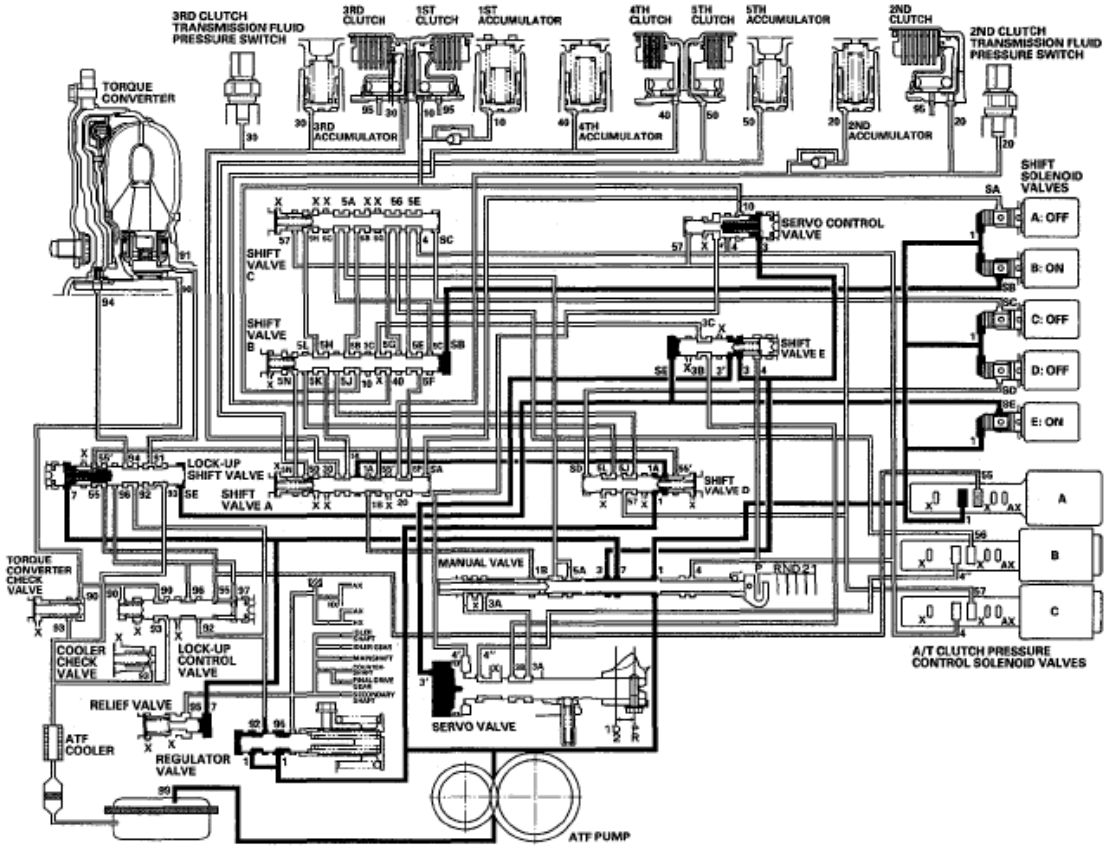


Fig. 56: Automatic Transmission Fluid Flow Diagram - P Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LOCK-UP SYSTEM

The lock-up mechanism of the torque converter clutch operates in the D position (2nd, 3rd, 4th, and 5th), and in the D position D3 driving mode (2nd and 3rd). The pressurized fluid is drained from the back of the torque converter through a fluid passage, causing the torque converter clutch piston to be held against the torque converter cover. As this takes place, the mainshaft rotates at the same speed as the engine crankshaft. Together with the hydraulic control, the PCM optimizes the timing and amount of the lock-up mechanism. When shift solenoid valve E is turned on by the PCM, shift solenoid valve E pressure switches the lock-Up shift valve lock-up on and off. A/T clutch pressure control solenoid valve A and the lock-up control valve control the amount of the lock-up.

Torque Converter Clutch Lock-up ON (Engaging Torque Converter Clutch)

Fluid in the chamber between the torque converter cover and the torque converter clutch piston is drained off, and fluid entering from the chamber between the pump and stator exerts pressure through the torque converter clutch piston against the torque converter cover. The torque converter clutch piston engages with the torque converter cover; the torque converter clutch lock-up is ON, and the mainshaft rotates at the same speed as the engine.

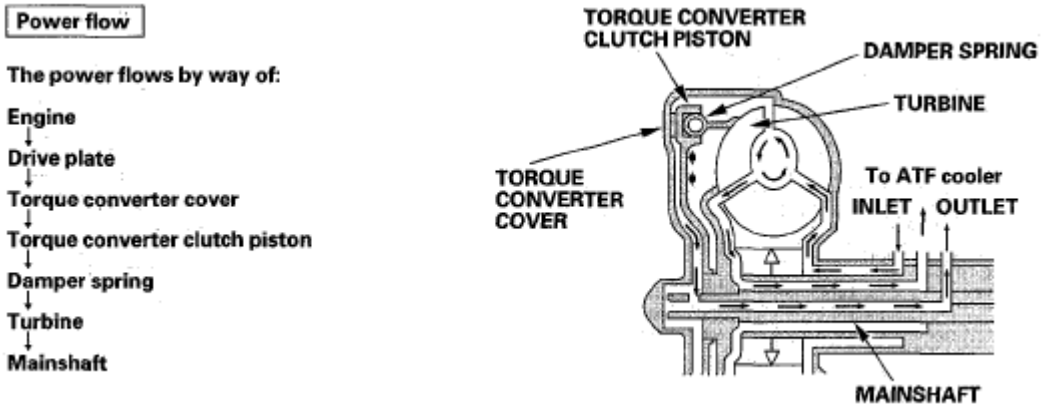


Fig. 57: Torque Converter Clutch Lock-Up On (Engaging Torque Converter Clutch)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Torque Converter Clutch Lock-up OFF (Disengaging Torque Converter Clutch)

Fluid entered from the chamber between the torque converter cover and the torque converter clutch piston passes through the torque converter and goes out through the chambers between the turbine and the stator, and between the pump and the stator. As a result, the torque converter clutch piston moves away from the torque converter cover, and the torque converter lock-up clutch is released; torque converter clutch lock-up is OFF.

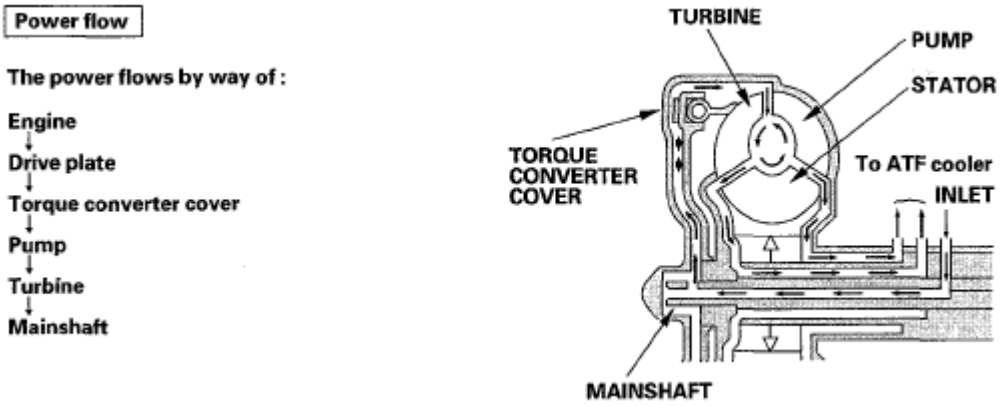


Fig. 58: Torque Converter Clutch Lock-Up Off (Disengaging Torque Converter Clutch)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

No Lock-up

Shift solenoid valve E is turned OFF by the PCM, and shift solenoid valve E pressure (SE) is not applied to the lock-up shift valve. The lock-up shift valve stays to the right to uncover the torque converter pressure ports leading to the left: side of the torque converter and releasing pressure from the right side of the torque converter. Torque converter pressure (92) changes to (94) at the lock-up shift valve, and enters into the left side of the torque converter to disengage the torque converter clutch. This keeps the torque converter clutch piston keeps away from the torque converter cover and the torque converter clutch lock-up is OFF.

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

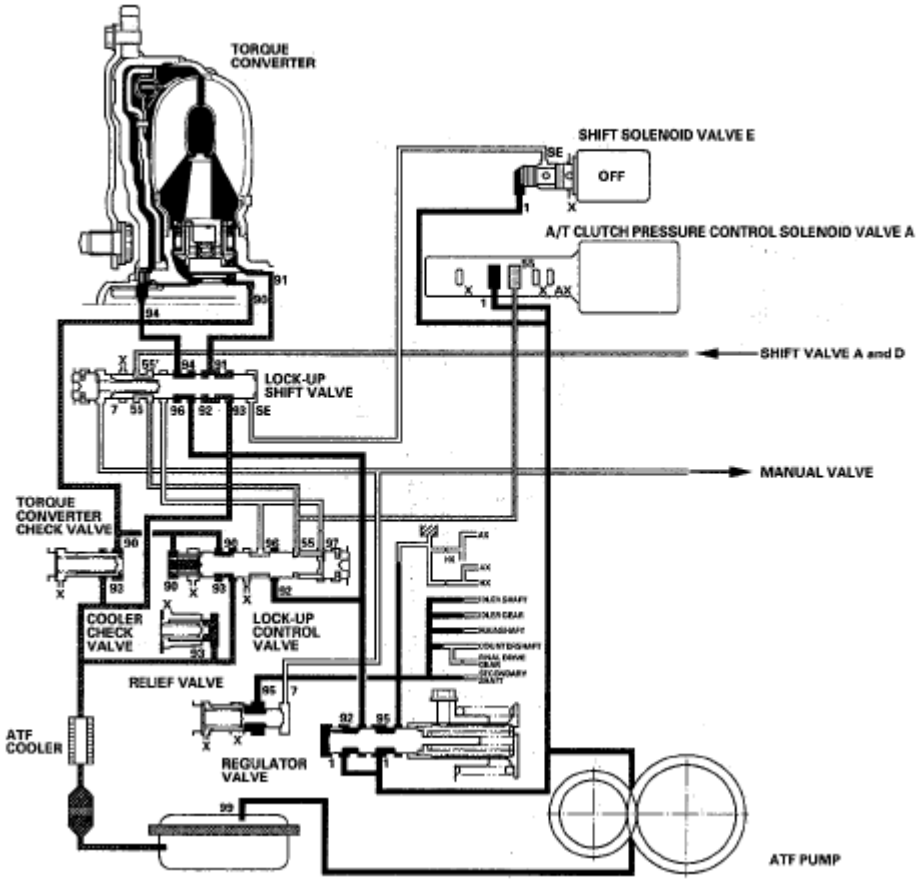


Fig. 59: Hydraulic Circuit Diagram - No Lock-Up
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Partial Lock-up

As the speed of the vehicle reaches the programmed value, shift solenoid valve E is turned ON by the PCM, and shift solenoid valve E pressure (SE) is applied to the right side of the lock-up shift valve. The lock-up shift valve is moved to the left side to switch the torque converter pressure (91) port, which goes to the right side of the torque converter, and the port of torque converter pressure (94) is released from the left side of the torque converter. Torque converter pressure (91) flows to the right side of the torque converter to engage the torque converter clutch. The PCM also controls A/T clutch pressure control solenoid valve A, and A/T clutch pressure control solenoid valve A pressure (55) is applied to the lock-up shift valve and lock-up control valve. The position of the lock-up control valve depends on A/T clutch pressure control solenoid valve A pressure (55) and torque converter pressure released from the torque converter. The lock-up control valve controls the amount of torque converter clutch lock-up until fluid between the clutch piston and torque converter cover is fully released; the torque converter clutch is in partial lock-up.

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

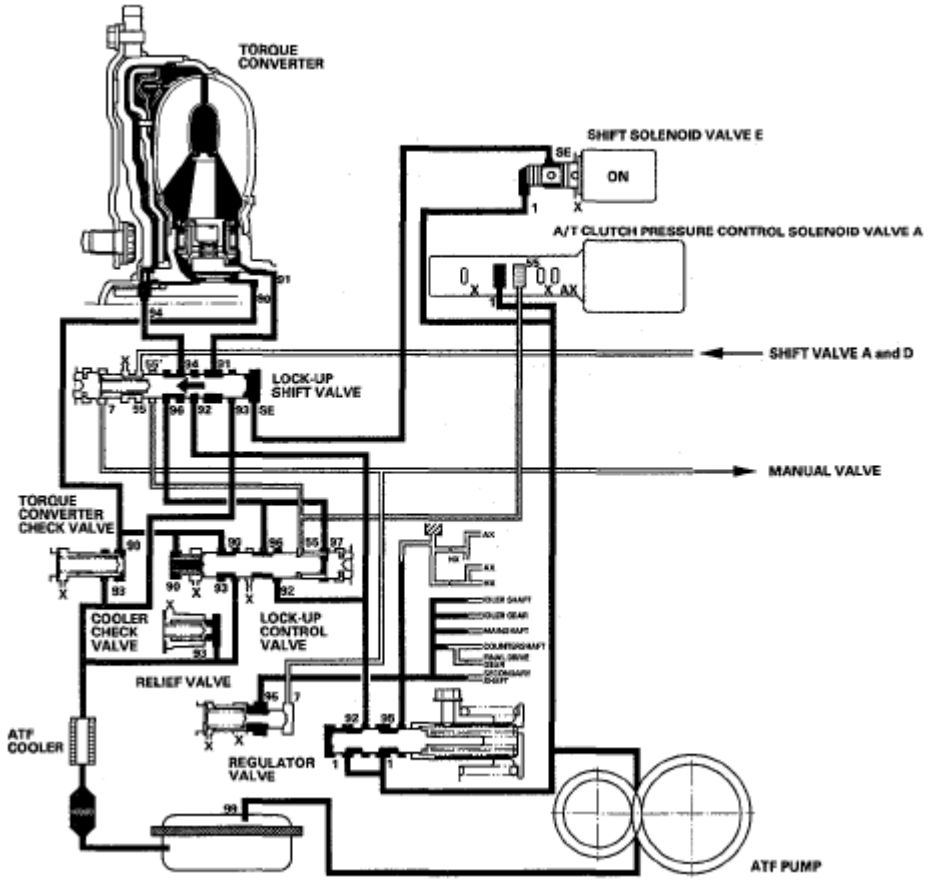


Fig. 60: Hydraulic Circuit Diagram - Partial Lock-Up
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Full Lock-up

When the vehicle speed increases, the PCM sends a signal to A/T clutch pressure control solenoid valve A to increase A/T clutch pressure control solenoid valve A pressure (55), and the lock-up control valve is moved to the left side by increased pressure. Then converter pressure (94) from the left side of the torque converter is completely released at the lock-up control valve, and torque converter pressure (91) engages the torque converter clutch securely; the torque converter clutch is in full lock-up.

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

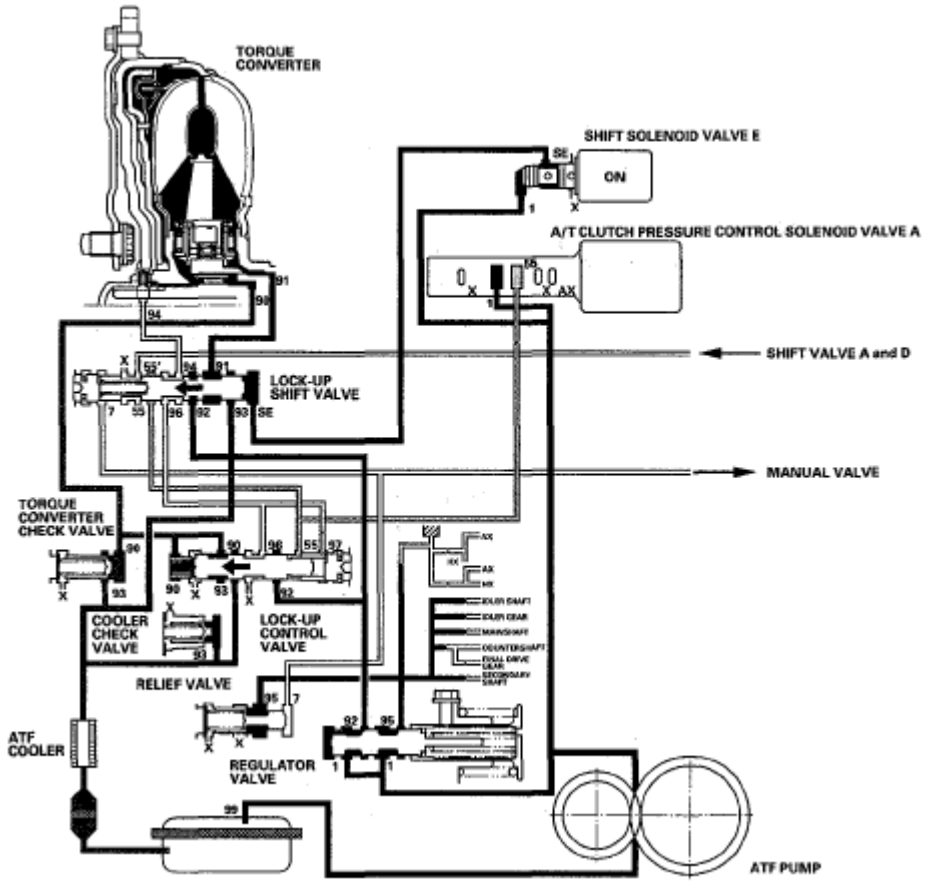


Fig. 61: Hydraulic Circuit Diagram - Full Lock-Up
Courtesy of AMERICAN HONDA MOTOR CO., INC.

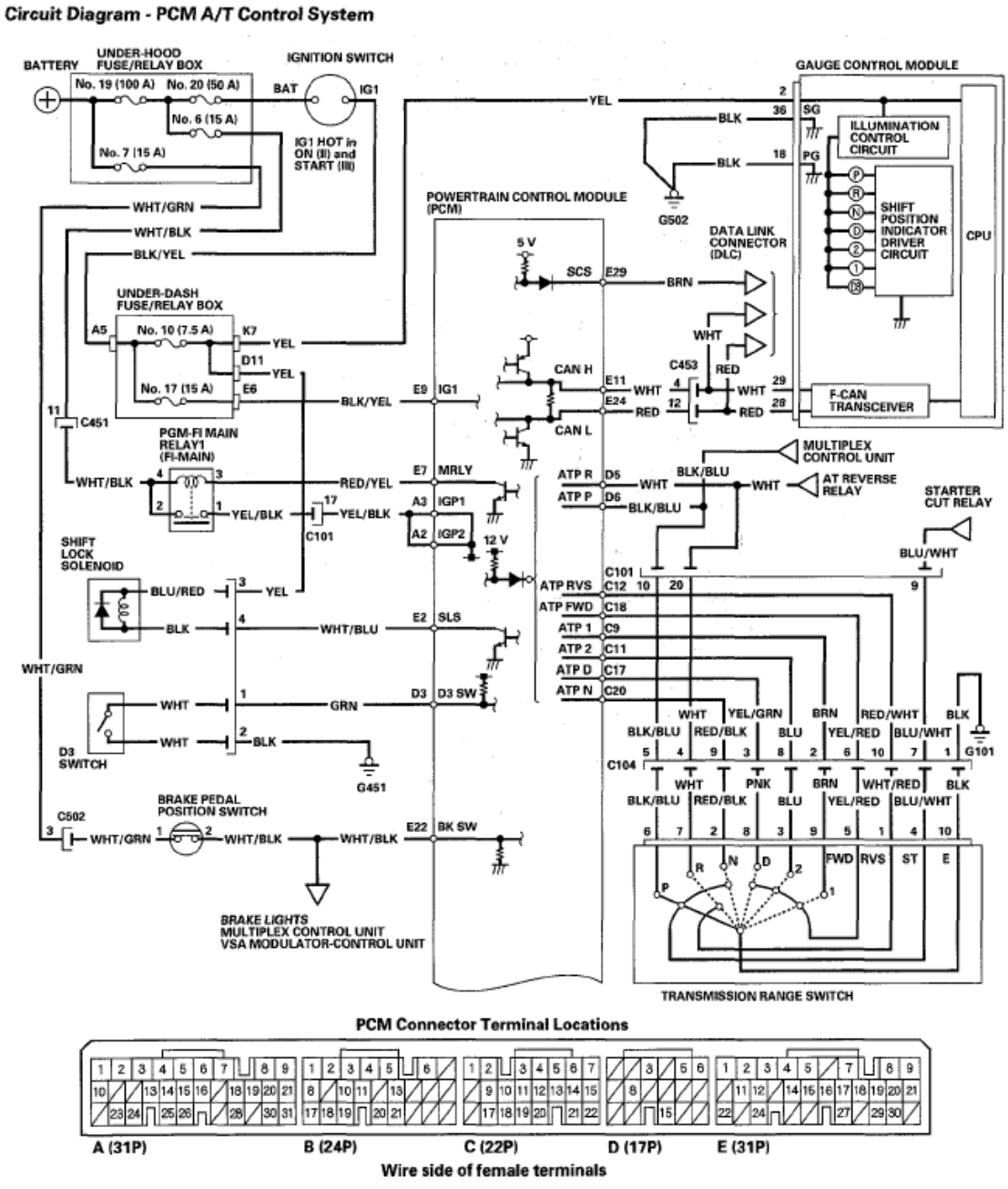
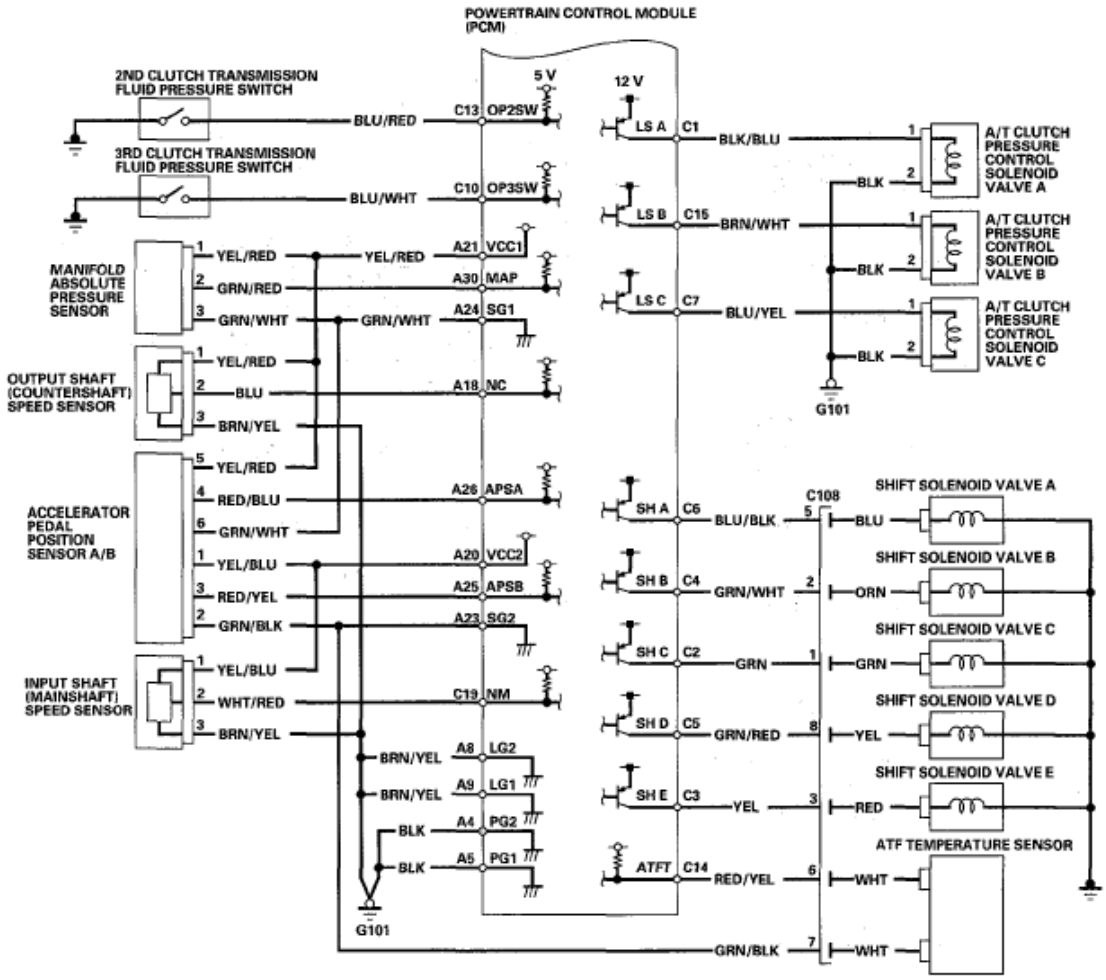


Fig. 62: PCM A/T Control System - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.



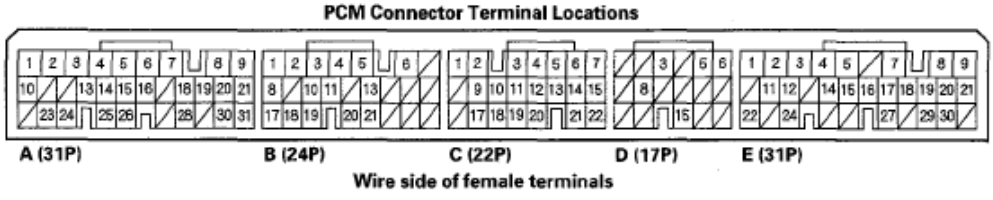


Fig. 63: PCM A/T Control System - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0705: SHORT IN TRANSMISSION RANGE SWITCH CIRCUIT (MULTIPLE SHIFT-POSITION INPUT)

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board**

snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. With the brake pedal pressed, move the shift lever through all positions. Stop for at least 1 second in each position.
5. Monitor the OBD STATUS for P0705 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 6.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the wires between the transmission range switch and the PCM. If the screen indicates NOT COMPLETED, go to step 3.

6. Turn the ignition switch OFF.
7. Inspect the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).

   Is the switch OK?

   YES -Go to step 8.

   NO -Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then go to step 58.

8. Turn the ignition switch ON (II).
9. Shift to any position other than P position.
10. Measure the voltage between PCM connector terminals D6 and A9.

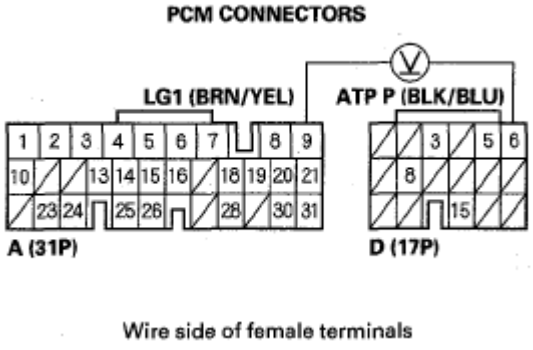


Fig. 64: Measuring Voltage Between PCM Connector Terminals D6 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 17.

NO -Go to step 11.

11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector D (17P).
14. Check for continuity between PCM connector terminal D6 and body ground.

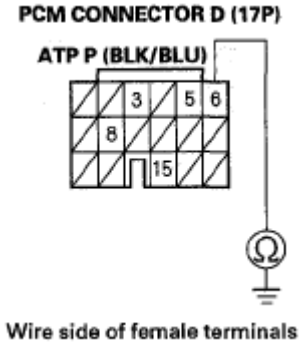


Fig. 65: Checking Continuity Between PCM Connector Terminal D6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal D6 and the transmission range switch, then go to step 58.

NO -Go to step 15.

15. Disconnect PCM connector A (31P).
16. Check for continuity between PCM connector terminal A8 and body ground, and between PCM connector terminal A9 and body ground.

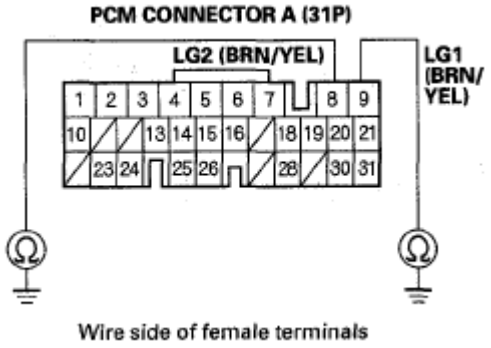


Fig. 66: Checking Continuity Between PCM Connector Terminal A8 And A9 Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 65.

NO -Repair open in the wire between PCM connector terminals A8, A9, and ground (G101), or repair poor ground (G101), then go to step 58.

17. Shift to any position other than R position.
18. Measure the voltage between PCM connector terminals D5 and A9.

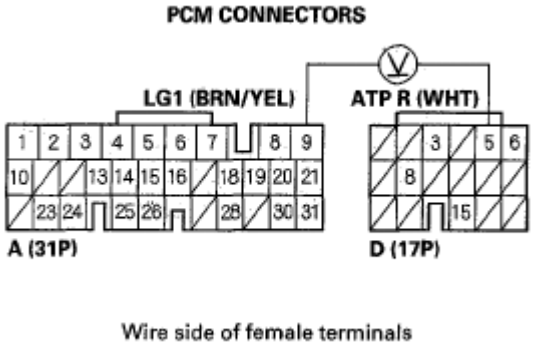


Fig. 67: Measuring Voltage Between PCM Connector Terminals D5 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 23.

NO -Go to step 19.

19. Turn the ignition switch OFF.
20. Jump the SCS line with the HDS.
21. Disconnect PCM connector D(17P).

22. Check for continuity between PCM connector terminal D5 and body ground.

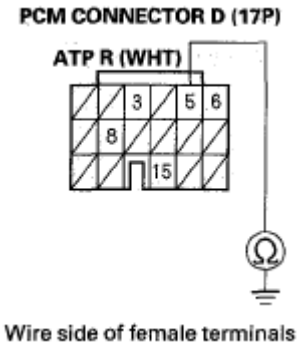


Fig. 68: Checking Continuity Between PCM Connector Terminal D5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal D'5 and the transmission range switch, then go to step 58.

NO -Go to step 65.

23. Measure the voltage between PCM connector terminals C12 and A9.

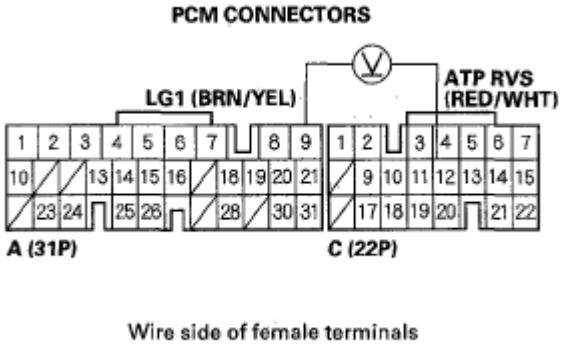


Fig. 69: Measuring Voltage Between PCM Connector Terminals C12 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 28.

NO -Go to step 24.

24. Turn the ignition switch OFF.
25. Jump the SCS line with the HDS.

26. Disconnect PCM connector C (22P).
27. Check for continuity between PCM connector terminal C12 and body ground.

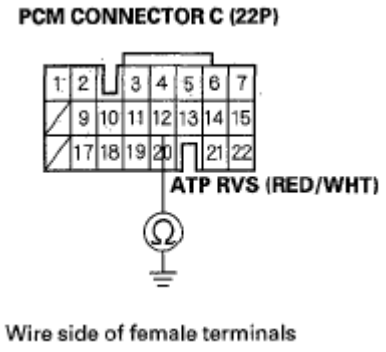


Fig. 70: Checking Continuity Between PCM Connector Terminal C12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C12 and the transmission range switch, then go to step 58.

NO -Go to step 65.

28. Shift to any position other than N position.
29. Measure the voltage between PCM connector terminals C20 and A9.

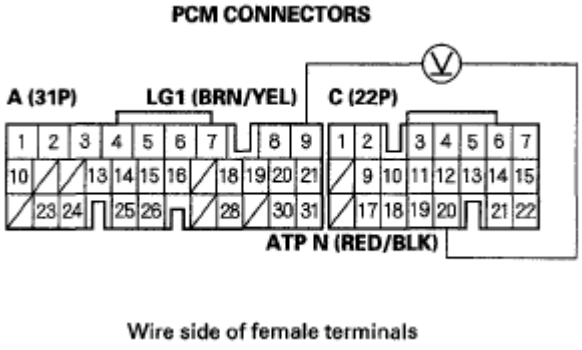


Fig. 71: Measuring Voltage Between PCM Connector Terminals C20 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 34.

NO -Go to step 30.

30. Turn the ignition switch OFF.
31. Jump the SCS line with the HDS.
32. Disconnect PCM connector C (22P).
33. Check for continuity between PCM connector terminal C20 and body ground.

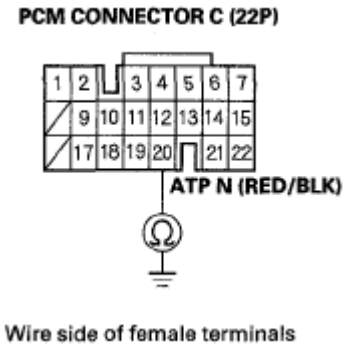


Fig. 72: Checking Continuity Between PCM Connector Terminal C20 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C20 and the transmission range switch, then go to step 58.

NO -Go to step 65.

34. Shift to any position other than D position.
35. Measure the voltage between PCM connector terminals C17 and A9.

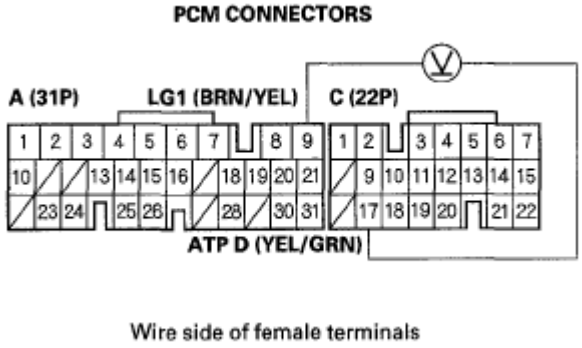


Fig. 73: Measuring Voltage Between PCM Connector Terminals C17 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 40.

NO -Go to step 36.

36. Turn the ignition switch OFF.
37. Jump the SCS line with the HDS.
38. Disconnect PCM connector C (22P).
39. Check for continuity between PCM connector terminal C17 and body ground.

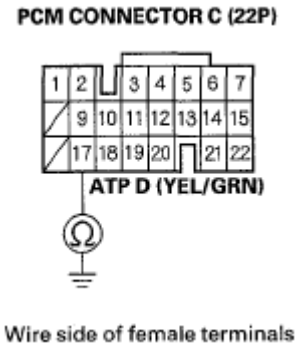


Fig. 74: Checking Continuity Between PCM Connector Terminal C17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C17 and the transmission range switch, then go to step 58.

NO -Go to step 65.

40. Shift to any position other than 2 position.
41. Measure the voltage between PCM connector terminals C11 and A9.

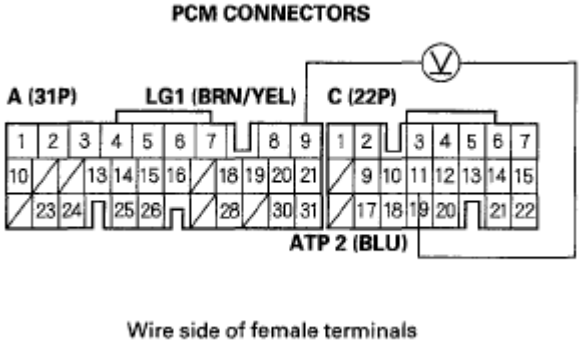


Fig. 75: Measuring Voltage Between PCM Connector Terminals C11 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 46.

NO -Go to step 42.

42. Turn the ignition switch OFF.
43. Jump the SCS line with the HDS.
44. Disconnect PCM connector C (22P).
45. Check for continuity between PCM connector terminal C11 and body ground.

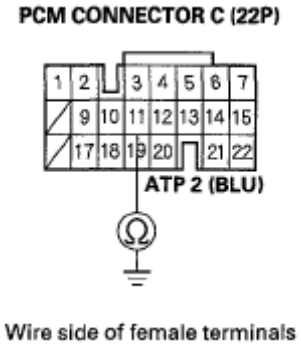


Fig. 76: Checking Continuity Between PCM Connector Terminal C11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C11 and the transmission range switch, then go to step 58.

NO -Go to step 65.

46. Shift to any position other than 1 position.
47. Measure the voltage between PCM connector terminals C9 and A9.

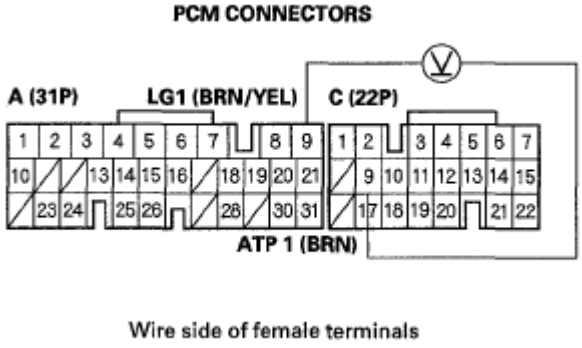


Fig. 77: Measuring Voltage Between PCM Connector Terminals C9 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 52.

NO -Go to step 48.

48. Turn the ignition switch OFF.
49. Jump the SCS line with the HDS.
50. Disconnect PCM connector C (22P).
51. Check for continuity between PCM connector terminal C9 and body ground.

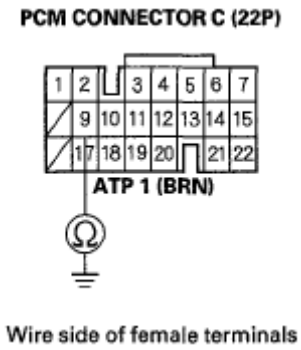


Fig. 78: Checking Continuity Between PCM Connector Terminal C9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C9 and the transmission range switch, then go to step 58.

NO -Go to step 65.

52. Shift to any position other than D, 2, and 1 positions.
53. Measure the voltage between PCM connector terminals C18 and A9.

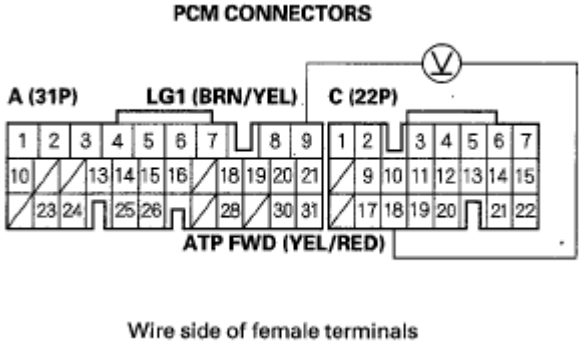


Fig. 79: Measuring Voltage Between PCM Connector Terminals C18 And A9

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 65.

NO -Go to step 54.

54. Turn the ignition switch OFF.
55. Jump the SCS line with the HDS.
56. Disconnect PCM connector C (22P).
57. Check for continuity between PCM connector terminal C18 and body ground.

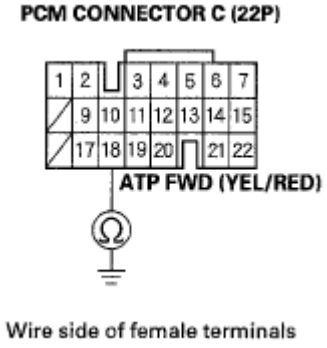


Fig. 80: Checking Continuity Between PCM Connector Terminal C18 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C18 and the transmission range switch, then go to step 58.

NO -Go to step 65.

58. Reconnect all connectors.
59. Turn the ignition switch ON (II).
60. Clear the DTC with the HDS.
61. Start the engine.
62. With the brake pedal pressed, move the shift lever through all positions. Stop for at least 1 second in each position.
63. Check for DTCs with the HDS.

Is DTC P0705 indicated?

YES -Check for intermittent short to body ground in the wire between the transmission range switch and

the PCM, then go to step 1.

NO -Go to step 64.

64. Monitor the OBD STATUS for P0705 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 63, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the transmission range switch and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 61.

65. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
66. Start the engine.
67. With the brake pedal pressed, move the shift lever through all positions. Stop for at least 1 second in each position.
68. Check for DTCs with the HDS.

    Is DTC P0705 indicated?

    YES -Check for intermittent short to body ground in the wire between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 66. If the PCM was substituted, go to step 1.

    NO -Go to step 69.

69. Monitor the OBD STATUS for P0705 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 68, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 66. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 66.

DTC P0706: OPEN IN TRANSMISSION RANGE SWITCH CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. 4WD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   2WD: Raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely. Or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
5. Turn the ignition switch OFF, and repeat the test-drive in step 4.
6. Monitor the OBD STATUS for P0706 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 7.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the transmission range switch and the PCM. If the screen indicates NOT COMPLETED, go to step 4.

7. Turn the ignition switch OFF.
8. Inspect the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).

   Is the switch OK?

   YES -Go to step 9.

   NO -Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then go to step 28.

9. Adjust the shift cable (see **SHIFT CABLE ADJUSTMENT**).
10. Turn the ignition switch ON (II).
11. Clear the DTC with the HDS.
12. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
13. Turn the ignition switch OFF, and repeat the test-drive in step 12.

14. Monitor the OBD STATUS for P0706 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Go to step 15.

    NO -If the screen indicates PASSED, troubleshooting is complete. If the screen indicates NOT COMPLETED, go to step 12.

15. Shift to the D position, and check the ATP FWD and ATP D in the DATA LIST with the HDS.

    Are the ATP FWD and ATP DON?

    YES -Go to step 16.

    NO -Go to step 22.

16. Shift to the 2 position, and check the ATP FWD and ATP 2 in the DATA LIST with the HDS.

    Are the ATP FWD and ATP 2 ON?

    YES -Go to step 17.

    NO -Go to step 22.

17. Shift to the 1 position, and check the ATP FWD and ATP 1 in the DATA LIST with the HDS.

    Are the ATP FWD and ATP 1 ON?

    YES -Go to step 18.

    NO -Go to step 22.

18. Clear the DTC with the HDS.
19. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
20. Turn the ignition switch OFF, and repeat the test-drive in step 19.
21. Monitor the OBD STATUS for P0706 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Go to step 22.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the transmission range switch and the PCM. If the screen indicates NOT COMPLETED, go to step 19.

22. Turn the ignition switch OFF.
23. Disconnect the transmission range switch connector.
24. Check for continuity between transmission range switch connector terminal No. 10 and body ground.

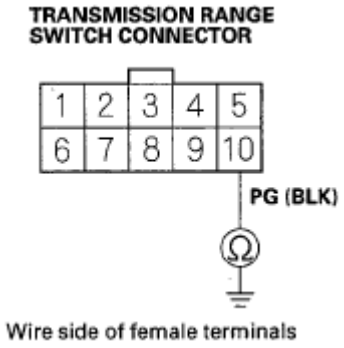


Fig. 81: Checking Continuity Between Transmission Range Switch Connector Terminal No. 10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 25.

NO -Repair open in the wire between transmission range switch connector terminal No. 10 and ground (G101), or repair poor ground (G101), then go to step 30.

25. Turn the ignition switch ON (II).
26. Measure the voltage between transmission range switch connector terminals No. 5 and No. 10.

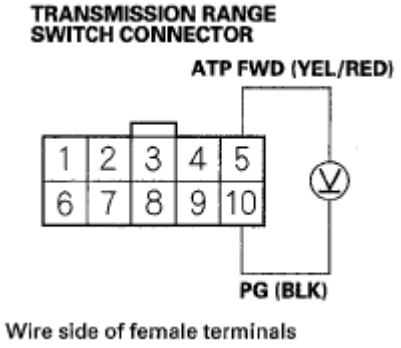


Fig. 82: Measuring Voltage Between Transmission Range Switch Connector Terminals No. 5 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 27.

NO -Repair open in the wire between the transmission range switch and PCM connector terminal C18, then go to step 30.

27. Measure the voltage between transmission range switch connector terminals No. 8 and No. 10.

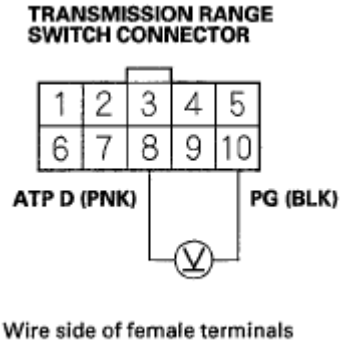


Fig. 83: Measuring Voltage Between Transmission Range Switch Connector Terminals No. 8 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 28.

NO -Repair open in the wire between the transmission range switch and PCM connector terminal C17, then go to step 30.

28. Measure the voltage between transmission range switch connector terminals No. 3 and No. 10.

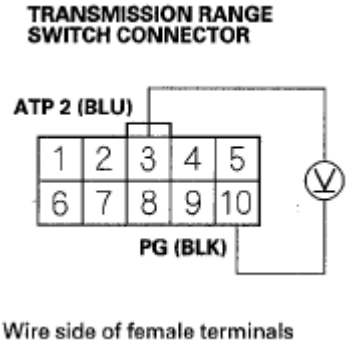


Fig. 84: Measuring Voltage Between Transmission Range Switch Connector Terminals No. 3 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 29.

NO -Repair open in the wire between the transmission range switch and PCM connector terminal C11, then go to step 30.

29. Measure the voltage between transmission range switch connector terminals No. 9 and No. 10.

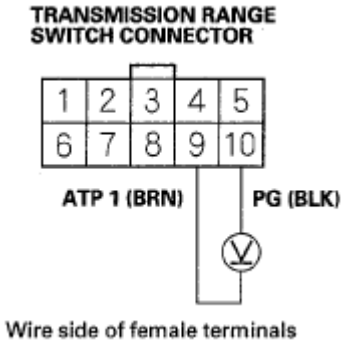


Fig. 85: Measuring Voltage Between Transmission Range Switch Connector Terminals No. 9 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 37.

NO -Repair open in the wire between the transmission range switch and PCM connector terminal C9, then go to step 30.

30. Reconnect all connectors.
31. Turn the ignition switch ON (II).
32. Clear the DTC with the HDS.
33. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
34. Turn the ignition switch OFF, and repeat the test-drive in step 33.
35. Check for DTCs with the HDS.

Is DTC P0706 indicated?

YES -Check for poor connections or loose terminals between the transmission range switch and the PCM, then go to step 1.

NO -Go to step 36.

36. Monitor the OBD STATUS for P0706 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 35, go to the indicated DTC's troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between the transmission range switch and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 33.

37. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
38. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
39. Turn the ignition switch OFF, and repeat the test-drive in step 38.
40. Check for DTCs with the HDS.

    Is DTC P0706 indicated?

    YES -Check for poor connections or loose terminals between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 38. If the PCM was substituted, go to step 1.

    NO -Go to step 41.

41. Monitor the OBD STATUS for P0706 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 40, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 38. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 38.

DTC P0711: PROBLEM IN ATF TEMPERATURE SENSOR CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Check the ATF TEMP SENSOR in the DATA LIST with the HDS.

Does the ATF temperature exceed the ambient air temperature?

YES -Record the ATF temperature. Leave the engine off for at least 30 minutes, then go to step 3.

NO -Record the ATF temperature. Test the stall speed RPM (see **STALL SPEED TEST**) three times, then go to step 3.

3. Check the ATF TEMP SENSOR in the DATA LIST with the HDS.

   Did the ATF temperature change?

   YES -Leave the engine off for at least 30 minutes, then go to step 4.

   NO -Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR TEST/REPLACEMENT**), then go to step 8.

4. Check the ECT SENSOR in the DATA LIST with the HDS.

   Does the ECT SENSOR read about the same as the ambient air temperature?

   YES -Go to step 5.

   NO -Leave the engine off until the ECT SENSOR reads the same as the ambient air temperature, then go to step 5.

5. Check the ATF TEMP SENSOR in the DATA LIST with the HDS.

   Does the ATF temperature read about the same as ECT SENSOR?

   YES -Go to step 16.

   NO -Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR TEST/REPLACEMENT**), then go to step 6.

6. Reconnect all connectors.
7. Turn the ignition switch ON (II).
8. Clear the DTC with the HDS.
9. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
10. Allow the engine coolant temperature to cool to the ambient air temperature.
11. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on), and wait for at least 20 seconds, then drive the vehicle at speeds over 19 mph (31 km/h) for at least 5 minutes.
12. Check for DTCs with the HDS.

    Is DTC P0711 indicated?

YES -Check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1.

NO -Go to step 13.

13. Monitor the OBD STATUS for P0711 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 12, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 9.

14. Check for DTCs with the HDS.

    Is DTC P0711 indicated?

    YES -Check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1.

    NO -Go to step 15.

15. Monitor the OBD STATUS for P0711 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 14, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 9.

16. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
17. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
18. Allow the engine coolant temperature to cool to the ambient air temperature.
19. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on), and wait for at least 20 seconds, then drive the vehicle at speeds over 19 mph (31 km/h) for at least 5 minutes.
20. Check for DTCs with the HDS.

    Is DTC P0711 indicated?

YES -Check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 17. If the PCM was substituted, go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0711 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 17. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 17.

DTC P0712: SHORT IN ATF TEMPERATURE SENSOR CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, arid review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Check the ATF TEMP SENSOR voltage in the DATA LIST with the HDS.

   Is the ATF TEMP SENSOR voltage 0.07 V or less?

   YES -Go to step 3.

   NO -Intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the ATFT wire between the ATF temperature sensor and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the shift solenoid harness connector at the shift solenoid valve cover.
5. Turn the ignition switch ON (II).
6. Check the ATF TEMP SENSOR voltage in the DATA LIST with the HDS.

   Is the ATF TEMP SENSOR voltage 0.07 V or less?

   YES -Go to step 7.

NO -Go to step 11.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector C (22P).
10. Check for continuity between shift solenoid harness connector terminal No. 6 and body ground.

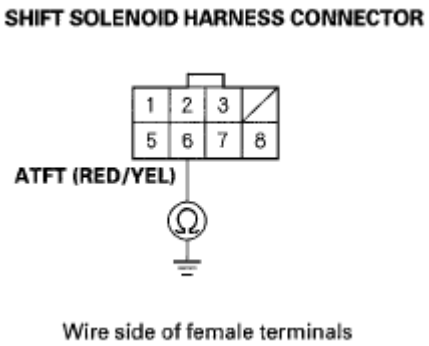


Fig. 86: Checking Continuity Between Shift Solenoid Harness Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C14 and shift solenoid harness connector terminal No. 6, then go to step 12.

NO -Go to step 11.

11. Check for continuity between shift solenoid harness connector terminal No. 6 and body ground.

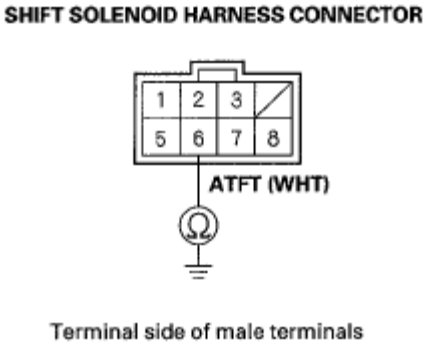


Fig. 87: Checking Continuity Between Shift Solenoid Harness Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR TEST/REPLACEMENT**), then go to step 12.

NO -Go to step 18.

12. Reconnect all connectors.
13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Start the engine in the P position, and wait for at least 20 seconds.
16. Check for DTCs with the HDS.

Is DTC P0712 indicated?

YES -Check for intermittent short to body ground in the wire between the ATF temperature sensor and the PCM, then go to step 1.

NO -Go to step 17.

17. Monitor the OBD STATUS for P0712 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the ATF temperature sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 15.

18. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
19. Start the engine in the P position, and wait for at least 20 seconds.
20. Check for DTCs with the HDS.

Is DTC P0712 indicated?

YES -Check for intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0712 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

DTC P0713: OPEN IN ATF TEMPERATURE SENSOR CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Check the ATF TEMP SENSOR voltage in the DATA LIST with the HDS.

   Does the ATF TEMP SENSOR voltage exceed 4.93 V?

   YES -Go to step 3.

   NO -Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the ATF temperature sensor and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the shift solenoid harness connector.
5. Connect shift solenoid harness connector terminals No. 6 and No. 7 with a jumper wire.

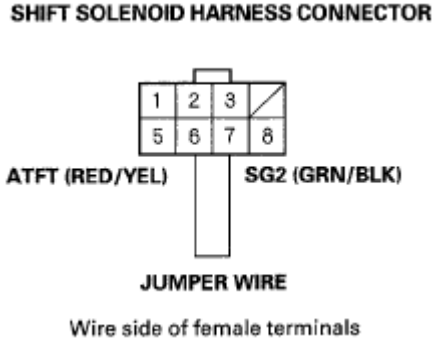


Fig. 88: Connecting Shift Solenoid Harness Connector Terminals No. 6 And 7 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch ON (II).

7. Check the ATF TEMP SENSOR voltage in the DATA LIST with the HDS.

   Does the ATF TEMP SENSOR voltage exceed 4.93 V?

   YES -Go to step 8.

   NO -Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR TEST/REPLACEMENT**), then go to step 18.

8. Turn the ignition switch OFF.
9. Remove the jumper wire from the shift solenoid harness connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between shift solenoid harness connector terminal No. 6 and body ground.

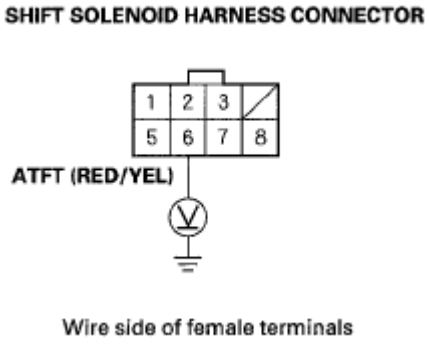


Fig. 89: Measuring Voltage Between Shift Solenoid Harness Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Go to step 12.

NO -Go to step 17.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector A (31P).
15. Connect shift solenoid harness connector terminal No. 7 and body ground with a jumper wire.

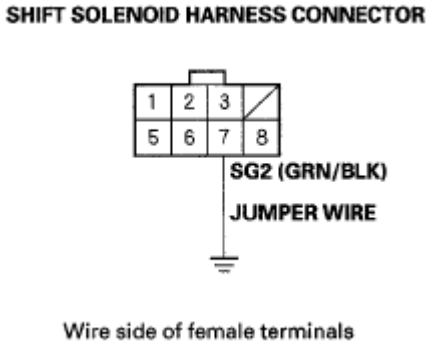


Fig. 90: Connecting Shift Solenoid Harness Connector Terminal No. 7 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between PCM connector terminal A23 and body ground.

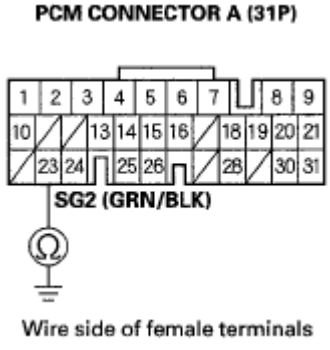


Fig. 91: Checking Continuity Between PCM Connector Terminal A23 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 24.

NO -Repair open in the wire between PCM connector terminal A23 and the ATF temperature sensor, then go to step 18.

17. Measure the voltage between PCM connector terminal C14 and body ground.

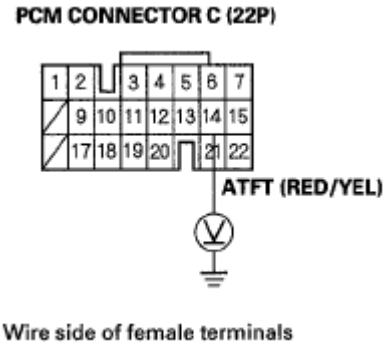


Fig. 92: Measuring Voltage Between PCM Connector Terminal C14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Repair open in the wire between PCM connector terminal C14 and the ATF temperature sensor, then go to step 18.

NO -Go to step 24.

18. Reconnect all connectors.
19. Turn the ignition switch ON (II).
20. Clear the DTC with the HDS.
21. Start the engine in the P position, and wait for at least 20 seconds.
22. Check for DTCs with the HDS.

Is DTC P0713 indicated?

YES -Check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1.

NO -Go to step 23.

23. Monitor the OBD STATUS for P0713 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 22, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 21.

24. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a

known-good PCM (see **SUBSTITUTING THE PCM**).

25. Start the engine in the P position, and wait for at least 20 seconds.
26. Check for DTCs with the HDS.

    Is DTC P0713 indicated?

    YES -Check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 27. If the PCM was substituted, go to step 1.

    NO -Go to step 27.

27. Monitor the OBD STATUS for P0713 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 26, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 25. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 25.

DTC P0716: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT; DTC P0717: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT)

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for proper input shaft (mainshaft) speed sensor installation (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**).
4. 4WD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   2WD: Raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely. Or raise the vehicle on a lift.

5. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position, and

hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds when not during shifting. Slow down and stop the wheels.

6. Monitor the OBD STATUS for P0716 or P0717 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 7.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (31P) and the input shaft (mainshaft) speed sensor connector.
10. Check for continuity between PCM connector terminal A8 and body ground, and between PCM connector terminal A9 and body ground.

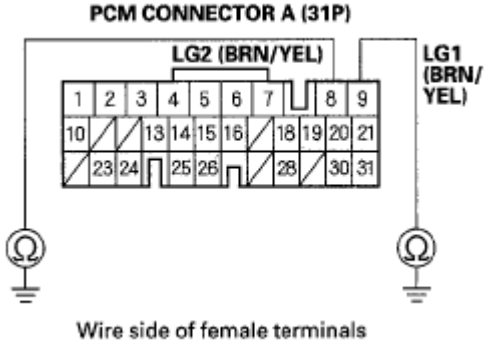


Fig. 93: Checking Continuity Between PCM Connector Terminal A8 And A9 Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 11.

NO -Repair open in the wires between PCM connector terminals A8, A9, and ground (G101), or repair poor ground (G101), then go to step 30.

11. Connect PCM connector A (31P).
12. Turn the ignition switch ON (II).
13. Measure the voltage between input shaft (mainshaft) speed sensor connector terminal No. 1 and body ground.

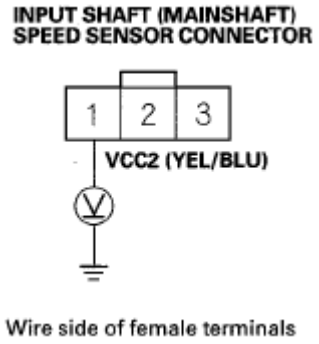


Fig. 94: Measuring Voltage Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Go to step 14.

NO -Go to step 25.

14. Turn the ignition switch OFF.
15. Disconnect PCM connector C (22P).
16. Check for continuity between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

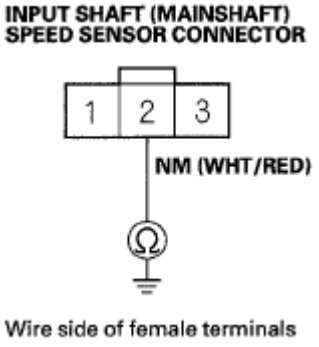


Fig. 95: Checking Continuity Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C19 and the input shaft (mainshaft) speed sensor, then go to step 30.

NO -Go to step 17.

17. Check for continuity between input shaft (mainshaft) speed sensor connector terminal No. 3 and body ground.

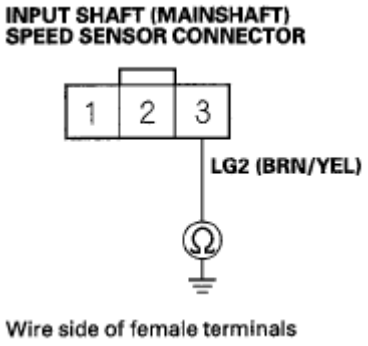


Fig. 96: Checking Continuity Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair open in the wire between the input shaft (mainshaft) speed sensor and ground (G101), then go to step 30.

18. Connect PCM connector C (22P).
19. Turn the ignition switch ON (II).
20. Measure the voltage between input shaft (mainshaft) speed sensor connector terminals No. 2 and No. 3.

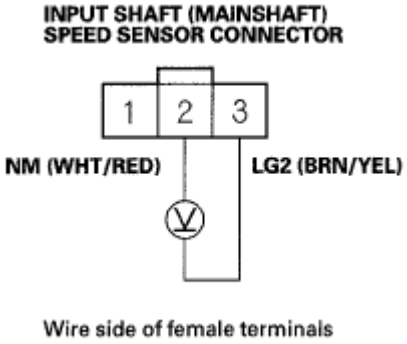


Fig. 97: Measuring Voltage Between Input Shaft (Mainshaft) Speed Sensor Connector Terminals No. 2 And 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Go to step 21.

NO -Go to step 29.

21. Connect the input shaft (mainshaft) speed sensor connector.
22. Measure the voltage between PCM connector terminals C19 and A9.

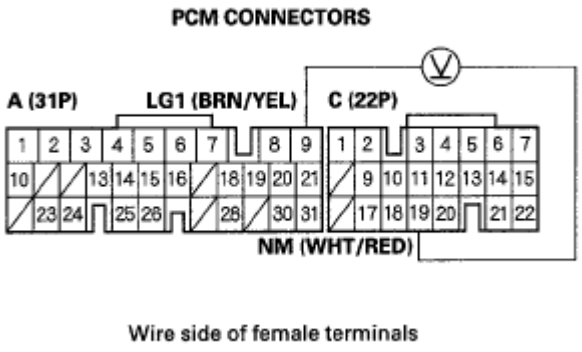


Fig. 98: Measuring Voltage Between PCM Connector Terminals C19 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0 V or about 5 V?

YES -Go to step 23.

NO -Replace the input shaft (mainshaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 30.

23. Shift to the P position. Start the engine, and let it idle.
24. With the engine idling, measure the voltage between PCM connector terminals C19 and A9.

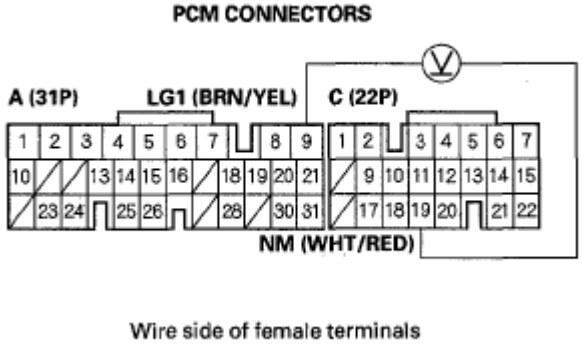


Fig. 99: Measuring Voltage Between PCM Connector Terminals C19 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.5-3.5 V?

YES -Go to step 36.

NO -Replace the input shaft (mainshaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 30.

25. Measure the voltage between PCM connector terminals A20 and A9.

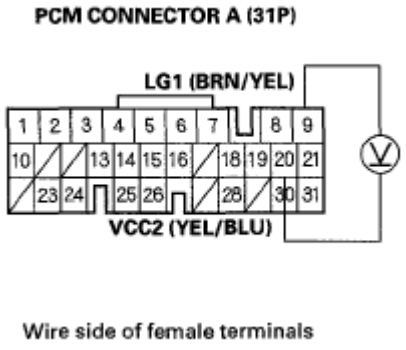


Fig. 100: Measuring Voltage Between PCM Connector Terminals A20 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Repair open in the wire between PCM connector terminal A20 and the input shaft (mainshaft) speed sensor, then go to step 30.

NO -Go to step 26.

26. Turn the ignition switch OFF.
27. Disconnect PCM connector A (31P).
28. Check for continuity between PCM connector terminal A20 and body ground.

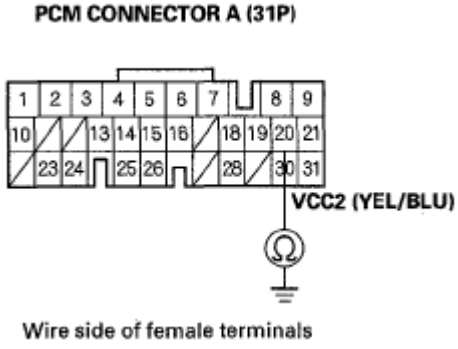


Fig. 101: Checking Continuity Between PCM Connector Terminal A20 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal A20 and the input shaft

(mainshaft) speed sensor, then go to step 29.

NO -Go to step 36.

29. Measure the voltage between PCM connector terminals C19 and A9.

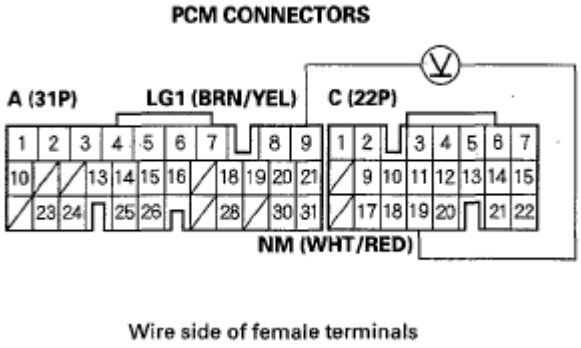


Fig. 102: Measuring Voltage Between PCM Connector Terminals C19 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Repair open in the wire between PCM connector terminal C19 and the input shaft (mainshaft) speed sensor, then go to step 30.

NO -Go to step 36.

30. Reconnect all connectors.
31. Turn the ignition switch ON (II).
32. Clear the DTC with the HDS.
33. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position and hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds. Slow down and stop the wheels.
34. Check for DTCs with the HDS.

Is DTC P0716 or P0717 indicated?

YES -Check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM, then go to step 1.

NO -Go to step 35.

35. Monitor the OBD STATUS for P0716 or P0717 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 34, go to the indicated

DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 33.

36. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
37. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position and hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds. Slow down and stop the wheels.
38. Check for DTCs with the HDS.

    Is DTC P0716 or P0717 indicated?

    YES -Check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 37. If the PCM was substituted, go to step 1.

    NO -Go to step 39.

39. Monitor the OBD STATUS for P0716 or P0717 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 38, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 37. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 37.

DTC P0718: INPUT SHAFT (MAINSHAFT) SPEED SENSOR INTERMITTENT FAILURE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
4. Turn the ignition switch OFF, and repeat the test-drive in step 3.

5. Monitor the OBD STATUS for P0718 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 6.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 3.

6. Turn the ignition switch OFF.
7. Disconnect the input shaft (mainshaft) speed sensor connector, and inspect the connector and connector terminals to be sure they are making good contact.

   Are the connector terminals OK?

   YES -Go to step 8.

   NO -Repair the connector terminals, then go to step 8.

8. Connect the input shaft (mainshaft) speed sensor connector.
9. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
10. Turn the ignition switch OFF, and repeat the test-drive in step 9.
11. Monitor the OBD STATUS for P0718 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Go to step 12.

    NO -If the screen indicates PASSED, troubleshooting is complete. If the screen indicates NOT COMPLETED, go to step 9.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector C (22P).
15. Disconnect the input shaft (mainshaft) speed sensor connector.
16. Check for continuity between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

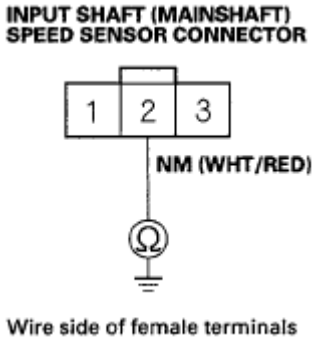


Fig. 103: Checking Continuity Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C19 and the input shaft (mainshaft) speed sensor, then go to step 23.

NO -Go to step 17.

17. Connect PCM connector C (22P).
18. Turn the ignition switch ON (II).
19. Measure the voltage between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

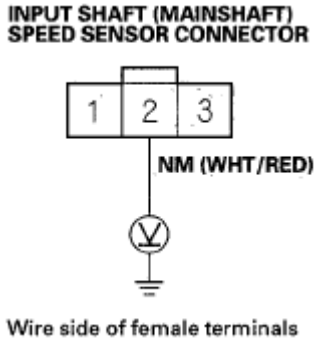


Fig. 104: Measuring Voltage Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Replace the input shaft (mainshaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 23.

NO -Go to step 20.

20. Turn the ignition switch OFF.
21. Disconnect PCM connector C (22P).
22. Check for continuity between PCM connector terminal C19 and input shaft (mainshaft) speed sensor connector terminal No. 2.

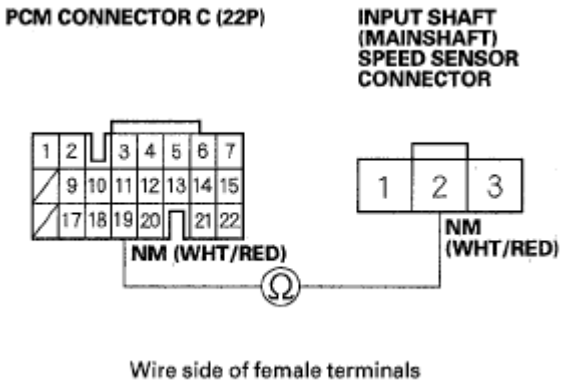


Fig. 105: Checking Continuity Between PCM Connector Terminal C19 And Input Shaft (Mainshaft) Speed Sensor Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 30.

NO -Repair open in the wire between PCM connector terminal C19 and the input shaft (mainshaft) speed sensor, then go to step 23.

23. Reconnect all connectors.
24. Turn the ignition switch ON (II).
25. Clear the DTC with the HDS.
26. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
27. Turn the ignition switch OFF, and repeat the test-drive in step 26.
28. Check for DTCs with the HDS.

Is DTC P0718 indicated?

YES -Check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM, then go to step 1.

NO -Go to step 29.

29. Monitor the OBD STATUS for P0718 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 26.

30. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
31. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
32. Turn the ignition switch OFF, and repeat the test-drive in step 31.
33. Check for DTCs with the HDS.

    Is DTC P0718 indicated?

    YES -Check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 31. If the PCM was substituted, go to step 1.

    NO -Go to step 34.

34. Monitor the OBD STATUS for P0718 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 33, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the input shaft (mainshaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 31. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 31.

DTC P0721: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT; DTC P0722: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT)

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).

2. Clear the DTC with the HDS.
3. Check for proper output shaft (countershaft) speed sensor installation (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**).
4. 4WD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   2WD: Raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely. Or raise the vehicle on a lift.

5. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position with the engine speed 2,000 rpm or higher for at least 10 seconds. Slow down and stop the wheels.
6. Monitor the OBD STATUS for P0721 or P0722 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 7.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (31P) and the output shaft (countershaft) speed sensor connector.
10. Check for continuity between PCM connector terminal A8 and body ground, and between PCM connector terminal A9 and body ground.

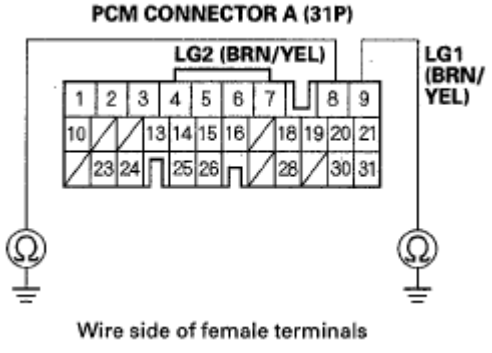


Fig. 106: Checking Continuity Between PCM Connector Terminal A8 And A9 Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 11.

NO -Repair open in the wires between PCM connector terminals A8, A9, and ground (G101), or repair

poor ground (G101), then go to step 30.

11. Connect PCM connector A (31P).
12. Turn the ignition switch ON (II).
13. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 1 and body ground.

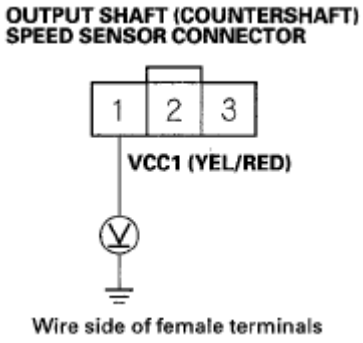


Fig. 107: Measuring Voltage Between Output Shaft (Countershaft) Speed Sensor Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Go to step 14.

NO -Go to step 25.

14. Turn the ignition switch OFF.
15. Disconnect PCM connector A (31P).
16. Check for continuity between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

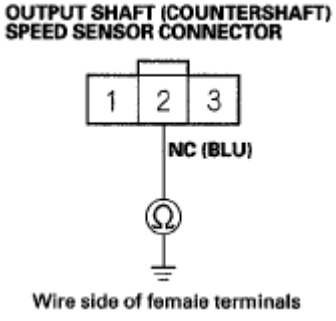


Fig. 108: Checking Continuity Between Output Shaft (Countershaft) Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal A18 and the output shaft (countershaft) speed sensor, then go to step 30.

NO -Go to step 17.

17. Check for continuity between output shaft (countershaft) speed sensor connector terminal No. 3 and body ground.

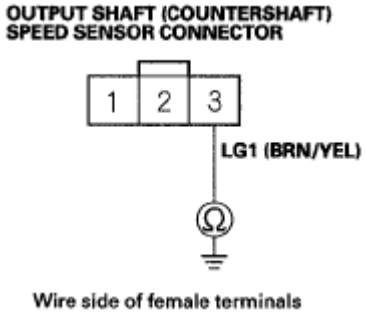


Fig. 109: Checking Continuity Between Output Shaft (Countershaft) Speed Sensor Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair open in the wire between the output shaft (countershaft) speed sensor and ground (G101), or repair poor ground (G101), then go to step 30.

18. Connect PCM connector A (31P).
19. Turn the ignition switch ON (II).
20. Measure the voltage between output shaft (countershaft) speed sensor connector terminals No. 2 and No. 3.

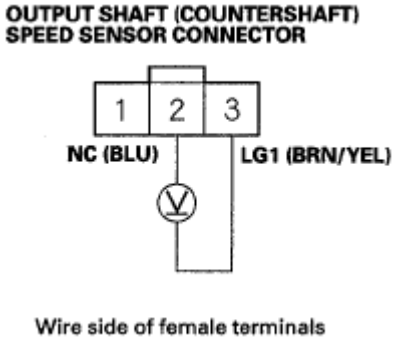


Fig. 110: Measuring Voltage Between Output Shaft (Countershaft) Speed Sensor Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Go to step 21.

NO -Go to step 29.

21. Connect the output shaft (countershaft) speed sensor connector.
22. Measure the voltage between PCM connector terminals A18 and A9.

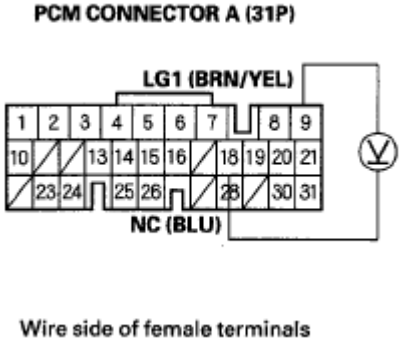


Fig. 111: Measuring Voltage Between PCM Connector Terminals A18 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0 V or about 5 V?

YES -Go to step 23.

NO -Replace the output shaft (countershaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 30.

23. Shift to the P position. Start the engine, and let it idle.
24. Shift to the D position, allow the wheels rotate, and measure the voltage between PCM connector terminals A18 and A9.

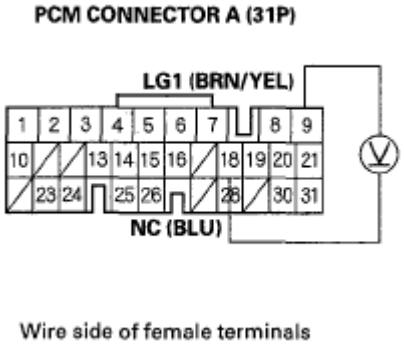


Fig. 112: Measuring Voltage Between PCM Connector Terminals A18 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.5-3.5 V?

YES -Go to step 36.

NO -Replace the output shaft (countershaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 30.

25. Measure the voltage between PCM connector terminals A21 and A9.

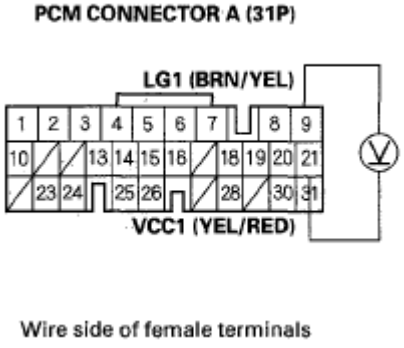


Fig. 113: Measuring Voltage Between PCM Connector Terminals A21 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Repair open in the wire between PCM connector terminal A21 and the output shaft (countershaft) speed sensor, then go to step 30.

NO -Go to step 26.

26. Turn the ignition switch OFF.
27. Disconnect PCM connector A (31P).
28. Check for continuity between PCM connector terminal A21 and body ground.

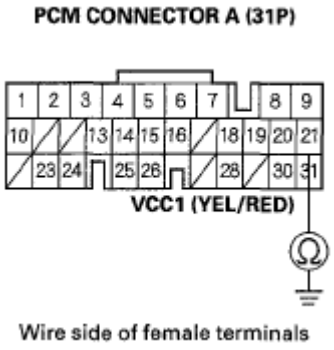


Fig. 114: Checking Continuity Between PCM Connector Terminal A21 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal A21 and the output shaft (countershaft) speed sensor, then go to step 30.

NO -Go to step 36.

29. Measure the voltage between PCM connector terminals A18 and A9.

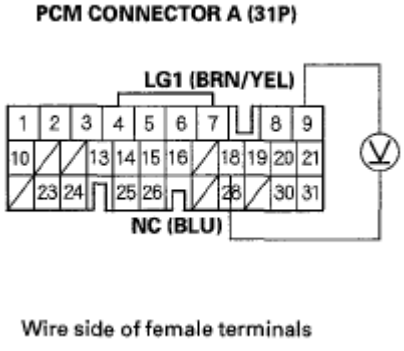


Fig. 115: Measuring Voltage Between PCM Connector Terminals A18 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Repair open in the wire between PCM connector terminal A18 and the output shaft (countershaft) speed sensor, then go to step 30.

NO -Go to step 36.

30. Reconnect all connectors.
31. Turn the ignition switch ON (II).
32. Clear the DTC with the HDS.

33. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position with the engine speed 2,000 rpm or higher for at least 10 seconds. Slow down and stop the wheels.
34. Check for DTCs with the HDS.

    Is DTC P0721 or P0722 indicated?

    YES -Check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM, then go to step 1.

    NO -Go to step 35.

35. Monitor the OBD STATUS for P0721 or P0722 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 34, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 33.

36. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
37. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in the D position with the engine speed 2,000 rpm or higher for at least 10 seconds. Slow down and stop the wheels.
38. Check for DTCs with the HDS.

    Is DTC P0721 or P0722 indicated?

    YES -Cheek for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good, PCM (see **SUBSTITUTING THE PCM**), then go to step 37. If the PCM was substituted, go to step 1.

    NO -Go to step 39.

39. Monitor the OBD STATUS for P0721 or P0722 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 38, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM

(see **SUBSTITUTING THE PCM**), then go to step 37. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 37.

DTC P0723: OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR INTERMITTENT FAILURE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
4. Turn the ignition switch OFF, and repeat the test-drive in step 3.
5. Monitor the OBD STATUS for P0723 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 6.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 3.

6. Turn the ignition switch OFF.
7. Disconnect the output shaft (countershaft) speed sensor connector, and inspect the connector and connector terminals to be sure they are making good contact.

   Are the connector terminals OK?

   YES -Go to step 8.

   NO -Repair the connector terminals, then go to step 8.

8. Connect the output shaft (countershaft) speed sensor connector.
9. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
10. Turn the ignition switch OFF, and repeat the test-drive in step 9.
11. Monitor the OBD STATUS for P0723 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Go to step 12.

NO -If the screen indicates PASSED, troubleshooting is complete. If the screen indicates NOT COMPLETED, go to step 9.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector A (31P).
15. Disconnect the output shaft (countershaft) speed sensor connector.
16. Check for continuity between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

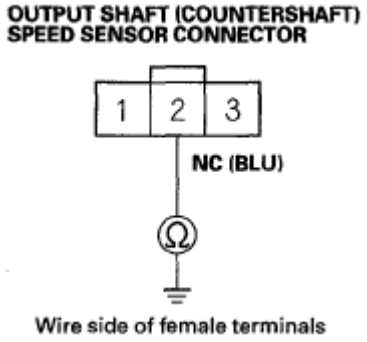


Fig. 116: Checking Continuity Between Output Shaft (Countershaft) Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal A18 and the output shaft (countershaft) speed sensor, then go to step 23.

NO -Go to step 17.

17. Connect PCM connector A (31P).
18. Turn the ignition switch ON (II).
19. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

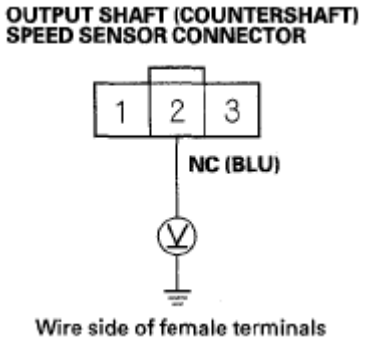


Fig. 117: Measuring Voltage Between Output Shaft (Countershaft) Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Replace the output shaft (countershaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 23.

NO -Go to step 20.

20. Turn the ignition switch OFF.
21. Disconnect PCM connector A (31P).
22. Check for continuity between PCM connector terminal A18 and output shaft (countershaft) speed sensor connector terminal No. 2.

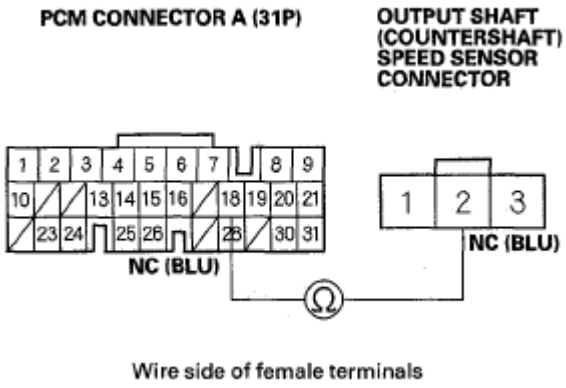


Fig. 118: Checking Continuity Between PCM Connector Terminal A18 And Output Shaft (Countershaft) Speed Sensor Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 30.

NO -Repair open in the wire between PCM connector terminal A18 and the output shaft (countershaft)

speed sensor, then go to step 23.

23. Reconnect all connectors.
24. Turn the ignition switch ON (II).
25. Clear the DTC with the HDS.
26. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
27. Turn the ignition switch OFF, and repeat the test-drive in step 26.
28. Check for DTCs with the HDS.

    Is DTC P0723 indicated?

    YES -Check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM, then go to step 1.

    NO -Go to step 29.

29. Monitor the OBD STATUS for P0723 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 26.

30. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
31. Test-drive the vehicle at speeds over 12 mph (20 km/h) in the D position through all five gears.
32. Turn the ignition switch OFF, and repeat the test-drive in step 31.
33. Check for DTCs with the HDS.

    Is DTC P0723 indicated?

    YES -Check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 31. If the PCM was substituted, go to step 1.

    NO -Go to step 34.

34. Monitor the OBD STATUS for P0723 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 33, go to the indicated DTC's troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between the output shaft (countershaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 31. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 31.

DTC P0731: PROBLEM IN 1ST CLUTCH AND 1ST CLUTCH HYDRAULIC CIRCUIT (1ST GEAR INCORRECT GEAR RATIO)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and cheek for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 13.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within service limits?

   YES -Go to step 5.

   NO -Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 13.

5. Measure the 1st clutch pressure (see **PRESSURE TEST**).

   Is the 1st clutch pressure within service limits?

   YES -Go to step 6.

   NO -Shift valves B and C are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 13.

6. Test stall speed in the 1 position (see **STALL SPEED TEST**).

Does the stall speed test within service limits?

YES -Go to step 7.

NO -Shift valves A and D are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 13.

7. Turn the ignition switch ON (II).
8. Clear the DTC with the HDS.
9. Test-drive under these conditions:
   - D position in 1st gear.
   - Engine speed 1,000 rpm or more.
   - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
10. Turn the ignition switch OFF, and repeat the test-drive in step 9.
11. Check for DTCs with the HDS.

Is DTC P0731 indicated?

YES -Repair the 1st clutch, or replace the transmission, then go to step 13.

NO -Go to step 12.

12. Monitor the OBD STATUS for P0731 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Intermittent failure, the system is OK at this time. If any other DTCs were indicated in step 11, go to the indicated DTCs troubleshooting.

NO -If the screen indicated FAILED, repair the 1st clutch, or replace the transmission. If the screen indicates NOT COMPLETED, go to step 9.

13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Test-drive under these conditions:
   - D position in 1st gear.
   - Engine speed 1,000 rpm or more.
   - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
16. Turn the ignition switch OFF, and repeat the test-drive in step 15.
17. Check for DTCs with the HDS.

Is DTC P0731 indicated?

YES -Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4.

NO -Go to step 18.

18. Monitor the OBD STATUS for P0731 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 17, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4. If the screen indicates NOT COMPLETED, go to step 15.

DTC P0732: PROBLEM IN 2ND CLUTCH AND 2ND CLUTCH HYDRAULIC CIRCUIT (2ND GEAR INCORRECT GEAR RATIO)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 13.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within service limits?

   YES -Go to step 5.

   NO -Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 13.

5. Measure the 2nd clutch pressure (see **PRESSURE TEST**).

   Is the 2nd clutch pressure within service limits?

YES -Go to step 6.

NO -Shift valves A and B are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 13.

6. Test stall speed in the 2 position (see **STALL SPEED TEST**).

   Does the stall speed test within service limits?

   YES -Go to step 7.

   NO -Shift valve C is stuck. Repair shift valve C and the hydraulic circuit, or replace the transmission, then go to step 13.

7. Turn the ignition switch ON (II).
8. Clear the DTC with the HDS.
9. Test-drive under these conditions:
   - D position in 2nd gear.
   - Engine speed 1,000 rpm or more.
   - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
10. Turn the ignition switch OFF, and repeat the test-drive in step 9.
11. Check for DTCs with the HDS.

    Is DTC P0732 indicated?

    YES -Repair the 2nd clutch, or replace the transmission, then go to step 13.

    NO -Go to step 12.

12. Monitor the OBD STATUS for P0732 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Intermittent failure, the system is OK at this time. If any other DTCs were indicated in step 11, go to the indicated DTCs troubleshooting.

    NO -If the screen indicated FAILED, repair the 2nd clutch, or replace the transmission. If the screen indicates NOT COMPLETED, go to step 9.

13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Test-drive under these conditions:
    - D position in 2nd gear.
    - Engine speed 1,000 rpm or more.

- Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.

16. Turn the ignition switch OFF, and repeat the test-drive in step 15.
17. Check for DTCs with the HDS.

    Is DTC P0732 indicated ?

    YES -Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4.

    NO -Go to step 18.

18. Monitor the OBD STATUS for P0732 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 17, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4. If the screen indicates NOT COMPLETED, go to step 15.

DTC P0733: PROBLEM IN 3RD CLUTCH AND 3RD CLUTCH HYDRAULIC CIRCUIT (3RD GEAR INCORRECT GEAR RATIO)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

    Does the strainer have metal debris or excessive clutch material?

    YES -Replace the transmission, then go to step 12.

    NO -Replace the ATF (see step 5), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

    Is the line pressure within service limits?

    YES -Go to step 5.

NO -Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 12.

5. Measure the 3rd clutch pressure (see **PRESSURE TEST**).

   Is the 3rd clutch pressure within service limits?

   YES -Go to step 6.

   NO -Shift valves A and D are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 12.

6. Turn the ignition switch ON (II).
7. Clear the DTC with the HDS.
8. Test-drive under these conditions:
   - D position in 3rd gears.
   - Engine speed 1,000 rpm or more.
   - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
9. Turn the ignition switch OFF, and repeat the test-drive in step 8.
10. Check for DTCs with the HDS.

    Is DTC P0733 indicated?

    YES -Repair the 3rd clutch, or replace the transmission, then go to step 12.

    NO -Go to step 11.

11. Monitor the OBD STATUS for P0733 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Intermittent failure, the system is OK at this time. If any other DTCs were indicated in step 10, go to the indicated DTCs troubleshooting.

    NO -If the screen indicated FAILED, repair the 3rd clutch, or replace the transmission. If the screen indicates NOT COMPLETED, go to step 8.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive under these conditions:
    - D position in 3rd gear.
    - Engine speed 1,000 rpm or more.
    - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
15. Turn the ignition switch OFF, and repeat the test-drive instep 14.

16. Check for DTCs with the HDS.

    Is DTC P0733 indicated?

    YES -Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4.

    NO -Go to step 17.

17. Monitor the OBD STATUS for P0733 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0734: PROBLEM IN 4TH CLUTCH AND 4TH CLUTCH HYDRAULIC CIRCUIT (4TH GEAR INCORRECT GEAR RATIO)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

    Does the strainer have metal debris or excessive clutch material?

    YES -Replace the transmission, then go to step 12.

    NO -Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

    Is the line pressure within service limits?

    YES -Go to step 5.

    NO -Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 12.

5. Measure the 4th clutch pressure (see **PRESSURE TEST**).

   Is the 4th clutch pressure within service limits?

   YES -Go to step 6.

   NO -Shift valve B, shift valve C, the servo control valve, and the servo valve are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 12.

6. Turn the ignition switch ON (II).
7. Clear the DTC with the HDS.
8. Test-drive under these conditions:
   - D position in 4th gear.
   - Engine speed 1,000 rpm or more.
   - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
9. Turn the ignition switch OFF, and repeat the test-drive in step 8.
10. Check for DTCs with the HDS.

    Is DTC P0734 indicated?

    YES -Repair the 4th clutch, or replace the transmission, then go to step 12.

    NO -Go to step 11.

11. Monitor the OBD STATUS for P0734 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Intermittent failure, the system is OK at this time. If any other DTCs were indicated in step 10, go to the indicated DTCs troubleshooting.

    NO -If the screen indicated FAILED, repair the 4th clutch, or replace the transmission. If the screen indicates NOT COMPLETED, go to step 8.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive under these conditions:
    - D position in 4th gear.
    - Engine speed 1,000 rpm or more.
    - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
15. Turn the ignition switch OFF, and repeat the test-drive in step 14.
16. Check for DTCs with the HDS.

Is DTC P0734 indicated?

YES -Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4.

NO -Go to step 17.

17. Monitor the OBD STATUS for P0734 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0735: PROBLEM IN 5TH CLUTCH AND 5TH CLUTCH HYDRAULIC CIRCUIT (5TH GEAR INCORRECT RATIO)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 12.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within service limits?

   YES -Go to step 5.

   NO -Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 12.

5. Measure the 5th clutch pressure (see **PRESSURE TEST**).

Is the 5th clutch pressure within service limits?

YES -Go to step 6.

NO -Shift valves A, B, and/or D are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 12.

6. Turn the ignition switch ON (II).
7. Clear the DTC with the HDS.
8. Test-drive under these conditions:
   - D position in 5th gear.
   - Engine speed 1,000 rpm or more.
   - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
9. Turn the ignition switch OFF, and repeat the test-drive in step 8.
10. Check for DTCs with the HDS.

Is DTC P0735 indicated?

YES -Repair the 5th clutch, or replace the transmission, then go to step 12.

NO -Go to step 11.

11. Monitor the OBD STATUS for P0735 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Intermittent failure, the system is OK at this time. If any other DTCs were indicated in step 10, go to the indicated DTCs troubleshooting.

NO -If the screen indicated FAILED, repair the 5th clutch, or replace the transmission. If the screen indicates NOT COMPLETED, go to step 8.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive under these conditions:
    - D position in 5th gear.
    - Engine speed 1,000 rpm or more.
    - Drive the vehicle at speeds over 7 mph (12 km/h) for at least 12 seconds.
15. Turn the ignition switch OFF, and repeat the test-drive instep 14.
16. Check for DTCs with the HDS.

Is DTC P0735 indicated?

YES -Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4.

NO -Go to step 17.

17. Monitor the OBD STATUS for P0735 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor and the PCM, then go to step 4. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0741: TORQUE CONVERTER CLUTCH HYDRAULIC CIRCUIT STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 13.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Select Shift Solenoid E in Miscellaneous Test Menu, and check that shift solenoid valve E operates with the HDS.

   Is a clicking sound heard?

   YES -Go to step 7.

   NO -Replace shift solenoid valve E (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 12.

7. Run the engine until the ECT SENSOR value reaches 176°F (80°C).
8. Select Clutch Pressure Control (Linear) Solenoid A in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

   Does the screen indicate NORMAL?

   YES -Go to step 9.

   NO -Follow instructions indicated on the HDS by the test result. Go to step 12 if any part was replaced.

9. Test-drive the vehicle at a constant speed of 60 mph (96 km/h) for at least 20 seconds.
10. Turn the ignition switch OFF, and repeat the test-drive in step 9.
11. Monitor the OBD STATUS for P0741 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Repair the faulty torque converter clutch mechanism, the torque converter clutch hydraulic circuit, the lock-up shift valve, or the lock-up control valve, or replace the transmission, then go to step 13.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 9.

12. Reconnect all connectors.
13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Test-drive the vehicle at a constant speed of 60 mph (96 km/h) for at least 20 seconds.
16. Turn the ignition switch OFF, and repeat the test-drive in step 15.
17. Check for DTCs with the HDS.

    Is DTC P0741 indicated?

    YES -Go to step 5.

    NO -Go to step 18.

18. Monitor the OBD STATUS for P0741 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 17, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 5. If the screen indicates NOT COMPLETED, go to step 15.

DTC P0747: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A STUCK ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 12.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0747 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Clutch Pressure Control (Linear) Solenoid A in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

    Does the screen indicate NORMAL?

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

    NO -Follow instructions indicated on the HDS by the test result, but the tester has not determined the cause of the failure, go to step 11. If any part was replaced, go to step 12.

11. Inspect A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A TEST**).

    Does A/T clutch pressure control solenoid valve A work properly?

YES -Repair the hydraulic system related with shift valves B and E, or replace the transmission, then go to step 12.

NO -Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A REPLACEMENT**), then go to step 12.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive the vehicle in the D position through all five gears.
15. Turn the ignition switch OFF, and repeat the test-drive in step 14.
16. Check for DTCs with the HDS.

Is DTC P0747 indicated?

YES -Go to step 9.

NO -Go to step 17.

17. Monitor the OBD STATUS for P0747 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0752: SHIFT SOLENOID VALVE A STUCK ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES -Replace the transmission, then go to step 14.

NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0752 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid A in Miscellaneous Test Menu, and check that shift solenoid valve A operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 11.

    NO -Replace shift solenoid valve A (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 14.

11. Test-drive the vehicle in the D position through all five gears.
12. Turn the ignition switch OFF, and repeat the test-drive instep 11.
13. Monitor the OBD STATUS for P0752 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Repair shift valve A, or replace the transmission, then go to step 14.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 11.

14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.
16. Test-drive the vehicle in the D position through all five gears.
17. Turn the ignition switch OFF, and repeat the test-drive instep 16.
18. Check for DTCs with the HDS.

    Is DTC P0752 indicated?

    YES -Go to step 9.

NO -Go to step 19.

19. Monitor the OBD STATUS for P0752 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 16.

DTC P0756: SHIFT SOLENOID VALVE B STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0756 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid B in Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

Is a clicking sound heard?

YES -Go to step 11.

NO -Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 14.

11. Test-drive the vehicle in the D position through all five gears.
12. Turn the ignition switch OFF, and repeat the test-drive instep 11.
13. Monitor the OBD STATUS for P0756 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES -Repair shift valve B, or replace the transmission, then go to step 14.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 11.

14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.
16. Test-drive the vehicle in the D position through all five gears.
17. Turn the ignition switch OFF, and repeat the test-drive instep 16.
18. Check for DTCs with the HDS.

Is DTC P0756 indicated?

YES -Go to step 9.

NO -Go to step 19.

19. Monitor the OBD STATUS for P0756 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 16.

DTC P0757: SHIFT SOLENOID VALVE B STUCK ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?.

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0757 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid B in Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 11.

    NO -Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 14.

11. Test-drive the vehicle in the D position through all five gears.
12. Turn the ignition switch OFF, and repeat the test-drive instep 11.
13. Monitor the OBD STATUS for P0757 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Repair shift valve B, or replace the transmission, then go to step 14.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen

indicates NOT COMPLETED, go to step 11.

14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.
16. Test-drive the vehicle in the D position through all five gears.
17. Turn the ignition switch OFF, and repeat the test-drive instep 16.
18. Check for DTCs with the HDS.

    Is DTC P0757 Indicated?

    YES -Go to step 9.

    NO -Go to step 19.

19. Monitor the OBD STATUS for P0757 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 16.

DTC P0761: SHIFT SOLENOID VALVE C STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.

7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0761 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid C in Miscellaneous Test Menu, and check that shift solenoid valve C operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 11.

    NO -Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 14.

11. Test-drive the vehicle in the D position through all five gears.
12. Turn the ignition switch OFF, and repeat the test-drive instep 11.
13. Monitor the OBD STATUS for P0761 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Repair shift valve C, or replace the transmission, then go to step 14.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 11.

14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.
16. Test-drive the vehicle in the D position through all five gears.
17. Turn the ignition switch OFF, and repeat the test-drive in step 16.
18. Check for DTCs with the HDS.

    Is DTC P0761 indicated?

    YES -Go to step 9.

    NO -Go to step 19.

19. Monitor the OBD STATUS for P0761 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 16.

DTC P0771: SHIFT SOLENOID VALVE E STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0771 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid E in Miscellaneous Test Menu, and check that shift solenoid valve E operates with the HDS.

Is a clicking sound heard?

YES -Go to step 11.

NO -Replace shift solenoid valve E (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 14.

11. Test-drive the vehicle in the D position through all five gears.
12. Turn the ignition switch OFF, and repeat the test-drive in step 11.
13. Monitor the OBD STATUS for P0771 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES -Repair shift valve E, or replace the transmission, then go to step 14.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 11.

14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.
16. Test-drive the vehicle in the D position through all five gears at speeds over 19 mph (30 km/h) for at least 20 seconds.
17. Turn the ignition switch OFF, and repeat the test-drive in step 16.
18. Check for DTCs with the HDS.

Is DTC P0771 indicated?

YES -Go to step 9.

NO -Go to step 19.

19. Monitor the OBD STATUS for P0771 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 16.

DTC P0776: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL

TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0776 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Clutch Pressure Control (Linear) Solenoid B in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

    Does the screen indicate NORMAL?

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

    NO -Follow instructions indicated on the HDS by the test result, but the tester has not determined the cause of the failure, go to step 11. If any part was replaced, go to step 12.

11. Inspect A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B TEST**).

    Does A/T clutch pressure control solenoid valve B work properly?

    YES -Repair the hydraulic system related with shift valve B, or replace the transmission, then go to step 12.

NO -Replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 12.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive the vehicle in the D position through all five gears.
15. Turn the ignition switch OFF, and repeat the test-drive in step 14.
16. Check for DTCs with the HDS.

    Is DTC P0776 indicated?

    YES -Go to step 9.

    NO -Go to step 17.

17. Monitor the OBD STATUS for P0776 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0777: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B STUCK ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.

6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0777 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Clutch Pressure Control (Linear) Solenoid B in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

    Does the screen indicate NORMAL?

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

    NO -Follow instructions indicated on the HDS by the test result, but the tester has not determined the cause of the failure, go to step 11. If any part was replaced, go to step 12.

11. Inspect A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B TEST**).

    Does A/T clutch pressure control solenoid valve B work properly?

    YES -Repair the hydraulic system related with shift valve B, or replace the transmission, then go to step 12.

    NO -Replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 12.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive the vehicle in the D position through all five gears.
15. Turn the ignition switch OFF, and repeat the test-drive in step 14.
16. Check for DTCs with the HDS.

    Is DTC P0777 indicated?

    YES -Go to step 9.

    NO -Go to step 17.

17. Monitor the OBD STATUS for P0777 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0780: SHIFT CONTROL SYSTEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is stored whenever DTCs P1730, P1731, P1732, P1733, P1734 are detected.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle under the conditions for the DTCs indicated simultaneously with DTC P0780.
4. Turn the ignition switch OFF, and repeat the test-drive in step 3.
5. Check for other DTCs indicated simultaneously with DTC P0780.

    NOTE: DTC P0780 means there is one or more A/T DTCs regarding the shift control system.

    Are there other DTCs?

    YES -Go to the indicated DTCs troubleshooting.

    - P1730 (see **DTC P1730: PROBLEM IN SHIFT CONTROL SYSTEM:**)
    - P1731 (see **DTC P1731: PROBLEM IN SHIFT CONTROL SYSTEM:**)
    - P1732 (see **DTC P1732: PROBLEM IN SHIFT CONTROL SYSTEM:**)
    - P1733 (see **DTC P1733: PROBLEM IN SHIFT CONTROL SYSTEM:**)
    - P1734 (see **DTC P1734: PROBLEM IN SHIFT CONTROL SYSTEM:**)

    NO -Go to step 6.

6. Update the PCM if it does not have latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
7. Test-drive the vehicle under the conditions for the DTCs indicated simultaneously with DTC P0780.
8. Turn the ignition switch OFF, and repeat the test-drive in step 7.

9. Check for DTC with the HDS.

   Is DTC P0780 indicated?

   YES -If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 7. If the PCM was substituted, go to step 1.

   NO -Go to step 10.

10. Monitor the OBD STATUS for P0780 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 9, go to the indicated DTCs troubleshooting.

    NO -If the PCM was updated and screen indicates FAILED, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 1. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 7.

DTC P0796: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0796 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

YES -Go to step 9.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Clutch Pressure Control (Linear) Solenoid C in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

    Does the screen indicate NORMAL?

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

    NO -Follow instructions indicated on the HDS by the test result, but the tester has not determined the cause of the failure, go to step 11. If any part was replaced, go to step 12.

11. Inspect A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C TEST**).

    Does A/T clutch pressure control solenoid valve C work properly?

    YES -Repair the hydraulic system related with shift valves B and C, or replace the transmission, then go to step 12.

    NO -Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 12.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive the vehicle in the D position through all five gears.
15. Turn the ignition switch OFF, and repeat the test-drive instep 14.
16. Check for DTCs with the HDS.

    Is DTC P0796 indicated?

    YES -Go to step 9.

    NO -Go to step 17.

17. Monitor the OBD STATUS for P0796 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0797: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0797 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Clutch Pressure Control (Linear) Solenoid C in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

    Does the screen indicate NORMAL?

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

    NO -Follow instructions indicated on the HDS by the test result, but the tester has not determined the cause of the failure, go to step 11. If any part was replaced, go to step 12.

11. Inspect A/T clutch pressure control solenoid valve C(see **A/T CLUTCH PRESSURE CONTROL**

SOLENOID VALVE C TEST).

Does A/T clutch pressure control solenoid valve C work properly?

YES -Repair the hydraulic system related with shift valves B and C, or replace the transmission, then go to step 12.

NO -Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 12.

12. Turn the ignition switch ON (II).
13. Clear the DTC with the HDS.
14. Test-drive the vehicle in the D position through all five gears.
15. Turn the ignition switch OFF, and repeat the test-drive in step 14.
16. Check for DTCs with the HDS.

Is DTC P0797 indicated?

YES -Go to step 9.

NO -Go to step 17.

17. Monitor the OBD STATUS for P0797 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0842: SHORT IN 2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR 2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check the 2nd PRESSURE SWITCH in the DATA LIST with the HDS when not in 2nd gear.

Is the 2nd PRESSURE SWITCH OFF?

YES -Go to step 4.

NO -Go to step 8.

4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
5. Drive the vehicle in 4th gear in the D position for at least 2 seconds.
6. Turn the ignition switch OFF, and repeat the test-drive in step 5.
7. Monitor the OBD STATUS for P0842 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES -Go to step 8.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the wire between the 2nd clutch transmission fluid pressure switch and the PCM. If the screen indicates NOT COMPLETED, go to step 3.

8. Turn the ignition switch OFF.
9. Disconnect the 2nd clutch transmission fluid pressure switch connector.
10. Turn the ignition switch ON (II).
11. Check the 2nd PRESSURE SWITCH in the DATA LIST with the HDS.

Is the 2nd PRESSURE SWITCH OFF?

YES -Replace the 2nd clutch transmission fluid pressure switch (see **2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT**), then go to step 16.

NO -Go to step 12.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector C (22P).
15. Check for continuity between PCM connector terminal C13 and body ground.

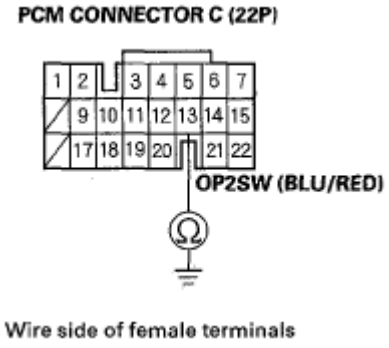


Fig. 119: Checking Continuity Between PCM Connector Terminal C13 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C13 and the 2nd clutch transmission fluid pressure switch, then go to step 16.

NO -Go to step 23.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.
19. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
20. Drive the vehicle in 2nd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
21. Turn the ignition switch OFF, and repeat the test-drive in step 20.
22. Check for DTCs with the HDS.

Is DTC P0842 indicated?

YES -Check for intermittent short to body ground in the wire between the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO -Go to step 23.

23. Monitor the OBD STATUS for P0842 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 22, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the screen indicates NOT

COMPLETED, go to step 19.

24. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
25. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
26. Drive the vehicle in 2nd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
27. Turn the ignition switch OFF, and repeat the test-drive in step 26.
28. Check for DTCs with the HDS.

    Is DTC P0842 indicated?

    YES -Check for intermittent short to body ground in the wire between the 2nd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 25. If the PCM was substituted, go to step 1.

    NO -Go to step 29.

29. Monitor the OBD STATUS for P0842 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 28, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the 2nd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 25. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 25.

DTC P0843: OPEN IN 2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR 2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
4. Shift into the 2 position while pressing the brake pedal, and check that the SHIFT COMMAND indicates

2nd in the DATA LIST with the HDS.

5. Check the 2nd PRESSURE SWITCH in the DATA LIST with the HDS.

   Is the 2nd PRESSURE SWITCH ON?

   YES -Go to step 6.

   NO -Go to step 9.

6. Drive the vehicle in 2nd gear in the D position for at least 2 seconds.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P0843 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the 2nd clutch transmission fluid pressure switch and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

9. Turn the ignition switch OFF.
10. Disconnect the 2nd clutch transmission fluid pressure switch connector.
11. Turn the ignition switch ON (II).
12. Measure the voltage between the 2nd clutch transmission fluid pressure switch connector terminal and body ground.

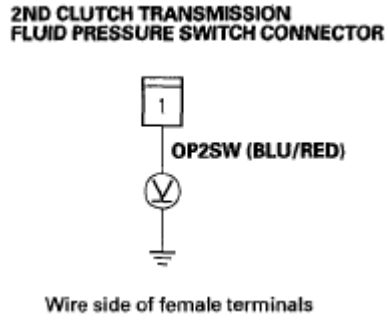


Fig. 120: Measuring Voltage Between 2nd Clutch Transmission Fluid Pressure Switch Connector Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Replace the 2nd clutch transmission fluid pressure switch (see **2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT**), then go to step 14.

NO -Go to step 13.

13. Measure the voltage between PCM connector terminal C13 and body ground.

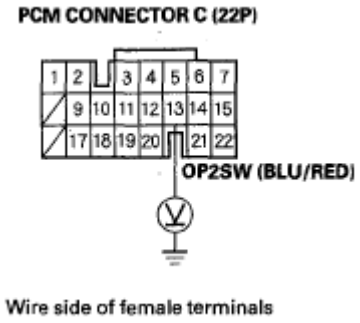


Fig. 121: Measuring Voltage Between PCM Connector Terminal C13 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Repair open in the wire between PCM connector terminal C13 and the 2nd clutch transmission fluid pressure switch, then go to step 14.

NO -Go to step 22.

14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Clear the DTC with the HDS.
17. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
18. Drive the vehicle in 2nd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
19. Turn the ignition switch OFF, and repeat the test-drive in step 18.
20. Check for DTCs with the HDS.

Is DTC P0843 indicated?

YES -Check for poor connections or loose terminals between the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0843 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated

DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 17.

22. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
24. Drive the vehicle in 2nd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
25. Turn the ignition switch OFF, and repeat the test-drive in step 24.
26. Check for DTCs with the HDS.

    Is DTC P0843 indicated?

    YES -Check for poor connections or loose terminals between the 2nd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

    NO -Go to step 27.

27. Monitor the OBD STATUS for P0843 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 26, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the 2nd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

DTC P0847: SHORT IN 3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR 3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).

2. Clear the DTC with the HDS.
3. Check the 3rd PRESSURE SWITCH in the DATA LIST with the HDS when not in 3rd gear.

   Is the 3rd PRESSURE SWITCH ON?

   YES -Go to step 4.

   NO -Go to step 7.

4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
5. Drive the vehicle in 4th gear in the D position for at least 2 seconds.
6. Monitor the OBD STATUS for P0847 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 5.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground between the 3rd clutch transmission fluid pressure switch and the PCM. If the tester indicates NOT COMPLETED, go to step 3.

7. Turn the ignition switch OFF.
8. Disconnect the 3rd clutch transmission fluid pressure switch connector.
9. Turn the ignition switch ON (II).
10. Check the 3rd PRESSURE SWITCH in the DATA LIST with the HDS.

    Is the 3rd PRESSURE SWITCH OFF?

    YES -Replace the 3rd clutch transmission fluid pressure switch (see **2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT**), then go to step 15.

    NO -Go to step 11.

11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (22P).
14. Check for continuity between PCM connector terminal C10 and body ground.

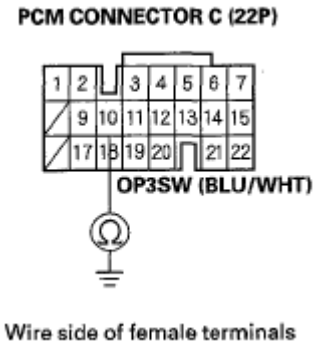


Fig. 122: Checking Continuity Between PCM Connector Terminal C10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C10 and the 3rd clutch transmission fluid pressure switch, then go to step 15.

NO -Go to step 22.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
19. Drive the vehicle in 3rd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
20. Check for DTCs with the HDS.

Is DTC P0847 indicated?

YES -Check for intermittent short to body ground in the wire between the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0847 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTC's troubleshooting.

NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

22. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
24. Drive the vehicle in 3rd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
25. Check for DTCs with the HDS.

    Is DTC P0847 indicated?

    YES -Check for intermittent short to body ground in the wire between the 3rd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

    NO -Go to step 26.

26. Monitor the OBD STATUS for P0847 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 25, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between the 3rd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

DTC P0848: OPEN IN 3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR 3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
4. Drive the vehicle in the 3rd gear in the D position D3 driving mode (press the D3 switch), and check that the SHIFT COMMAND indicates 3rd in the DATA LIST with the HDS.
5. Check the 3rd PRESSURE SWITCH in the DATA LIST with the HDS.

Is the 3rd PRESSURE SWITCH ON?

YES -Go to step 6.

NO -Go to step 8.

6. Drive the vehicle in 3rd gear in the D position for at least 2 seconds.
7. Monitor the OBD STATUS for P0848 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES -Go to step 8.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the 3rd clutch transmission fluid pressure switch and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Disconnect the 3rd clutch transmission fluid pressure switch connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the 3rd clutch transmission fluid pressure switch connector terminal and body ground.

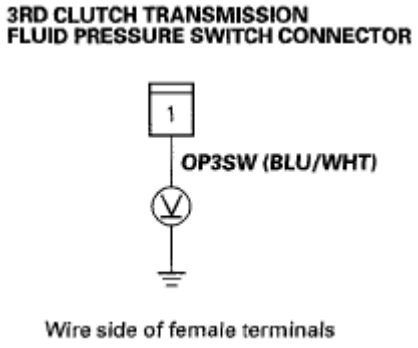


Fig. 123: Measuring Voltage Between 3rd Clutch Transmission Fluid Pressure Switch Connector Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Replace the 3rd clutch transmission fluid pressure switch (see **2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT**), then go to step 13.

NO -Go to step 12.

12. Measure the voltage between PCM connector terminal G10 and body ground.

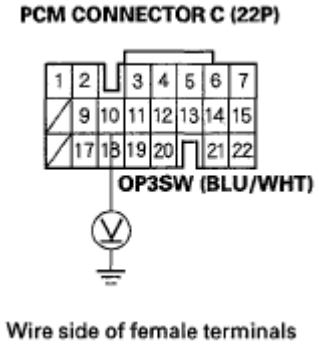


Fig. 124: Measuring Voltage Between PCM Connector Terminal G10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Repair open in the wire between PCM connector terminal C10 and the 3rd clutch transmission fluid pressure switch, then go to step 13.

NO -Go to step 20.

13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.
16. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
17. Drive the vehicle in 3rd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
18. Check for DTCs with the HDS.

    Is DTC P0848 indicated?

    YES -Check for poor connections or loose terminals between the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1.

    NO -Go to step 19.

19. Monitor the OBD STATUS for P0848 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 16.

20. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
21. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
22. Drive the vehicle in 3rd gear in the D position for at least 2 seconds, then drive in 4th gear for at least 2 seconds.
23. Check for DTCs with the HDS.

    Is DTC P0848 indicated?

    YES -Check for poor connections or loose terminals between the 3rd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1.

    NO -Go to step 24.

24. Monitor the OBD STATUS for P0848 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the 3rd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 21.

DTC P0962: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0962 indicated?

   YES -Go to step 8.

NO -Go to step 5.

5. Select Clutch Pressure Control Solenoid Control in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

   Does the screen indicate NORMAL?

   YES -Go to step 6.

   NO -Go to step 8.

6. Command A/T clutch pressure control solenoid valve A at 1.0 A in Clutch Pressure Control Solenoid Control menu.
7. Monitor the OBD STATUS for P0962 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Disconnect the A/T clutch pressure control solenoid valve A connector.
10. Measure the resistance between A/T clutch pressure control solenoid valve A connector terminals No. 1 and No. 2.

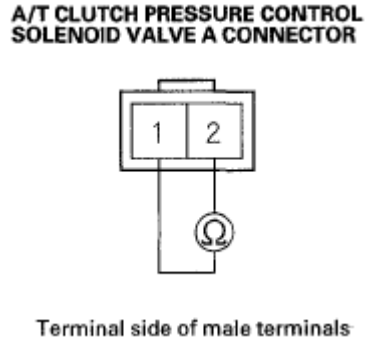


Fig. 125: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3-10 ohms

YES -Go to step 11.

NO -Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A REPLACEMENT**), then go to step 14.

11. Check for continuity between A/T clutch pressure control solenoid valve A connector terminal No. 2 and body ground.

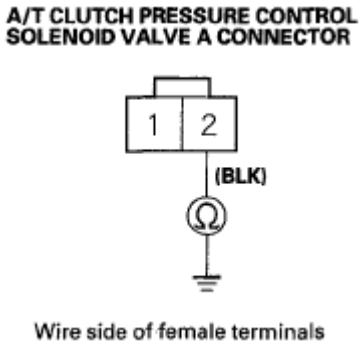


Fig. 126: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair open in the wire between A/T clutch pressure control solenoid valve A and ground (G101) (see **ENGINE WIRE HARNESS**), or repair poor ground (G101), then go to step 14.

12. Turn the ignition switch ON (II).
13. Measure the voltage between A/T clutch pressure control solenoid valve A connector terminals No. 1 and No. 2.

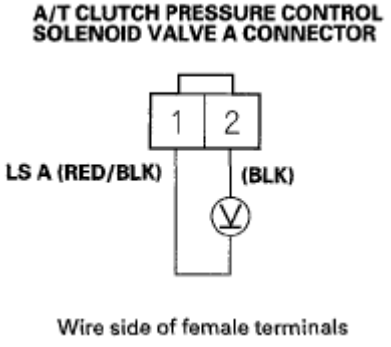


Fig. 127: Measuring Voltage Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 11 V as the ignition switch is turned to the ON (II) position?

YES -Go to step 20.

NO -Repair open or short to body ground in the wire between PCM connector terminal C1 and A/T clutch pressure control solenoid valve A, then go to step 14.

14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Clear the DTC with the HDS.
17. Start the engine, and wait for at least 1 second.
18. Check for DTCs with the HDS.

    Is DTC P0962 indicated?

    YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM, then go to step 1.

    NO -Go to step 19.

19. Monitor the OBD STATUS for P0962 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated instep 18, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 17.

20. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
21. Start the engine, and wait for at least 1 second.
22. Check for DTCs with the HDS.

    Is DTC P0962 indicated?

    YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1.

    NO -Go to step 23.

23. Monitor the OBD STATUS for P0962 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 22, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 21.

DTC P0963: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0963 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Clutch Pressure Control Solenoid Control in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

   Does the screen indicate NORMAL?

   YES -Go to step 6.

   NO -Go to step 8.

6. Command A/T clutch pressure control solenoid valve A at 0.2 A in Clutch Pressure Control Solenoid Control menu.
7. Monitor the OBD STATUS for P0963 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Disconnect the A/T clutch pressure control solenoid valve A connector.
10. Measure the resistance between A/T clutch pressure control solenoid valve A connector terminals No. 1 and No. 2.

Fig. 128: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3-10 ohms?

YES -Go to step 11.

NO -Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A REPLACEMENT**), then go to step 12.

11. Check for continuity between A/T clutch pressure control solenoid valve A connector terminal No. 2 and body ground.

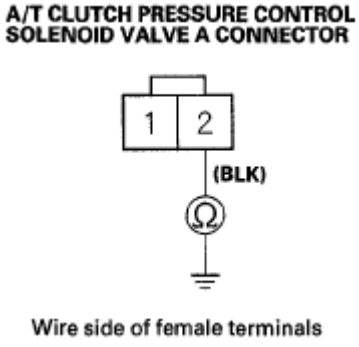


Fig. 129: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair open in the wire between A/T clutch pressure control solenoid valve A and ground (G101) (see **ENGINE WIRE HARNESS**), or repair poor ground (G101), then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Start the engine, and wait for at least 1 second.
16. Check for DTCs with the HDS.

Is DTC P0963 indicated?

YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM, then go to step 1.

NO -Go to step 17.

17. Monitor the OBD STATUS for P0963 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 15.

18. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
19. Start the engine, and wait for at least 1 second.
20. Check for DTCs with the HDS.

Is DTC P0963 indicated?

YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0963 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

DTC P0966: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0966 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Clutch Pressure Control Solenoid Control in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

   Does the screen indicate NORMAL?

   YES -Go to step 6.

   NO -Go to step 8.

6. Command A/T clutch pressure control solenoid valve B at 1.0 A in Clutch Pressure Control Solenoid Control menu.
7. Monitor the OBD STATUS for P0966 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

YES -Go to step 8.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Disconnect the A/T clutch pressure control solenoid valve B connector.
10. Measure the resistance between A/T clutch pressure control solenoid valve B connector terminals No. 1 and No. 2.

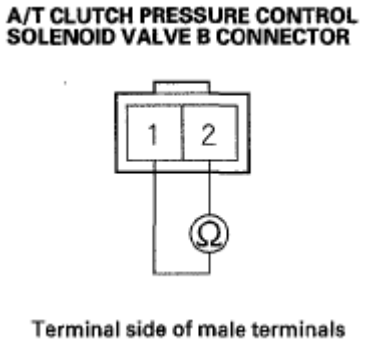


Fig. 130: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3-10 ohms?

YES -Go to step 11.

NO -Replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 14.

11. Check for continuity between A/T clutch pressure control solenoid valve B connector terminal No. 2 and body ground.

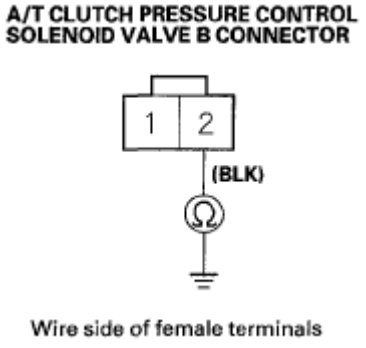


Fig. 131: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve Connector

Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair open in the wire between A/T clutch pressure control solenoid valve B and ground (G101) (see **ENGINE WIRE HARNESS**), or repair poor ground (G101), then go to step 14.

12. Turn the ignition switch ON (II).
13. Measure the voltage between A/T clutch pressure control solenoid valve B connector terminals No. 1 and No. 2.

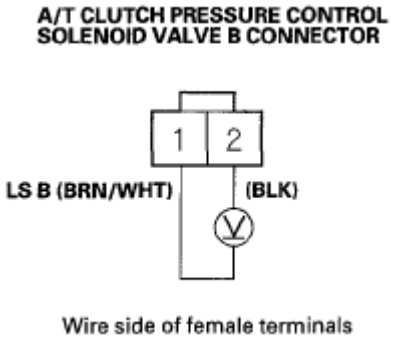


Fig. 132: Measuring Voltage Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 11 V as the ignition switch is turned to the ON (II) position?

YES -Go to step 20.

NO -Repair open or short to body ground in the wire between PCM connector terminal C15 and A/T clutch pressure control solenoid valve B, then go to step 14.

14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Clear the DTC with the HDS.
17. Start the engine, and wait for at least 1 second.
18. Check for DTCs with the HDS.

Is DTC P0966 indicated?

YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM, then go to step 1.

NO -Go to step 19.

19. Monitor the OBD STATUS for P0966 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 17.

20. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
21. Start the engine, and wait for at least 1 second.
22. Check for DTCs with the HDS.

    Is DTC P0966 indicated?

    YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1.

    NO -Go to step 23.

23. Monitor the OBD STATUS for P0966 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 22, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 21.

DTC P0967: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused**

by a mechanical problem in the transmission.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0967 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Clutch Pressure Control Solenoid Control in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

   Does the screen indicate NORMAL?

   YES -Go to step 6.

   NO -Go to step 8.

6. Command A/T clutch pressure control solenoid valve B at 0.2 A in Clutch Pressure Control Solenoid Control menu.
7. Monitor the OBD STATUS for P0967 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Disconnect the A/T clutch pressure control solenoid valve B connector.
10. Measure the resistance between A/T clutch pressure control solenoid valve B connector terminals No. 1 and No. 2.

Fig. 133: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3-10 ohms?

YES -Go to step 11.

NO -Replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 12.

11. Check for continuity between A/T clutch pressure control solenoid valve B connector terminal No. 2 and body ground.

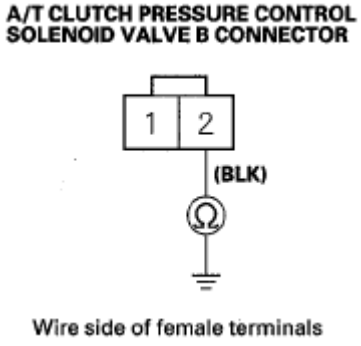


Fig. 134: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair open in the wire between A/T clutch pressure control solenoid valve B and ground (G101) (see **ENGINE WIRE HARNESS**), or repair poor ground (G101),then go to step 12.

12. Reconnect all connectors.

13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Start the engine, and wait for at least 1 second.
16. Check for DTCs with the HDS.

    Is DTC P0967 indicated?

    YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM, then go to step 1.

    NO -Go to step 17.

17. Monitor the OBD STATUS for P0967 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 15.

18. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
19. Start the engine, and wait for at least 1 second.
20. Check for DTCs with the HDS.

    Is DTC P0967 indicated?

    YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1.

    NO -Go to step 21.

21. Monitor the OBD STATUS for P0967 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 20, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch

pressure control solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

DTC P0970: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0970 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Clutch Pressure Control Solenoid Control in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

   Does the screen indicate NORMAL?

   YES -Go to step 6.

   NO -Go to step 8.

6. Command A/T clutch pressure control solenoid valve Cat 1.0 A in Clutch Pressure Control Solenoid Control menu.
7. Monitor the OBD STATUS for P0970 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.

9. Disconnect the A/T clutch pressure control solenoid valve C connector.
10. Measure the resistance between A/T clutch pressure control solenoid valve C connector terminals No. 1 and No. 2.

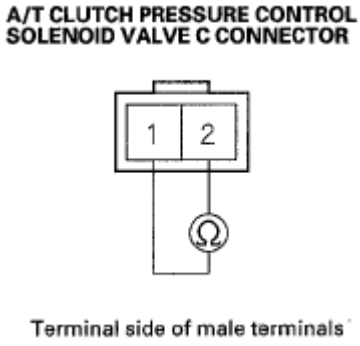


Fig. 135: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3-10 ohms?

YES -Go to step 11.

NO -Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 14.

11. Check for continuity between A/T clutch pressure control solenoid valve C connector terminal No. 2 and body ground.

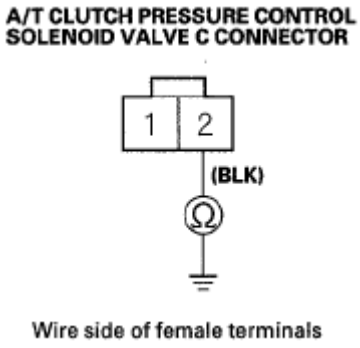


Fig. 136: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair open in the wire between A/T clutch pressure control solenoid valve C and ground (G101) (see **ENGINE WIRE HARNESS**), or repair poor ground (G101), then go to step 14.

12. Turn the ignition switch ON (II).
13. Measure the voltage between A/T clutch pressure control solenoid valve C connector terminals No. 1 and No. 2.

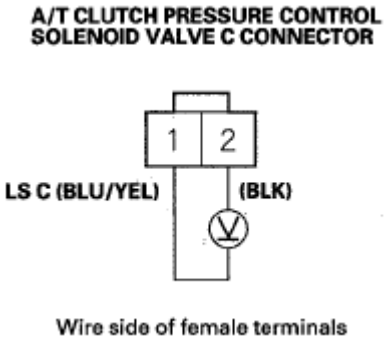


Fig. 137: Measuring Voltage Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 11 V as the ignition switch is turned to the ON (II) position?

YES -Go to step 20.

NO -Repair open or short to body ground in the wire between PCM connector terminal C7 and A/T clutch pressure control solenoid valve C, then go to step 14.

14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Clear the DTC with the HDS.
17. Start the engine, and wait for at least 1 second.
18. Check for DTCs with the HDS.

Is DTC P0970 indicated?

YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM, then go to step 1.

NO -Go to step 19.

19. Monitor the OBD STATUS for P0970 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 17.

20. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
21. Start the engine, and wait for at least 1 second.
22. Check for DTCs with the HDS.

    Is DTC P0970 indicated?

    YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1.

    NO -Go to step 23.

23. Monitor the OBD STATUS for P0970 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 22, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 21. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 21.

DTC P0971: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and wait for at least 1 second.
4. Check for DTCs with the HDS.

Is DTC P097 Vindicated?

YES -Go to step 8.

NO -Go to step 5.

5. Select Clutch Pressure Control Solenoid Control in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

   Does the screen indicate NORMAL?

   YES -Go to step 6.

   NO -Go to step 8.

6. Command A/T clutch pressure control solenoid valve C at 0.2 A in Clutch Pressure Control Solenoid Control menu.
7. Monitor the OBD STATUS for P0971 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Disconnect the A/T clutch pressure control solenoid valve C connector.
10. Measure the resistance between A/T clutch pressure control solenoid valve C connector terminals No. 1 and No. 2.

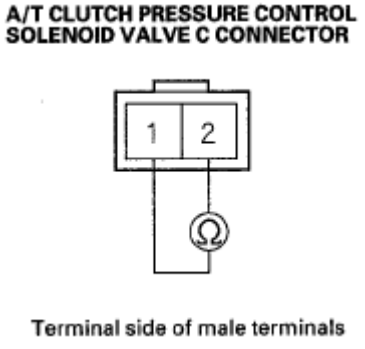


Fig. 138: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3-10 ohms?

YES -Go to step 11.

NO -Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 12.

11. Check for continuity between A/T clutch pressure control solenoid valve C connector terminal No. 2 and body ground.

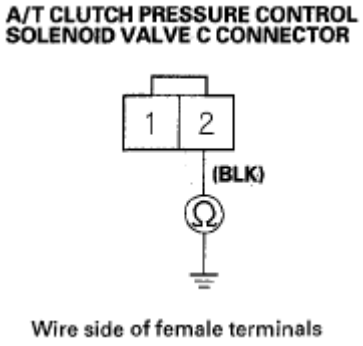


Fig. 139: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair open in the wire between A/T clutch pressure control solenoid valve C and ground (G101) (see **ENGINE WIRE HARNESS**), or repair poor ground (G101), then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Start the engine, and wait for at least 1 second.
16. Check for DTCs with the HDS.

Is DTC P0971 indicated?

YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM, then go to step 1.

NO -Go to step 17.

17. Monitor the OBD STATUS for P0971 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 15.

18. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
19. Start the engine, and wait for at least 1 second.
20. Check for DTCs with the HDS.

Is DTC P0971 indicated?

YES -Check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0971 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between A/T clutch pressure control solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 19. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

DTC P0973: SHORT IN SHIFT SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.

3. Test-drive the vehicle in 1st gear in the D position for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0973 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Shift Solenoid A in Miscellaneous Test Menu, and test shift solenoid valve A with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Test-drive the vehicle in 1st gear in the D position for at least 1 second.
7. Monitor the OBD STATUS for P0973 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the wire between shift solenoid valve A and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C6 and A9.

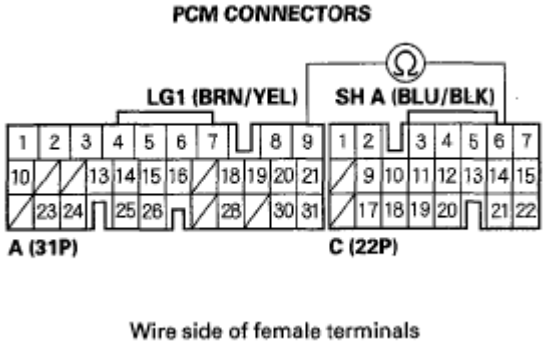


Fig. 140: Measuring Resistance Between PCM Connector Terminals C6 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES -Go to step 12.

NO -Go to step 22.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminals C6 and A9.

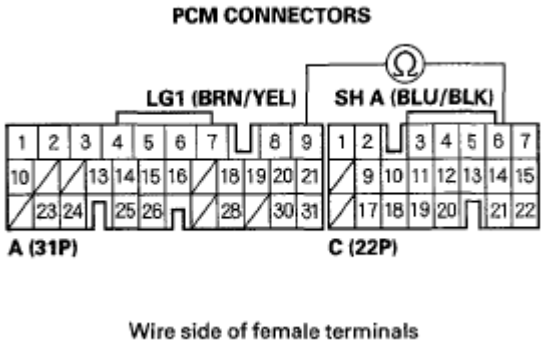


Fig. 141: Checking Continuity Between PCM Connector Terminals C6 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C6 and the shift solenoid harness connector, then go to step 15.

NO -Go to step 14.

14. Inspect shift solenoid valve A and the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

Are shift solenoid valve A and the harness OK?

YES -Go to step 22.

NO -Replace shift solenoid valve A or the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Start the engine in the P position, and wait for at least 1 second.
19. Drive the vehicle in 1st gear in the D position for at least 1 second.
20. Check for DTCs with the HDS.

Is DTC P0973 indicated?

YES -Check for intermittent short to body ground in the wire between shift solenoid valve A and the PCM, then go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0973 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve A and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

22. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine in the P position, and wait for at least 1 second.
24. Drive the vehicle in 1st gear in the D position for at least 1 second.
25. Check for DTCs with the HDS.

    Is DTC P0973 indicated?

    YES -Check for intermittent short to body ground in the wire between shift solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

    NO -Go to step 26.

26. Monitor the OBD STATUS for P0973 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 25, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

DTC P0974: OPEN IN SHIFT SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine in the P position, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0974 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Shift Solenoid A in Miscellaneous Test Menu, and test shift solenoid valve A with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Start the engine in the P position, and wait for at least 1 second.
7. Monitor the OBD STATUS for P0974 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between shift solenoid valve A and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C6 and A9.

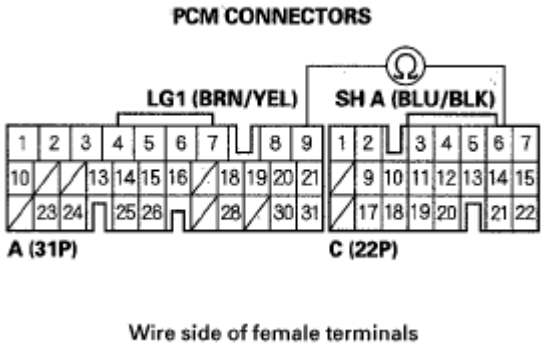


Fig. 142: Measuring Resistance Between PCM Connector Terminals C6 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES -Go to step 23.

NO -Go to step 12.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminal C6 and shift solenoid harness connector terminal No. 5.

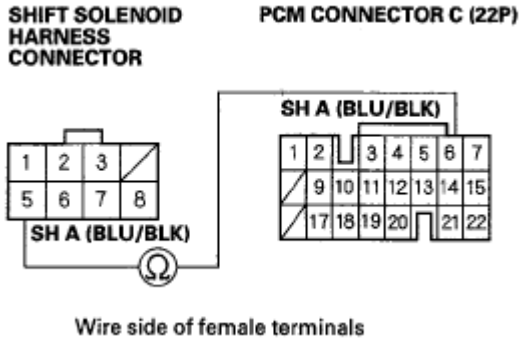


Fig. 143: Checking Continuity Between PCM Connector Terminal C6 And Shift Solenoid Harness Connector Terminal No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 14.

NO -Repair open in the wire between PCM connector terminal C6 and the shift solenoid harness connector, then go to step 16.

14. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

15. Check for continuity between shift solenoid harness connector terminal No. 5 and the shift solenoid valve A connector terminal.

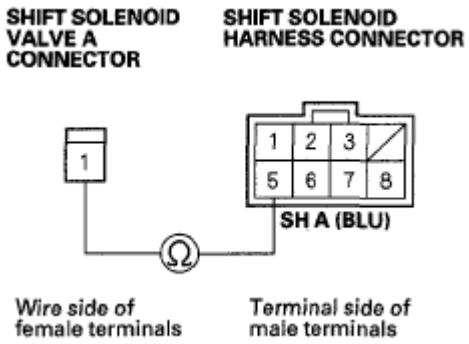


Fig. 144: Checking Continuity Between Shift Solenoid Harness Connector Terminal No. 5 And Shift Solenoid Valve Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace shift solenoid valve A (see **SHIFT SOLENOID VALVE REPLACEMENT**),then go to step 16.

NO -Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.
19. Start the engine in the P position, and wait for at least 1 second.
20. Drive the vehicle in 1st gear in the D position for at least 1 second.
21. Check for DTCs with the HDS.

Is DTC P0974 indicated?

YES -Check for poor connections or loose terminals between shift solenoid valve A and the PCM, then go to step 1.

NO -Go to step 22.

22. Monitor the OBD STATUS for P0974 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 21, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve A and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

23. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
24. Start the engine in the P position, and wait for at least 1 second.
25. Drive the vehicle in 1st gear in the D position for at least 1 second.
26. Check for DTCs with the HDS.

    Is DTC P0974 indicated?

    YES -Check for poor connections or loose terminals between shift solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1.

    NO -Go to step 27.

27. Monitor the OBD STATUS for P0974 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 26, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 24.

DTC P0976: SHORT IN SHIFT SOLENOID VALVE B CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine in the P position, and wait for at least 1 second.
4. Check for DTCs with the HDS.

Is DTC P0976 indicated?

YES -Go to step 8.

NO -Go to step 5.

5. Select Shift Solenoid B in Miscellaneous Test Menu, and test shift solenoid valve B with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Start the engine in the P position, and wait for at least 1 second.
7. Monitor the OBD STATUS for P0976 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the wire between shift solenoid valve B and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C4 and A9.

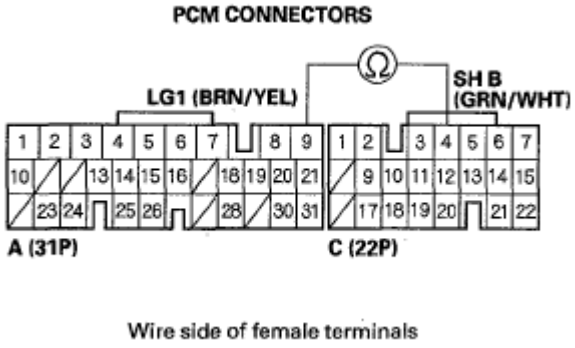


Fig. 145: Measuring Resistance Between PCM Connector Terminals C4 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES -Go to step 12.

NO -Go to step 22.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminals C4 and A9.

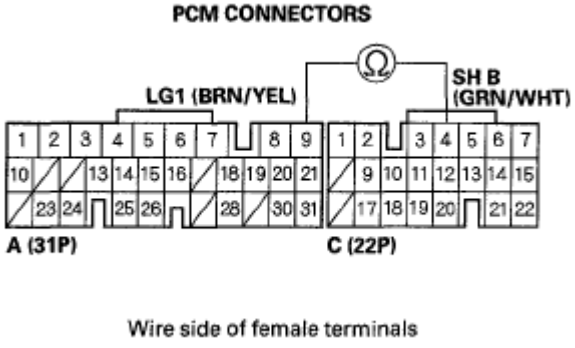


Fig. 146: Checking Continuity Between PCM Connector Terminals C4 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C4 and the shift solenoid harness connector, then go to step 15.

NO -Go to step 14.

14. Inspect shift solenoid valve B and the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

Are shift solenoid valve B and the harness OK?

YES -Go to step 21.

NO -Replace shift solenoid valve B or the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Start the engine in the P position, and wait for at least 1 second.
19. Drive the vehicle in the D position through 1st to 3rd gears, then drive in 3rd gear for at least 1 second.
20. Check for DTCs with the HDS.

Is DTC P0976 indicated?

YES -Check for intermittent short to body ground in the wire between shift solenoid valve B and the PCM, then go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0976 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve B and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

22. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine in the P position, and wait for at least 1 second.
24. Drive the vehicle in the D position through 1st to 3rd gears, then drive in 3rd gear for at least 1 second.
25. Check for DTCs with the HDS.

    Is DTC P0976 indicated?

    YES -Check for intermittent short to body ground in the wire between shift solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

    NO -Go to step 26.

26. Monitor the OBD STATUS for P0976 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 25, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

DTC P0977: OPEN IN SHIFT SOLENOID VALVE B CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in the D position through 1st to 3rd gears, then drive in 3rd gear for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0977 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Shift Solenoid B in Miscellaneous Test Menu, and test shift solenoid valve B with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Test-drive the vehicle in the D position through 1st to 3rd gears, then drive in 3rd gear for at least 1 second.
7. Monitor the OBD STATUS for P0977 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between shift solenoid valve B and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C4 and A9.

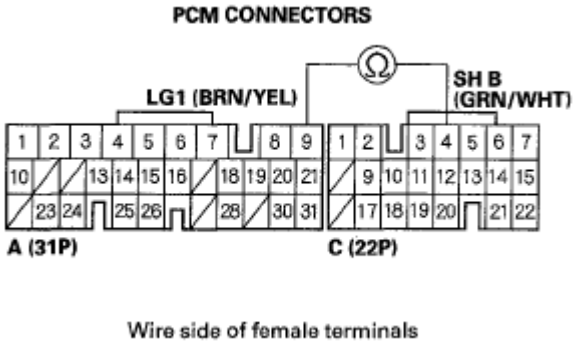


Fig. 147: Measuring Resistance Between PCM Connector Terminals C4 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES -Go to step 23.

NO -Go to step 12.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminal C4 and shift solenoid harness connector terminal No. 2.

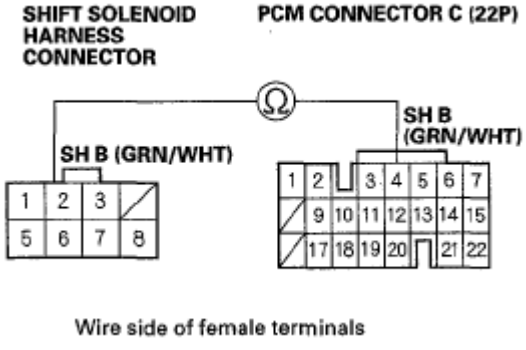


Fig. 148: Checking Continuity Between PCM Connector Terminal C4 And Shift Solenoid Harness Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 14.

NO -Repair open in the wire between PCM connector terminal C4 and the shift solenoid harness connector, then go to step 16.

14. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

15. Check for continuity between shift solenoid harness connector terminal No. 2 and the shift solenoid valve B connector terminal.

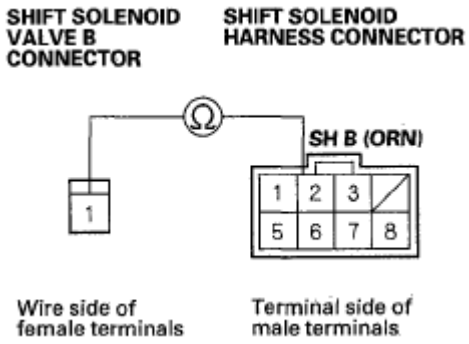


Fig. 149: Checking Continuity Between Shift Solenoid Harness Connector Terminal No. 2 And Shift Solenoid Valve Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

NO -Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**),then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.
19. Start the engine in the P position, and wait for at least 1 second.
20. Drive the vehicle in the D position through 1st to 3rd gears, then drive in 3rd gear for at least 1 second.
21. Check for DTCs with the HDS.

Is DTC P0977 indicated?

YES -Check for poor connections or loose terminals between shift solenoid valve B and the PCM, then go to step 1.

NO -Go to step 22.

22. Monitor the OBD STATUS for P0977 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 21, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve B and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

23. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
24. Start the engine in the P position, and wait for at least 1 second.
25. Drive the vehicle in the D position through 1st to 3rd gears, then drive in 3rd gear for at least 1 second.
26. Check for DTCs with the HDS.

    Is DTC P0977 indicated?

    YES -Check for poor connections or loose terminals between shift solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1.

    NO -Go to step 27.

27. Monitor the OBD STATUS for P0977 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 26, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 24.

DTC P0979: SHORT IN SHIFT SOLENOID VALVE C CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 1st gear in the D position for at least 1 second.
4. Check for DTCs with the HDS.

Is DTC P0979 indicated?

YES -Go to step 8.

NO -Go to step 5.

5. Select Shift Solenoid C in Miscellaneous Test Menu, and test shift solenoid valve C with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Test-drive the vehicle in 1st gear in the D position for at least 1 second.
7. Monitor the OBD STATUS for P0979 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the wire between shift solenoid valve C and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C2 and A9.

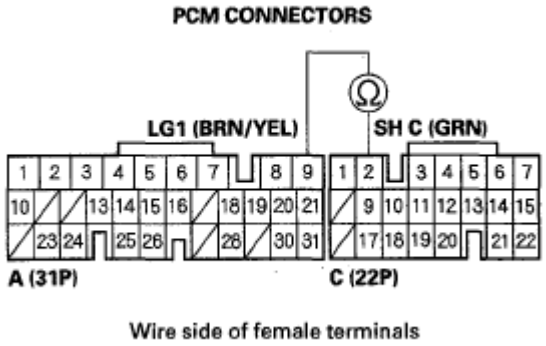


Fig. 150: Measuring Resistance Between PCM Connector Terminals C2 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES -Go to step 12.

NO -Go to step 22.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminals C2 and A9.

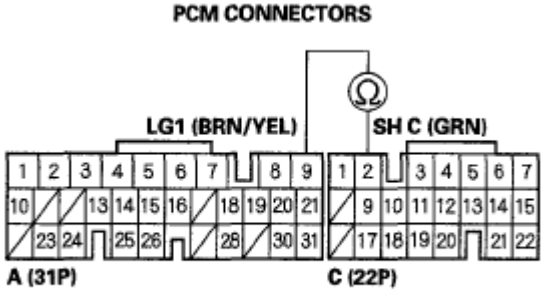


Fig. 151: Checking Continuity Between PCM Connector Terminals C2 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C2 and the shift solenoid harness connector, then go to step 15.

NO -Go to step 14.

14. Inspect shift solenoid valve C and the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

Are shift solenoid valve C and the harness OK?

YES -Go to step 22.

NO -Replace shift solenoid valve C or the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Start the engine in the P position, and wait for at least 1 second.
19. Drive the vehicle in 1st gear in the D position for at least 1 second.
20. Check for DTCs with the HDS.

Is DTC P0979 indicated?

YES -Check for intermittent short to body ground in the wire between shift solenoid valve C and the PCM, then go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0979 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve C and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

22. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine in the P position, and wait for at least 1 second.
24. Drive the vehicle in 1st gear in the D position for at least 1 second.
25. Check for DTCs with the HDS.

    Is DTC P0979 indicated?

    YES -Check for intermittent short to body ground in the wire between shift solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

    NO -Go to step 26.

26. Monitor the OBD STATUS for P0979 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 25, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

DTC P0980: OPEN IN SHIFT SOLENOID VALVE C CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine in the P position, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0980 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Shift Solenoid C in Miscellaneous Test Menu, and test shift solenoid valve C with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Start the engine in the P position, and wait for at least 1 second.
7. Monitor the OBD STATUS for P0980 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between shift solenoid valve C and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C2 and A9.

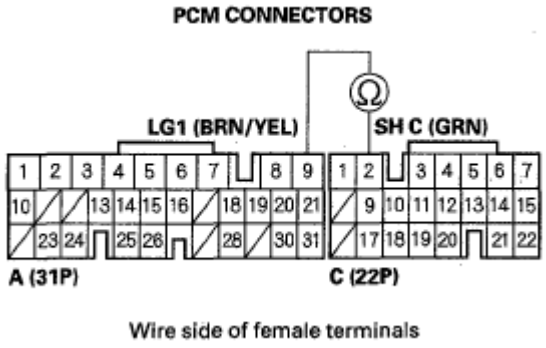


Fig. 152: Measuring Resistance Between PCM Connector Terminals C2 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES -Go to step 23.

NO -Go to step 12.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminal C2 and shift solenoid harness connector terminal No. 1.

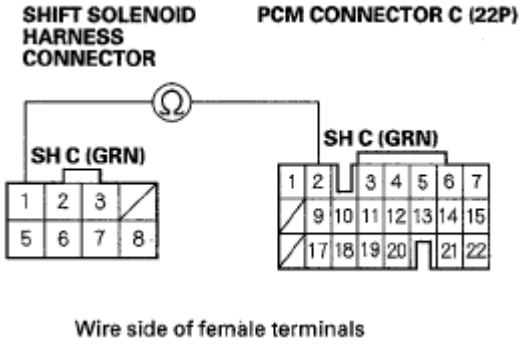


Fig. 153: Checking Continuity Between PCM Connector Terminal C2 And Shift Solenoid Harness Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 14.

NO -Repair open in the wire between PCM connector terminal C2 and the shift solenoid harness connector, then go to step 16.

14. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

15. Check for continuity between shift solenoid harness connector terminal No. 1 and the shift solenoid valve C connector terminal.

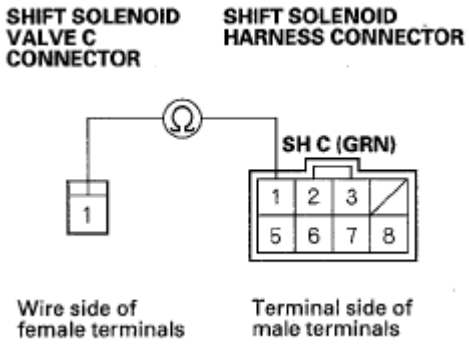


Fig. 154: Checking Continuity Between Shift Solenoid Harness And Shift Solenoid Valve Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

NO -Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.
19. Start the engine in the P position, and wait for at least 1 second.
20. Drive the vehicle in 1st gear in the D position for at least 1 second.
21. Check for DTCs with the HDS.

Is DTC P0980 indicated?

YES -Check for poor connections or loose terminals between shift solenoid valve C and the PCM, then go to step 1.

NO -Go to step 22.

22. Monitor the OBD STATUS for P0980 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 21, go to the indicated DTC's troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve C and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

23. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
24. Start the engine in the P position, and wait for at least 1 second.
25. Drive the vehicle in 1st gear in the D position for at least 1 second.
26. Check for DTCs with the HDS.

    Is DTC P0980 indicated?

    YES -Check for poor connections or loose terminals between shift solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1.

    NO -Go to step 27.

27. Monitor the OBD STATUS for P0980 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 26, go to the indicated DTC's troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 24.

DTC P0982: SHORT IN SHIFT SOLENOID VALVE D CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 2nd gear in the D position for at least 1 second.
4. Check for DTCs with the HDS.

Is DTC P0982 indicated?

YES -Go to step 8.

NO -Go to step 5.

5. Select Shift Solenoid D in Miscellaneous Test Menu, and test shift solenoid valve D with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Test-drive the vehicle in 2nd gear in the D position for at least 1 second.
7. Monitor the OBD STATUS for P0982 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the wire between shift solenoid valve D and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C5 and A9.

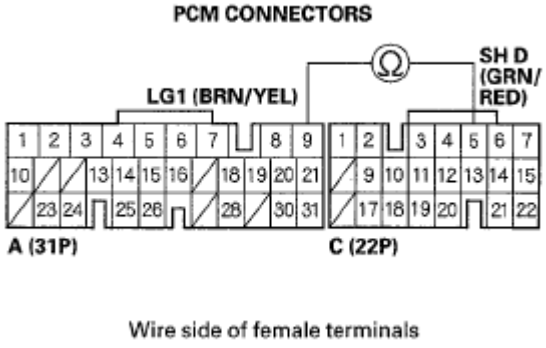


Fig. 155: Measuring Resistance Between PCM Connector Terminals C5 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES -Go to step 12.

NO -Go to step 22.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminals C5 and A9.

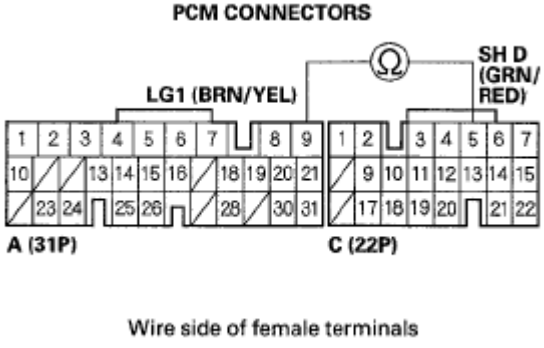


Fig. 156: Checking Continuity Between PCM Connector Terminals C5 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between PCM connector terminal C5 and the shift solenoid harness connector, then go to step 15.

NO -Go to step 14.

14. Inspect shift solenoid valve D and the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

Are shift solenoid valve D and the harness OK?

YES -Go to step 22.

NO -Replace shift solenoid valve D or the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Start the engine in the P position, and wait for at least 1 second.
19. Drive the vehicle in 2nd gear in the D position for at least 1 second.
20. Check for DTCs with the HDS.

Is DTC P0982 indicated?

YES -Check for intermittent short to body ground in the wire between shift solenoid valve D and the PCM, then go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0982 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve D and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

22. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine in the P position, and wait for at least 1 second.
24. Drive the vehicle in 2nd gear in the D position for at least 1 second.
25. Check for DTCs with the HDS.

    Is DTC P0982 indicated?

    YES -Check for intermittent short to body ground in the wire between shift solenoid valve D and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

    NO -Go to step 26.

26. Monitor the OBD STATUS for P0982 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 25, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve D and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

DTC P0983: OPEN IN SHIFT SOLENOID VALVE D CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine in the P position, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0983 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Shift Solenoid D in Miscellaneous Test Menu, and test shift solenoid valve D with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Start the engine in the P position, and wait for at least 1 second.
7. Monitor the OBD STATUS for P0983 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between shift solenoid valve D and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C5 and A9.

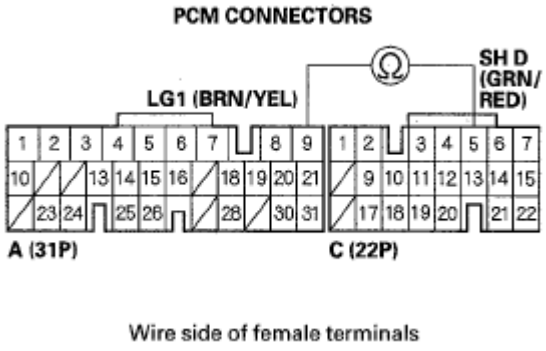


Fig. 157: Measuring Resistance Between PCM Connector Terminals C5 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES -Go to step 22.

NO -Go to step 12.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminal C5 and shift solenoid harness connector terminal No. 8.

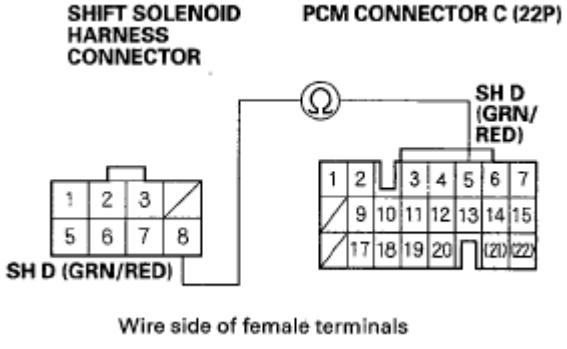


Fig. 158: Checking Continuity Between PCM Connector Terminal C5 And Shift Solenoid Harness Connector Terminal No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 14.

NO -Repair open in the wire between PCM connector terminal C5 and the shift solenoid harness connector, then go to step 16.

14. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

15. Check for continuity between shift solenoid harness connector terminal No. 8 and the shift solenoid valve D connector terminal.

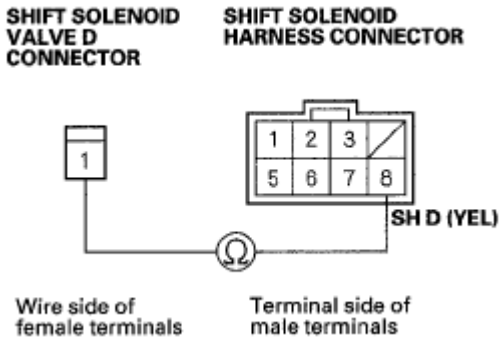


Fig. 159: Checking Continuity Between Shift Solenoid Harness And Shift Solenoid Valve D Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace shift solenoid valve D (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

NO -Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**),then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.
19. Start the engine in the P position, and wait for at least 1 second.
20. Check for DTCs with the HDS.

Is DTC P0983 indicated?

YES -Check for poor connections or loose terminals between shift solenoid valve D and the PCM, then go to step 1.

NO -Go to step 21.

21. Monitor the OBD STATUS for P0983 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve D and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

22. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine in the P position, and wait for at least 1 second.
24. Check for DTCs with the HDS.

    Is DTC P0983 indicated?

    YES -Check for poor connections or loose terminals between shift solenoid valve D and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

    NO -Go to step 25.

25. Monitor the OBD STATUS for P0983 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 24, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve D and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

DTC P0985: SHORT IN SHIFT SOLENOID VALVE E CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine in the P position, and wait for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0985 indicated?

YES -Go to step 8.

NO -Go to step 5.

5. Select Shift Solenoid E in Miscellaneous Test Menu, and test shift solenoid valve E with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Start the engine in the P position, and wait for at least 1 second.
7. Monitor the OBD STATUS for P0985 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for intermittent short to body ground in the wire between shift solenoid valve E and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C3 and A9.

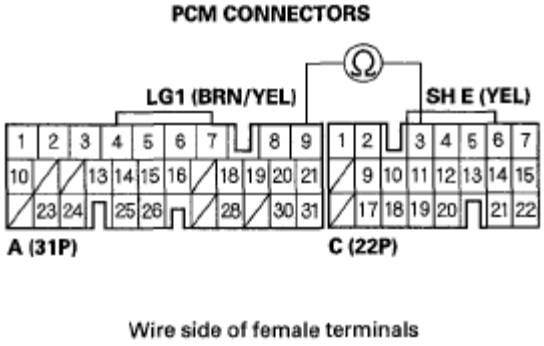


Fig. 160: Measuring Resistance Between PCM Connector Terminals C3 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES -Go to step 12.

NO -Go to step 21.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminals C3 and A9.

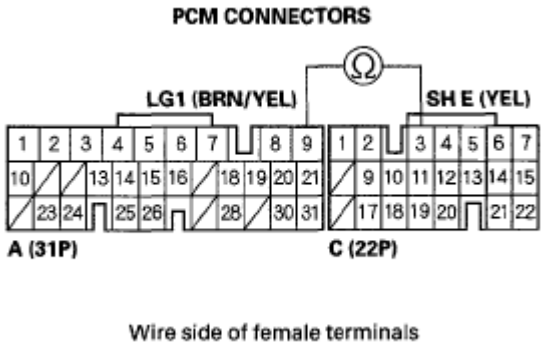


Fig. 161: Checking Continuity Between PCM Connector Terminals C3 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to ground in the wire between PCM connector terminal C3 and the shift solenoid harness connector, then go to step 15.

NO -Go to step 14.

14. Inspect shift solenoid valve E and the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).

Are shift solenoid valve E and the harness OK?

YES -Go to step 21.

NO -Replace shift solenoid valve E or the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Start the engine in the P position, and wait for at least 1 second.
19. Check for DTCs with the HDS.

Is DTC P0985 indicated?

YES -Check for intermittent short to body ground in the wire between shift solenoid valve E and the PCM, then go to step 1.

NO -Go to step 20.

20. Monitor the OBD STATUS for P0985 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 19, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve E and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

21. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
22. Start the engine in the P position, and wait for at least 1 second.
23. Check for DTCs with the HDS.

    Is DTC P0985 indicated?

    YES -Check for intermittent short to body ground in the wire between shift solenoid valve E and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 22. If the PCM was substituted, go to step 1.

    NO -Go to step 24.

24. Monitor the OBD STATUS for P0985 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for intermittent short to body ground in the wire between shift solenoid valve E and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 22. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 22.

DTC P0986: OPEN IN SHIFT SOLENOID VALVE E CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused**

by a mechanical problem in the transmission.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 2nd gear in the D position for at least 1 second.
4. Check for DTCs with the HDS.

   Is DTC P0986 indicated?

   YES -Go to step 8.

   NO -Go to step 5.

5. Select Shift Solenoid E in Miscellaneous Test Menu, and test shift solenoid valve E with the HDS.

   Is a clicking sound heard?

   YES -Go to step 6.

   NO -Go to step 8.

6. Test-drive the vehicle in 2nd gear in the D position for at least 1 second.
7. Monitor the OBD STATUS for P0986 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 8.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between shift solenoid valve E and the PCM. If the screen indicates NOT COMPLETED, go to step 5.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connectors A (31P) and C (22P).
11. Measure the resistance between PCM connector terminals C3 and A9.

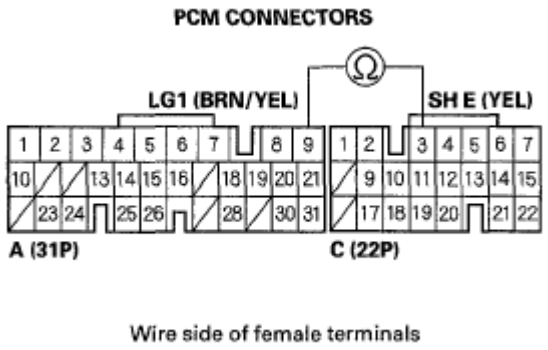


Fig. 162: Measuring Resistance Between PCM Connector Terminals C3 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12- 25 ohms?

YES -Go to step 23.

NO -Go to step 12.

12. Disconnect the shift solenoid harness connector at the transmission housing.
13. Check for continuity between PCM connector terminal C3 and shift solenoid harness connector terminal No. 3.

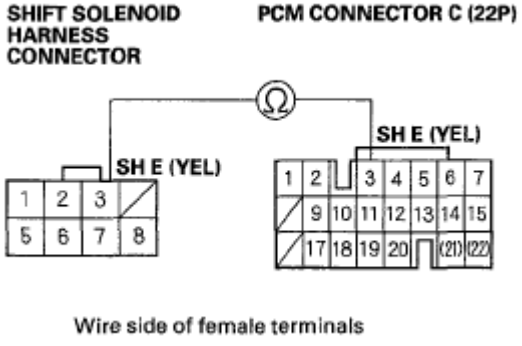


Fig. 163: Checking Continuity Between PCM Connector Terminal C3 And Shift Solenoid Harness Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 14.

NO -Repair open in the wire between PCM connector terminal C3 and the shift solenoid harness connector, then go to step 16.

14. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST**).
15. Check for continuity between shift solenoid harness connector terminal No. 3 and the shift solenoid valve

E connector terminal.

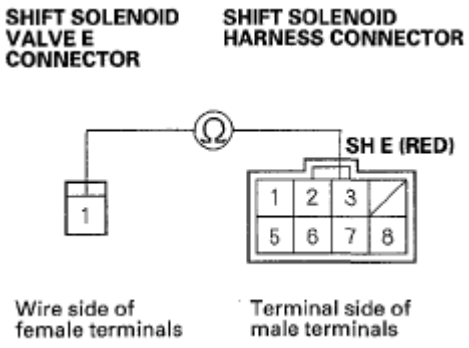


Fig. 164: Checking Continuity Between Shift Solenoid Harness Connector And Shift Solenoid Valve Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace shift solenoid valve E (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

NO -Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.
19. Start the engine, and wait for at least 1 second.
20. Drive the vehicle in 2nd gear in the D position for at least 1 second.
21. Check for DTCs with the HDS.

Is DTC P0986 indicated?

YES -Check for poor connections or loose terminals between shift solenoid valve E and the PCM, then go to step 1.

NO -Go to step 22.

22. Monitor the OBD STATUS for P0986 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES -Troubleshooting is complete. If any other DTCs were indicated in step 21, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve E and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 19.

23. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
24. Start the engine, and wait for at least 1 second.
25. Drive the vehicle in 2nd gear in the D position for at least 1 second.
26. Check for DTCs with the HDS.

    Is DTC P0986 indicated?

    YES -Check for poor connections or loose terminals between shift solenoid valve E and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1.

    NO -Go to step 27.

27. Monitor the OBD STATUS for DTC P0986 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 26, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between shift solenoid valve E and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 24.

DTC P1717: OPEN IN TRANSMISSION RANGE SWITCH ATP RVS SWITCH CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch ON (II).
2. Shift to the R position, and check the A/T R SWITCH in the DATA LIST with the HDS.

   Is the A/T R SWITCH ON?

   YES -Go to step 3.

NO -Inspect the end of the selector control shaft (see step 8), adjust the shift cable (see **SHIFT CABLE ADJUSTMENT**), then recheck. If the problem still exists, go to step 4.

3. Check the REVERSE SWITCH in the DATA LIST with the HDS.

   Is the REVERSE SWITCH ON?

   YES -Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the transmission range switch and the PCM.

   NO -Go to step 4.

4. Turn the ignition switch OFF.
5. Check for continuity between PCM connector terminal A8 and body ground, and between PCM connector terminal A9 and body ground.

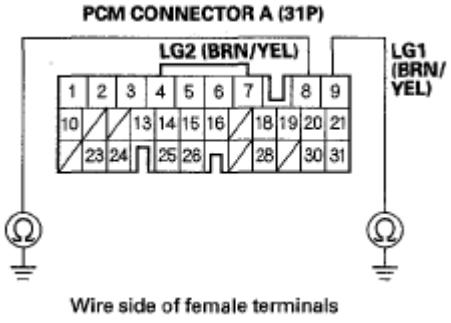


Fig. 165: Checking Continuity Between PCM Connector Terminal A8 And A9 Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there continuity?

   YES -Go to step 6.

   NO -Repair open in the wires between PCM connector terminals A8, A9, and ground (G101), and repair poor ground (G101),then go to step 12.

6. Turn the ignition switch ON (II).
7. Shift to the R position.
8. Measure the voltage between PCM connector terminals C12 and A9.

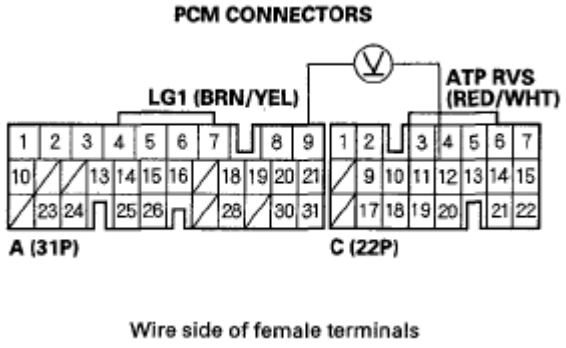


Fig. 166: Measuring Voltage Between PCM Connector Terminals C12 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -Go to step 9.

NO -Check for poor connections or loose terminals between PCM connector terminal C12 and the transmission range switch. If the connection is OK, go to step 19.

9. Turn the ignition switch OFF.
10. Disconnect the transmission range switch connector.
11. Check for continuity between the No. 1 and No. 10 terminals at the transmission range switch. The shift position must be R.

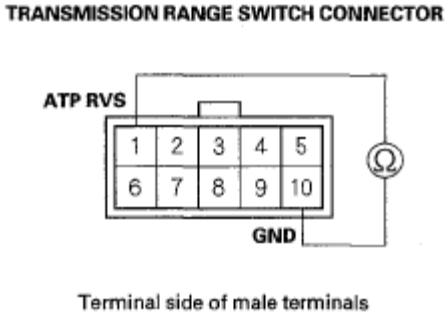


Fig. 167: Checking Continuity Between Connector Terminals 1 And 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Check for poor connections or loose terminals between transmission range switch connector terminal No. 1. If the connection is OK, repair open in the wire between PCM connector terminal C12 and the transmission range switch, then go to step 12.

NO -Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch ON (II).
14. Clear the DTC with the HDS.
15. Start the engine.
16. With the brake pedal pressed, shift slowly from the P position to the N position, then shift to the R position.
17. Check for DTCs with the HDS.

    Is DTC P1717 indicated?

    YES -Check for poor connections or loose terminals between the transmission range switch and the PCM, then go to step 1.

    NO -Go to step 18.

18. Monitor the OBD STATUS for P1717 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 17, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, check for poor connections or loose terminals between the transmission range switch and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 15.

19. Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Start the engine.
21. With the brake pedal pressed, shift slowly from the P position to the N position, then shift to the R position.
22. Check for DTCs with the HDS.

    Is DTC P1717 indicated?

    YES -Check for poor connections or loose terminals between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 20. If the PCM was substituted, go to step 1.

    NO -Go to step 23.

23. Monitor the OBD STATUS for P1717 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

YES -If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other DTCs were indicated in step 22, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 20. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 20.

DTC P1730: PROBLEM IN SHIFT CONTROL SYSTEM:

- Shift Solenoid Valves A or D Stuck OFF
- Shift Solenoid Valve B Stuck ON
- Shift Valves A, B, or D Stuck

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 17.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P1730 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.

10. Select Shift Solenoid A in Miscellaneous Test Menu, and check that shift solenoid valve A operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 11.

    NO -Replace shift solenoid valve A (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

11. Select Shift Solenoid B in Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 12.

    NO -Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

12. Select Shift Solenoid D in Miscellaneous Test Menu, and check that shift solenoid valve D operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 13.

    NO -Replace shift solenoid valve D (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

13. Test-drive the vehicle in the D position through all five gears.
14. Turn the ignition switch OFF, and repeat the test-drive in step 13.
15. Monitor the OBD STATUS for P1730 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Repair the hydraulic system related with shift valves A, B, and D, or replace the transmission, then go to step 16.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 13.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.

19. Test-drive the vehicle in the D position through all five gears.
20. Turn the ignition switch OFF, and repeat the test-drive in step 19.
21. Check for DTCs with the HDS.

    Is DTC P1730 indicated?

    YES -Go to step 9.

    NO -Go to step 22.

22. Monitor the OBD STATUS for P1730 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 21, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 19.

DTC P1731: PROBLEM IN SHIFT CONTROL SYSTEM:

- Shift Solenoid Valve E Stuck ON
- Shift Valve E Stuck
- A/T Clutch Pressure Control Solenoid Valve A Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.

7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P1731 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid E in Miscellaneous Test Menu, and check that shift solenoid valve E operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 11.

    NO -Replace shift solenoid valve E (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 13.

11. Select Clutch Pressure Control (Linear) Solenoid A in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

    Does the screen indicate NORMAL?

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

    NO -Follow instructions indicated on the HDS by the test result, but if the tester has not determined the cause of the failure, go to step 12. If any part was replaced, go to step 13.

12. Inspect A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A TEST**).

    Does A/T clutch pressure control solenoid valve A work properly?

    YES -Repair the hydraulic system related with shift valve E, or replace the transmission, then go to step 13.

    NO -Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A REPLACEMENT**), then go to step 13.

13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.

16. Test-drive the vehicle in the D position through all five gears.
17. Turn the ignition switch OFF, and repeat the test-drive instep 16.
18. Check for DTCs with the HDS.

    Is DTC P1731 indicated ?

    YES -Go to step 9.

    NO -Go to step 19.

19. Monitor the OBD STATUS for P1731 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 16.

DTC P1732: PROBLEM IN SHIFT CONTROL SYSTEM:

- Shift Solenoid Valves B or C Stuck ON
- Shift Valves B or C Stuck

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.

8. Monitor the OBD STATUS for P1732 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid B in Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 11.

    NO -Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

11. Select Shift Solenoid C in Miscellaneous Test Menu, and check that shift solenoid valve C operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 12.

    NO -Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE REPLACEMENT**),then go to step 15.

12. Test-drive the vehicle in the D position through all five gears.
13. Turn the ignition switch OFF, and repeat the test-drive instep 12.
14. Monitor the OBD STATUS for P1732 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Repair the hydraulic system related with shift valves B and C, or replace the transmission, then go to step 15.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 12.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.

18. Test-drive the vehicle in the D position through all five gears.
19. Turn the ignition switch OFF, and repeat the test-drive in step 18.
20. Check for DTCs with the HDS.

    Is DTC P1732 indicated?

    YES -Go to step 9.

    NO -Go to step 21.

21. Monitor the OBD STATUS for P1732 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 18.

DTC P1733: PROBLEM IN SHIFT CONTROL SYSTEM:

- Shift Solenoid Valve D Stuck ON
- Shift Valve D Stuck
- A/T Clutch Pressure Control Solenoid Valve C Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES -Replace the transmission, then go to step 14.

   NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.

7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P1733 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES -Go to step 9.

   NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid D in Miscellaneous Test Menu, and check that shift solenoid valve D operates with the HDS.

    Is a clicking sound heard?

    YES -Go to step 11.

    NO -Replace shift solenoid valve D (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 16.

11. Select Clutch Pressure Control (Linear) Solenoid C in Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

    Does the screen indicate NORMAL?

    YES -Go to step 12.

    NO -Follow instructions indicated on the HDS by the test result, but if the tester has not determined the cause of the failure, go to step 15. If any part was replaced, go to step 16.

12. Test-drive the vehicle in the D position through all five gears.
13. Turn the ignition switch OFF, and repeat the test-drive in step 12.
14. Monitor the OBD STATUS for P1733 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES -Repair the hydraulic system related with shift valve D, or replace the transmission, then go to step 16.

    NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 12.

15. Inspect A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C TEST**).

Does A/T clutch pressure control solenoid valve C work properly?

YES -Repair the hydraulic system related with shift valve D, or replace the transmission, then go to step 16.

NO -Replace A/T clutch pressure control solenoid C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**), then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Clear the DTC with the HDS.
19. Test-drive the vehicle in the D position through all five gears.
20. Turn the ignition switch OFF, and repeat the test-drive in step 19.
21. Check for DTCs with the HDS.

    Is DTC P1733 indicated?

    YES -Go to step 9.

    NO -Go to step 22.

22. Monitor the OBD STATUS for P1733 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 21, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 19.

DTC P1734: PROBLEM IN SHIFT CONTROL SYSTEM:

- Shift Solenoid Valves B or C Stuck OFF
- Shift Valves B or C Stuck

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 3) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES -Replace the transmission, then go to step 14.

NO -Replace the ATF (see step 5), then go to step 4.

4. Turn the ignition switch ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in the D position through all five gears.
7. Turn the ignition switch OFF, and repeat the test-drive in step 6.
8. Monitor the OBD STATUS for P1734 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES -Go to step 9.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6.

9. Clear the DTC with the HDS.
10. Select Shift Solenoid B in Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

Is a clicking sound heard?

YES -Go to step 11.

NO -Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

11. Select Shift Solenoid C in Miscellaneous Test Menu, and check that shift solenoid valve C operates with the HDS.

Is a clicking sound heard?

YES -Go to step 12.

NO -Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE REPLACEMENT**), then go to step 15.

12. Test-drive the vehicle in the D position through all five gears.
13. Turn the ignition switch OFF, and repeat the test-drive in step 12.
14. Monitor the OBD STATUS for P1734 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES -Repair the hydraulic system related with shift valves B and C, or replace the transmission, then go to step 15.

NO -If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 12.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Test-drive the vehicle in the D position through all five gears.
19. Turn the ignition switch OFF, and repeat the test-drive instep 18.
20. Check for DTCs with the HDS.

    Is DTC P1734 indicated?

    YES -Go to step 9.

    NO -Go to step 21.

21. Monitor the OBD STATUS for P1734 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES -Troubleshooting is complete. If any other DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

    NO -If the screen indicates FAILED, go to step 9. If the screen indicates NOT COMPLETED, go to step 18.

ROAD TEST

1. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
2. Apply the parking brake, and block both rear wheels.
3. Start the engine, then shift to the D position while pressing the brake pedal. Press the accelerator pedal, and release it suddenly. The engine should not stall.
4. Repeat step 3 in all shift lever positions.
5. Connect the HDS to the DLC (A), and go to the A/T data list. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

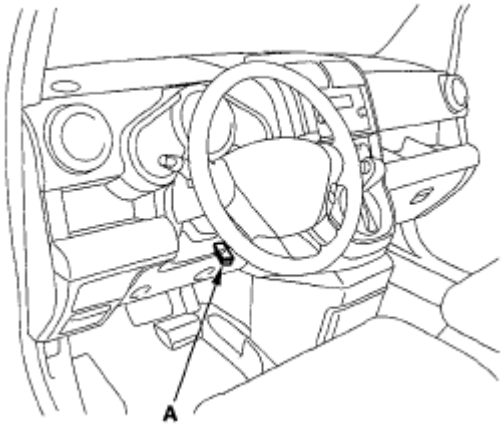


Fig. 168: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Prepare the HDS to take a HIGH SPEED SNAPSHOT (Refer to the HDS user's guide for more details if needed):
    - Select High Speed Snapshot.
    - Select these parameters:
        - Vehicle Speed
        - Output Shaft (Countershaft) Speed
        - Input Shaft (Mainshaft) Speed
        - Engine Speed
        - Relative TP Sensor
        - APP Sensor A (V)
        - ATF Temperature
        - Battery Voltage
        - Shift Control
        - Brake Switch
    - Set the Trigger Type to Parameter.
    - Adjust the Parameter setting to APP Sensor A above 0.8 V.
    - Set the recording time to 60 seconds.
    - Set the Trigger point to -30 seconds.
7. Find a suitable level road. When you are ready to do the test, press OK on the HDS.
8. Monitor the HDS and accelerate quickly until APP Sensor A reads 0.8 V. Maintain a steady throttle until the transmission shifts to 5th gear, then slow the vehicle and come to a stop.
9. Save the snapshot if the entire event was recorded or increase the recording time setting as necessary and repeat step 8.
10. Adjust the Parameter setting to 2.5 V. Retest-drive the vehicle. While monitoring the HDS accelerate quickly until APP Sensor A reads 2.5 V. Maintain a steady throttle until the transmission shifts to 5th gear (or reasonable speed), then slow the vehicle and come to a stop.

11. Save the snapshot if the entire event was recorded or increase the recording time setting as necessary and repeat step 10.
12. Accelerate quickly until the accelerator pedal is to the floor. Maintain a steady pedal until the transmission shifts to 3rd gear, then slow to a stop, and save the snapshot.
13. Review each snapshot individually and compare the Shift Command, APP Sensor A voltage, and Vehicle Speed to the table below.

Upshift: D Position

APP SENSOR VOLTAGE SPECIFICATIONS

APP Sensor A voltage: 0.8 V	
1st-->2nd	9-12 mph (15-19 km/h)
2nd-->3rd	17-21 mph (28-33 km/h)
3rd-->4th	24-29 mph (39-46 km/h)
4th-->5th	39-45 mph (63-72 km/h)
Lock-up ON in 5th gear	48-55 mph (77-89 km/h)
APP Sensor A voltage: 2.25 V	
1st-->2nd	21-25 mph (34-40 km/h)
2nd-->3rd	41-47 mph (67-75 km/h)
3rd-->4th	65-71 mph (105-114 km/h)
4th-->5th	109-120 mph (176-193 km/h)
Lock-up ON in 5th gear	114-125 mph (184-201 km/h)
Fully-opened throttle APP Sensor A voltage: 4.5 V	
1st-->2nd	37-43 mph (60-68 km/h)
2nd-->3rd	65-74 mph (106-119 km/h)
3rd-->4th	101-113 mph (164-183 km/h)

Downshift: D Position

APP SENSOR VOLTAGE SPECIFICATIONS

APP Sensor A voltage: 0.8 V	
Lock-up OFF in 5th gear	47-54 mph (76-86 km/h)
5th-->4th	30-36 mph (49-57 km/h)
4th-->3rd	18-22 mph (30-35 km/h)
3rd-->1st	5-8 mph (8-13 km/h)
APP Sensor A voltage: 2.25 V	
Lock-up OFF in 5th gear	72-81 mph (117-130 km/h)
Fully-opened throttle APP Sensor A voltage: 4.5 V	
Lock-up OFF in 5th gear	122-133 mph (197-214 km/h)
5th-->4th	116-128 mph (187-206 km/h)
4th-->3rd	85-95 mph (137-153 km/h)
3rd-->2nd	52-60 mph (85-96 km/h)

2nd-->1st	26-31 mph (42-50 km/h)

14. Drive the vehicle in 4th or 5th gear in the D position, then shift to the 2 position. The vehicle should immediately begin to slow down from engine braking.
15. Shift to the 1 position, accelerate from a stop at full throttle, and check for abnormal noise and clutch slippage. Upshifts should not occur in this position.
16. Shift to the 2 position, accelerate from a stop at full throttle, and check for abnormal noise and clutch slippage. Upshifts and downshifts should not occur in this position.
17. Shift to the R position, accelerate from a stop at full throttle momentarily, and check for abnormal noise and clutch slippage.
18. Park the vehicle on a slope (about 16 degrees), apply the brake, and shift into the P position. Release the brake; the vehicle should not move.

NOTE: Always use the parking brake to hold the vehicle, when stopped on an incline in gear. Depending on the grade of the incline, the vehicle could roll if the brake is released.

STALL SPEED TEST

1. Make sure the transmission fluid is filled to the proper level (see **ATF LEVEL CHECK**).
2. Apply the parking brake, and block all four wheels.
3. Connect the HDS to the DLC (A), and go to the A/T data list. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

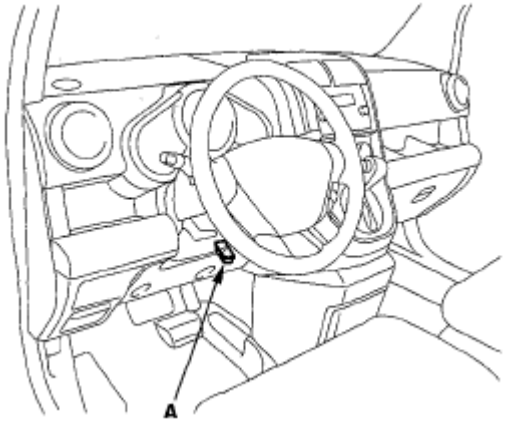


Fig. 169: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Make sure the A/C switch is OFF.
5. After the engine has warmed up to normal operating temperature (the radiator fan comes on), shift to the 2 position.
6. Firmly press the brake pedal, then fully press the accelerator pedal for 6 to 8 seconds, and note the engine

speed. Do not move the shift lever while raising engine speed.

7. Allow 2 minutes for cooling, then repeat the test in the D, 1, and R positions.

NOTE:

- **Do not test stall speed for more than 10 seconds at a time.**
- **Stall speed tests should be used for diagnostic purposes only.**
- **Stall speed tests should be the same in D, 2,1, and R positions.**
- **Do not test stall speed with the A/T oil pressure gauges installed.**

Stall Speed rpm:

Specification: 2,400 rpm

Service Limit: 2,250-2,550 rpm

8. If the measurements are out of the service limit, problems and probable causes are listed in the table.

SYMPTOM PROBLEM CHART

Problem	Probable causes
Stall speed rpm high in the D, 2,1, and R positions	• ATF pump output low • Clogged ATF strainer • Regulator valve stuck • Slipping clutch
Stall speed rpm high in the 1 position	Slippage of 1st clutch
Stall speed rpm high in the 2 position	Slippage of 2nd clutch
Stall speed rpm high in the R position	Slippage of 4th clutch
Stall speed rpm low in the D, 2,1, and R positions	• Engine output low • Engine throttle valve closed • Torque converter one-way clutch slipping

PRESSURE TEST

Special Tools Required

- A/T oil pressure gauge set w/panel 07406-0020400 or 07406-0020401
- A/T pressure hose, 2,210 mm 07MAJ-PY4011A
- A/T pressure hose adapter 07MAJ-PY40120

1. Make sure the transmission fluid is filled to the proper level (see **ATF LEVEL CHECK**).
2. 4WD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

2WD: Raise the front of the vehicle, make sure it is securely supported. Set the parking brake, block rear wheels securely, and allow the front wheels to rotate freely. Or raise the vehicle on a lift.

3. Remove the splash shield.
4. Connect the HDS to the DLC (A), and go to the A/T data list. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

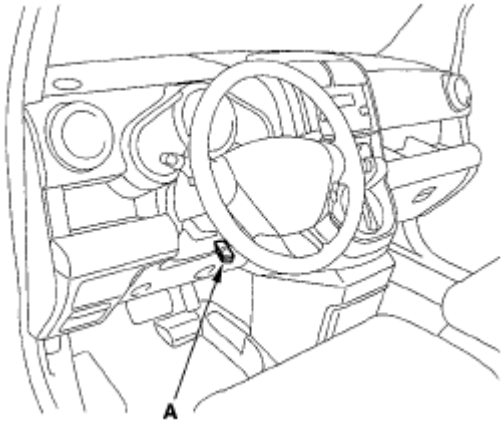


Fig. 170: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the A/T oil pressure gauge to the line pressure inspection port (A). Do not allow dust or other foreign particles to enter the port while connecting the gauge.

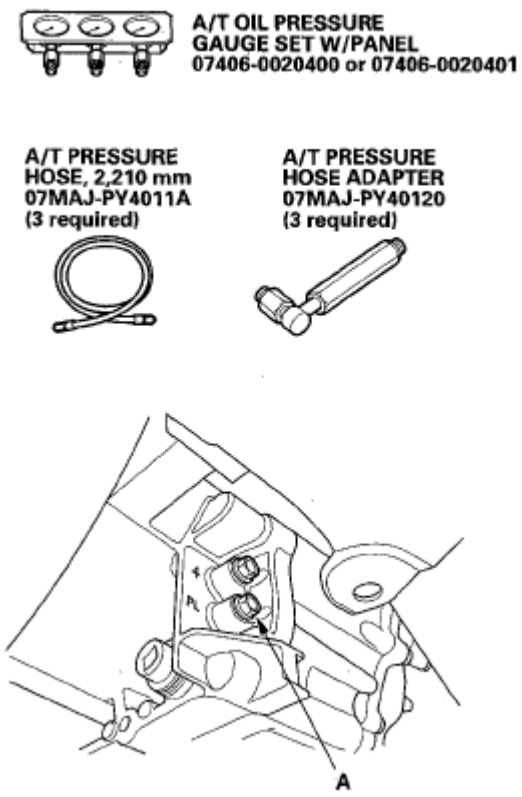


Fig. 171: Connecting A/T Oil Pressure Gauge To Line Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
7. With the shift lever in the P or N position while holding the engine speed at 2,000 rpm, measure the line pressure.

NOTE: Higher pressure may be indicated if measurements are made with shift lever in a position other than P or N.

FLUID PRESSURE SPECIFICATIONS

Pressure	Fluid Pressure	
	Standard	Service Limit
Line (A)	900-960 kPa (9.2-9.8 kgf/cm^2 , 130-140 psi)	850 kPa (8.7 kgf/cm^2 , 120 psi)

8. Turn the engine off, then disconnect the A/T oil pressure gauge from the line pressure inspection port.
9. Install the sealing bolt to the line pressure inspection port with the new sealing washer, and tighten the bolts to 18 N.m (1.8 kgf.m, 13 lbf.ft). Do not reuse old sealing washer.
10. Connect the A/Toil pressure gauge to the 1st clutch pressure inspection port (B).

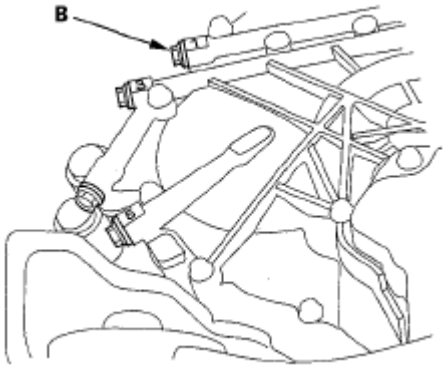


Fig. 172: Connecting A/T Oil Pressure Gauge To 1st Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the intake air duct and air cleaner assembly, and connect the A/T oil pressure gauge to the 2nd clutch pressure inspection port (C). Then temporarily install the air cleaner assembly and intake air duct.

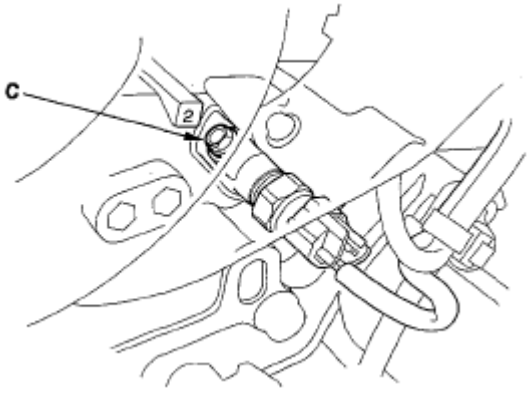


Fig. 173: Connecting A/T Oil Pressure Gauge To 2nd Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Start the engine, shift to the 1 position, and measure the 1st clutch pressure at the 1st clutch pressure inspection port (B) while holding engine speed at 2,000 rpm.
13. Shift to the 2 position, and measure the 2nd clutch pressure at the 2nd clutch pressure inspection port (C) while holding engine speed at 2,000 rpm.

FLUID PRESSURE SPECIFICATIONS

Pressure	Fluid Pressure	
	Standard	Service Limit
1st clutch (B) 2nd clutch (C)	890-970 kPa (9.1-9.9 kgf/cm^2 , 130-140 psi)	840 kPa (8.6 kgf/cm^2 , 120 psi)

14. Turn the engine off, then disconnect the A/Toil pressure gauges from the 1st clutch pressure and 2nd clutch pressure inspection ports.
15. Install the sealing bolts to the 1st clutch pressure and 2nd clutch pressure inspection ports with the new

sealing washers, and tighten the bolts to 18 N.m (1.8 kgf.m, 13 lbf.ft). Do not reuse old sealing washers.

16. Connect the A/Toil pressure gauge to the 3rd clutch pressure inspection port (D) and 5th clutch pressure inspection port (F).

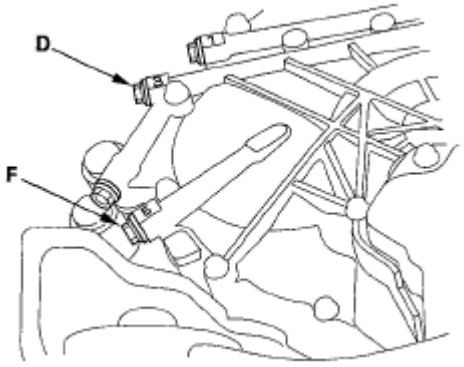


Fig. 174: Connecting A/T Oil Pressure Gauge To 3rd Clutch Pressure Inspection Port And 5th Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Connect the A/T oil pressure gauge to the 4th clutch pressure inspection port (E).

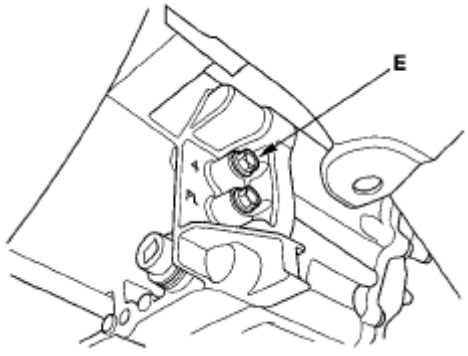


Fig. 175: Connecting A/T Oil Pressure Gauge To 4th Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Select Pressure Test Assistance Mode in the Miscellaneous Test Menu of the A/T Mode Menu.
19. Start the engine, then shift to the D position and select D3 driving mode by pressing the D3 switch.
20. Measure the 3rd clutch pressure at the 3rd clutch pressure inspection port (D) while holding the engine speed at 2,000 rpm.
21. Disable the D3 driving mode by pressing the D3 switch, and measure the 4th clutch pressure at the 4th clutch pressure inspection port (E) and the 5th clutch pressure at the 5th clutch pressure inspection port (F) while holding the engine speed at 2,000 rpm.

FLUID PRESSURE SPECIFICATIONS

Pressure	Fluid Pressure	
	Standard	Service Limit

3rd clutch (D) 4th clutch (E) 5th clutch (F)	890-920 kPa (9.1-9.9 kgf/cm^2 , 130-140 psi)	840 kPa (8.6 kgf/cm^2 , 120 psi)

22. Bring the engine back to an idle, then apply the brake pedal to stop the wheels from rotating.
23. Shift to the R position, then release the brake pedal. Raise the engine speed to 2,000 rpm, and measure the 4th clutch pressure at the 4th clutch pressure inspection port (E).

FLUID PRESSURE SPECIFICATIONS

Pressure	Fluid Pressure	
	Standard	Service Limit
4th clutch (E) in R	890-920 kPa (9.1-9.9 kgf/cm^2 , 130-140 psi)	840 kPa (8.6 kgf/cm^2 , 120 psi)

24. Turn the engine off, then disconnect the A/T oil pressure gauges from the 3rd, 4th, and 5th clutch pressure inspection ports.
25. Install the sealing bolts to the 3rd, 4th, and 5th clutch pressure inspection ports with the new sealing washers, and tighten the bolts to 18 N.m (1.8 kgf.m, 13 lbf.ft). Do not reuse old sealing washers.
26. If the pressures are out of the service limit, problems and probable causes are listed in the table.

SYMPTOM PROBLEM CHART

Problem	Probable causes
No or low line pressure	• Torque converter • ATF pump • Regulator valve • Torque converter check valve • Clogged ATF strainer
No or low 1st clutch pressure	• 1st clutch • O-rings
No or low 2nd clutch pressure	• 2nd clutch • O-rings
No or low 3rd clutch pressure	• 3rd clutch • O-rings
No or low 4th clutch pressure	• 4th clutch • O-rings
No or low 5th clutch pressure	• 5th clutch • O-rings
No or low 4th clutch pressure in the R position	• Servo valve • 4th clutch • O-rings

27. Install the air cleaner assembly and intake air duct.
28. Install the splash shield.

SHIFT SOLENOID VALVE TEST

1. Connect the HDS to the DLC (A).

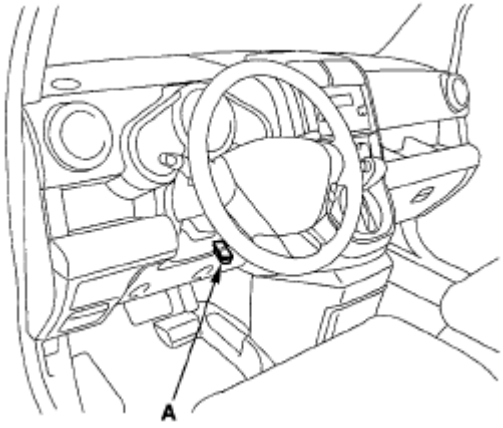


Fig. 176: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Shift Solenoid A, B, C, D, and E test in Miscellaneous Test Menu on the HDS. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check that shift solenoid valves A, B, C, D, and E operate with the HDS. A clicking sound should be heard.
4. The shift solenoid valves test is finished if the test results are OK.

   If no sound is heard, remove the shift solenoid valves and test.

5. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

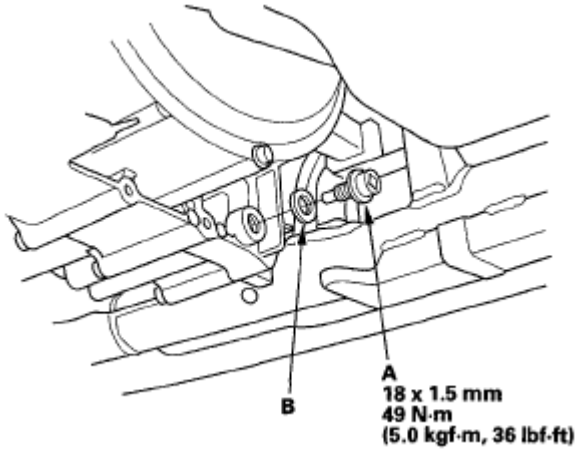


Fig. 177: Identifying Drain Plug With Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reinstall the drain plug with a new sealing washer (B).
7. Place the transmission jack under the transmission, and lift it up to create clearance between the transmission and front subframe.
8. Disconnect the shift solenoid harness connector.
9. Remove the shift solenoid valve cover (A), gasket (B), and dowel pins (C).

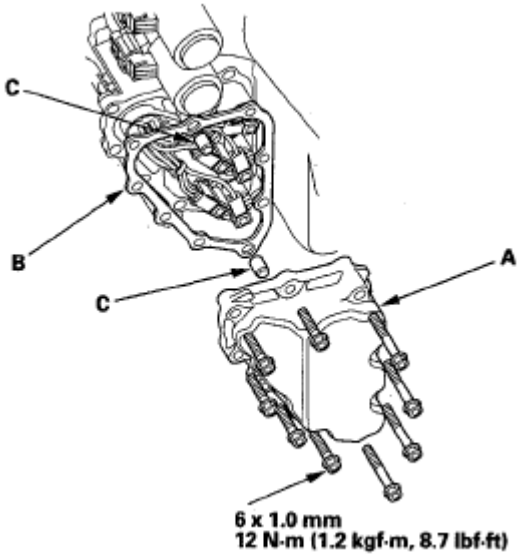


Fig. 178: Identifying Shift Solenoid Valve Cover, Gasket And Dowel Pins With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the shift solenoid harness connector.

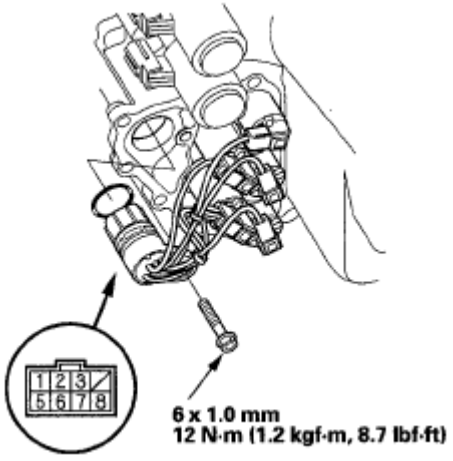


Fig. 179: Identifying Shift Solenoid Harness Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Measure shift solenoid valve resistance between shift solenoid harness connector terminals below and body ground:
    - No. 1 (GRN): Shift solenoid valve C
    - No. 2 (ORN): Shift solenoid valve B
    - No. 3 (RED): Shift solenoid valve E
    - No. 5 (BLU): Shift solenoid valve A
    - No. 8 (YEL): Shift solenoid valve D

    Standard: 12-25 ohms

12. If the resistance is out of standard, disconnect the shift solenoid valve connector, and measure its resistance at the solenoid valve connector. Replace the shift solenoid valve if the resistance is out of standard.
13. Connect the battery negative terminal to body ground, and connect the battery positive terminal to the shift solenoid harness connector terminal individually. A clicking sound should be heard.
14. If no sound is heard, connect the battery positive terminal to the shift solenoid valve terminal, and check for a clicking sound. Replace the shift solenoid valve if no clicking sound is heard.
15. Replace the shift solenoid harness if the shift solenoid valves test results are OK.
16. Install a new O-ring on the shift solenoid harness connector, and install the connector in the transmission housing.
17. Install the shift solenoid valve cover, dowel pins and a new gasket.
18. Check the connector for rust, dirt, or oil, then connect the connector securely.
19. Remove the transmission jack.
20. Refill the transmission with ATF (see step 5).

SHIFT SOLENOID VALVE REPLACEMENT

1. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

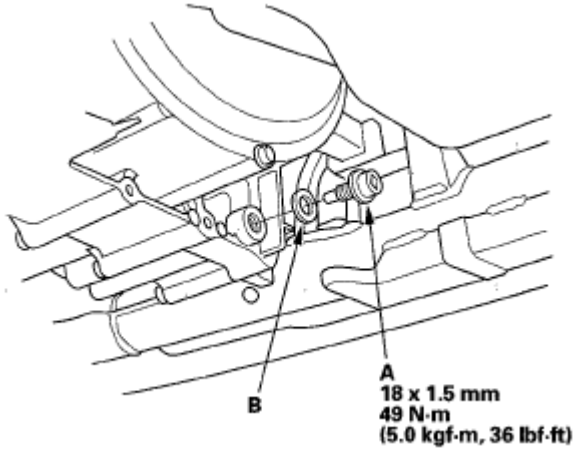


Fig. 180: Identifying Drain Plug With Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reinstall the drain plug with a new sealing washer (B).
3. Place the transmission jack under the transmission, and lift it up to create clearance between the transmission and front subframe.
4. Remove the shift solenoid valve cover (A), gasket (B), and dowel pins (C).

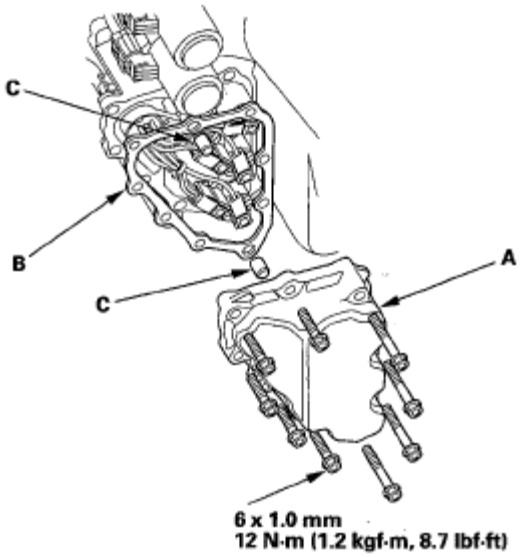


Fig. 181: Identifying Shift Solenoid Valve Cover, Gasket And Dowel Pins With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the shift solenoid valve connectors, remove the solenoid mounting bolts, then hold the solenoid valve body and remove the shift solenoid valves. Do not hold the connector to remove the shift

solenoid valve.

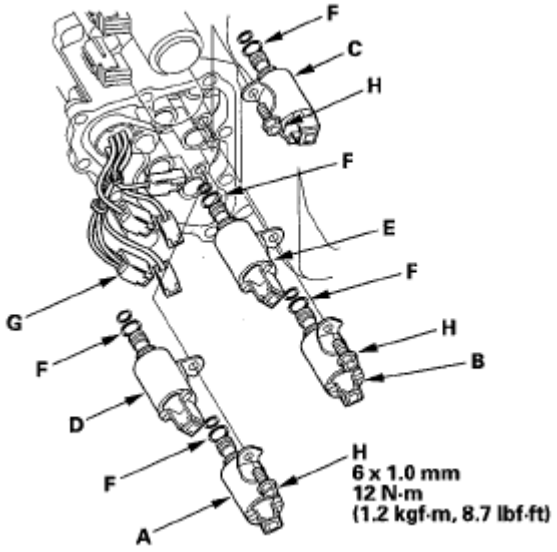


Fig. 182: Identifying Shift Solenoid Valve Connectors And Solenoid Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the new O-rings (two O-rings per solenoid valve) (F) on the reused solenoid valve.

NOTE: A new shift solenoid valve comes with new O-rings. If you install a new shift solenoid valve, use the O-rings provided on it.

7. Install shift solenoid valves C, D, and E. While holding the shift solenoid valve body, be sure to install the solenoid valves until their mounting brackets contact the servo body.
8. Install shift solenoid valves A and B. While holding the shift solenoid valve body, be sure to install the solenoid valves until their mounting brackets contact the bracket of the installed solenoid. Install the solenoid mounting bolts (H) and tighten them.

NOTE: Do not install solenoid valves A and B before installing shift solenoid valves D and E. If solenoid valves A and B are installed before solenoid valves D and E, it may damage the hydraulic control system.

9. Connect the shift solenoid valve D connector (G) with the ATF temperature sensor.
10. Connect the solenoid valve A connector (BLU wire), solenoid valve B connector (ORN wire), solenoid valve C connector (GRN wire), and solenoid valve E connector (RED wire).
11. Install the shift solenoid valve cover, dowel pins and a new gasket.
12. Check the connector for rust, dirt, or oil, then connect the connector securely.
13. Remove the transmission jack.
14. Refill the transmission with ATF (see step 5).

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A TEST

1. Connect the HDS to the DLC (A).

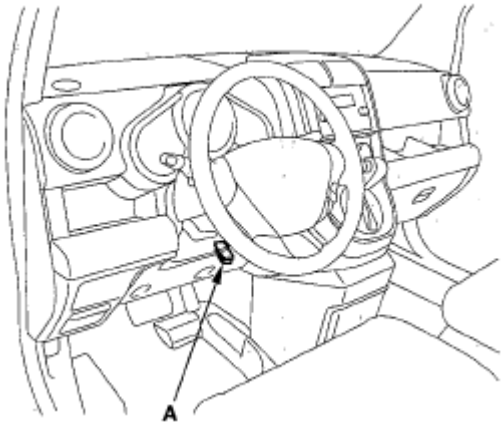


Fig. 183: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Clutch Pressure Control (Linear) Solenoid A in Miscellaneous Test Menu on the HDS. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Test A/T clutch pressure control solenoid valve A with the HDS.
4. Follow the instructions indicated on the HDS by the test result. If the HDS has not determined the cause of the failure, remove A/T clutch pressure control solenoid A and test.
5. Remove the air cleaner assembly.
6. Disconnect the A/T clutch pressure control solenoid valve A connector.

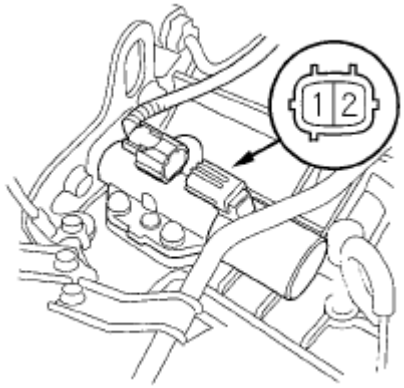


Fig. 184: Identifying A/T Clutch Pressure Control Solenoid Valve Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure A/T clutch pressure control solenoid valve A resistance at the solenoid valve A connector.

Standard: 3-10 ohms

8. If the resistance is out of the standard, replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A REPLACEMENT**).
9. Connect the battery positive terminal to A/T clutch pressure control solenoid valve connector terminal No. 1, and connect the battery negative terminal to terminal No. 2. A clicking sound should be heard.
10. If no sound is heard, remove A/T clutch pressure control solenoid valve A, and check the valve movement.
11. Remove the mounting bolts and A/T clutch pressure control solenoid valve A.

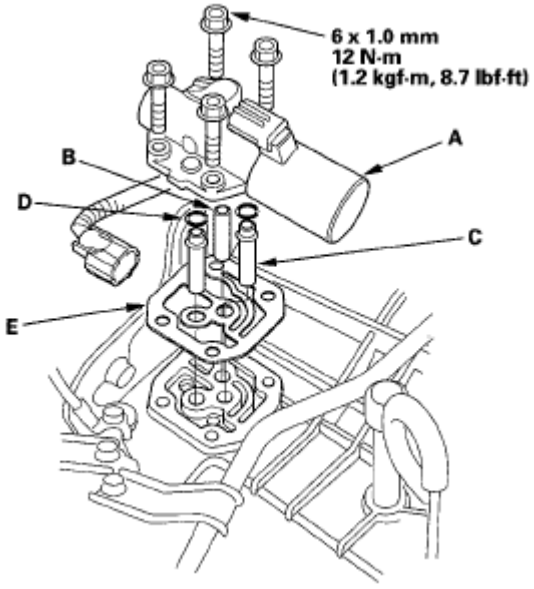


Fig. 185: Identifying A/T Clutch Pressure Control Solenoid Valve And Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the ATF pipe (B), ATF joint pipes (C), O-rings (D), and gasket (E).
13. Check the fluid passage of the A/T clutch pressure control solenoid valve for dust or dirt, and clean the passage.
14. Connect the battery positive terminal to A/T clutch pressure control solenoid valve connector terminal No. 1, and connect the battery negative terminal to terminal No. 2. Make sure the A/T clutch pressure control solenoid valve moves.

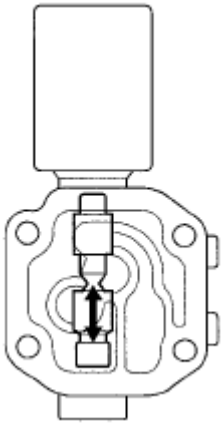


Fig. 186: Checking A/T Clutch Pressure Control Solenoid Valve Moves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Disconnect one of the battery terminals, and check valve movement.

NOTE: You can see valve movement through the fluid passage in the mounting surface of the A/T clutch pressure control solenoid valve A body.

16. If the valve binds or moves sluggishly, or if the solenoid valve does not operate, replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A REPLACEMENT**).
17. Install a new gasket on the transmission housing, and install the ATF pipe and ATF joint pipes.
18. Install new O-rings over the ATF joint pipes.
19. Install A/T clutch pressure control solenoid valve A.
20. Check the A/T clutch pressure control solenoid valve A connector for rust, dirt, or oil, then connect the connector securely.
21. Install the air cleaner assembly.

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A REPLACEMENT

1. Remove the air cleaner assembly.
2. Disconnect the A/T clutch pressure control solenoid valve A connector.
3. Remove the mounting bolts and A/T clutch pressure control solenoid valve A.

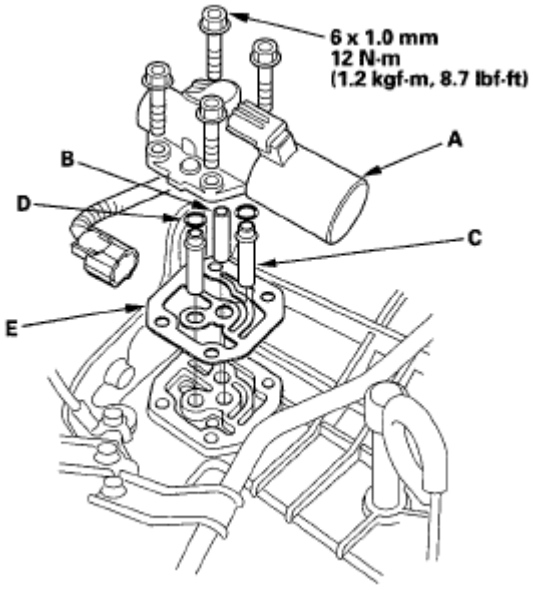


Fig. 187: Identifying A/T Clutch Pressure Control Solenoid Valve And Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the ATF pipe (B), ATF joint pipes (C), O-rings (D), and gasket (E).
5. Clean the mounting surface and fluid passages of the transmission housing.
6. Install a new gasket on the transmission housing, and install the ATF pipe and ATF joint pipes.
7. Install new O-rings over the ATF joint pipes.
8. Install new A/T clutch pressure control solenoid valve A.
9. Check the A/T clutch pressure control solenoid valve A connector for rust, dirt, or oil, then connect the connector securely.
10. Install the air cleaner assembly.

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B TEST

1. Connect the HDS to the DLC (A).

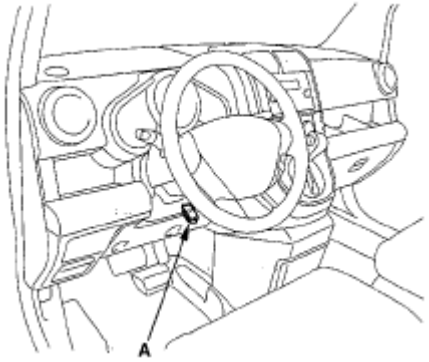


Fig. 188: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Clutch Pressure Control (Linear) Solenoid B in Miscellaneous Test Menu on the HDS. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Test A/T clutch pressure control solenoid valve B with the HDS.
4. Follow the instructions indicated on the HDS by the test result. If the HDS has not determined the cause of the failure, remove A/T clutch pressure control solenoid valves B and C, and test.
5. Make sure you have the anti-theft code for the audio system, and write down the audio presets.
6. Disconnect the battery negative terminal, then disconnect the battery positive terminal.
7. Remove the battery hold-down bracket, then remove the battery and battery tray.
8. Remove the battery base.
9. Disconnect the A/T clutch pressure control solenoid valve B connector.

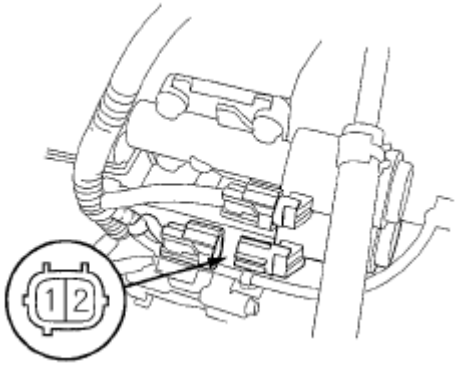


Fig. 189: Identifying A/T Clutch Pressure Control Solenoid Valve B Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Measure A/T clutch pressure control solenoid valve B resistance between solenoid valve B terminals No. land No. 2.

Standard: 3-10 ohms

11. If the resistance is out of the. standard, replace A/T clutch pressure control solenoid valves B and C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**).
12. Connect the battery positive terminal to A/T clutch pressure control solenoid valve B connector terminal No. 1, and connect the battery negative terminal to terminal No. 2. A clicking sound should be heard.
13. If no sound is heard, remove A/T clutch pressure control solenoid valves B and C.
14. Remove the mounting bolts, harness clamp bracket (A), and A/T clutch pressure control solenoid valves B and C.

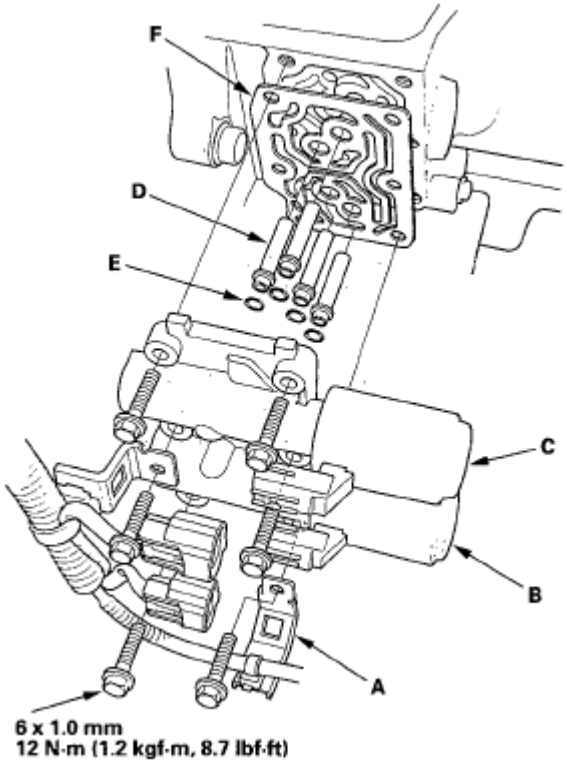


Fig. 190: Identifying Harness Clamp Bracket And A/T Clutch Pressure Control Solenoid Valves With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the ATF joint pipes (D), O-rings (E), and gasket (F).
16. Check the fluid passage of the A/T clutch pressure control solenoid valve for dust or dirt, and clean the passage.
17. Connect A/T clutch pressure control solenoid valve B connector terminal No. 1 to the battery positive terminal, and connect terminal No. 2 to the battery negative terminal. Make sure A/T clutch pressure control solenoid valve B moves.

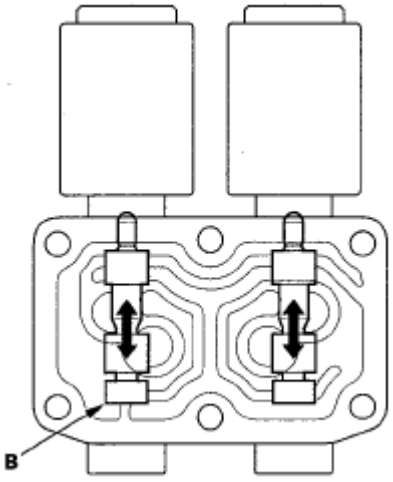


Fig. 191: Checking A/T Clutch Pressure Control Solenoid Valve B Moves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Disconnect one of the battery terminals, and check valve movement.

NOTE: You can see valve movement through the fluid passage in the mounting surface of the A/T clutch pressure control solenoid valves B and C body.

19. If the valve binds or moves sluggishly, or if the solenoid valve does not operate, replace A/T clutch pressure control solenoid valves B and C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**).
20. Install a new gasket on the transmission housing, and install the ATF joint pipes.
21. Install new O-rings over the ATF joint pipes.
22. Install A/T clutch pressure control solenoid valves B and C, and harness clamp bracket.
23. Check the A/T clutch pressure control solenoid valve B and C connectors for rust, dirt, or oil, then connect the connectors securely.
24. Install the battery base, battery tray, and battery, then secure the battery with its hold-down bracket.
25. Connect the battery terminals.
26. Enter the anti-theft code for the audio system, then enter the audio presets.
27. Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
28. Set the clock.

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C TEST

1. Connect the HDS to the DLC (A).

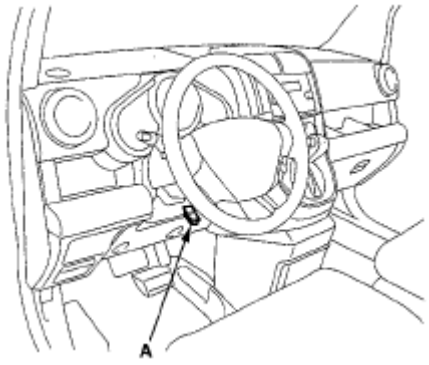


Fig. 192: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Clutch Pressure Control (Linear) Solenoid C in Miscellaneous Test Menu on the HDS. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Test A/T clutch pressure control solenoid valve C with the HDS.
4. Follow the instructions indicated on the HDS by the test result. If the HDS has not determined the cause of the failure, remove A/T clutch pressure control solenoid valves B and C, and test.
5. Make sure you have the anti-theft code for the audio system, and write down the audio presets.
6. Disconnect the battery negative terminal, then disconnect the battery positive terminal.
7. Remove the battery hold-down bracket, then remove the battery and battery tray.
8. Remove the battery base.
9. Disconnect the A/T clutch pressure control solenoid valve C connector.

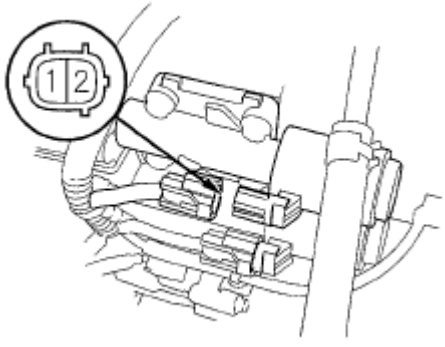


Fig. 193: Identifying A/T Clutch Pressure Control Solenoid Valve C Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Measure A/T clutch pressure control solenoid valve C resistance between solenoid valve C terminals No. 1 and No. 2.

    Standard: 3-10 ohms

11. If the resistance is out of the standard, replace A/T clutch pressure control solenoid valves B and C (see

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT).

12. Connect the battery positive terminal to A/T clutch pressure control solenoid valve C connector terminal No. 1, and connect the battery negative terminal to terminal No. 2. A clicking sound should be heard.
13. If no sound is heard, remove A/T clutch pressure control solenoid valves B and C.
14. Remove the mounting bolts, harness clamp bracket (A), and A/T clutch pressure control solenoid valves B and C.

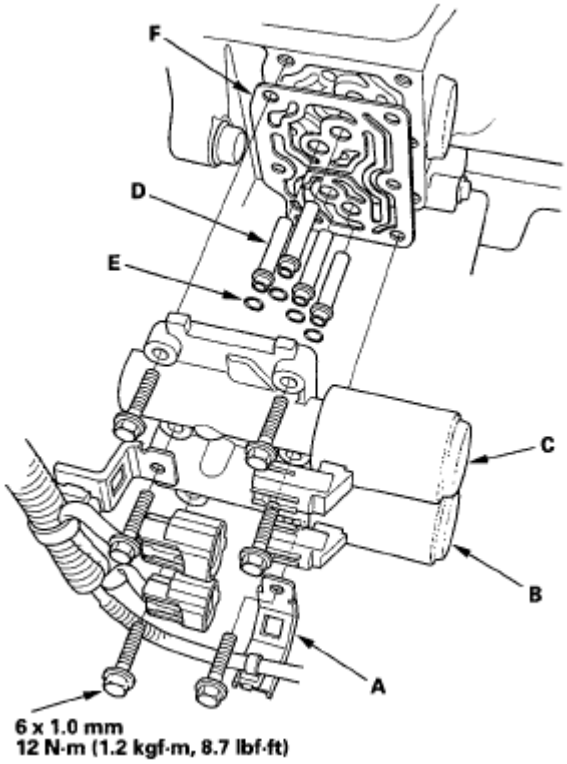


Fig. 194: Identifying Mounting Bolts, Harness Clamp Bracket And A/T Clutch Pressure Control Solenoid Valves With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the ATF joint pipes (D), O-rings (E),and gasket (F).
16. Check the fluid passage of the A/T clutch pressure control solenoid valve for dust or dirt, and clean the passage.
17. Connect A/T clutch pressure control solenoid valve C connector terminal No. 1 to the battery positive terminal, and connect terminal No. 2 to the battery negative terminal. Make sure A/T clutch pressure control solenoid valve C moves.

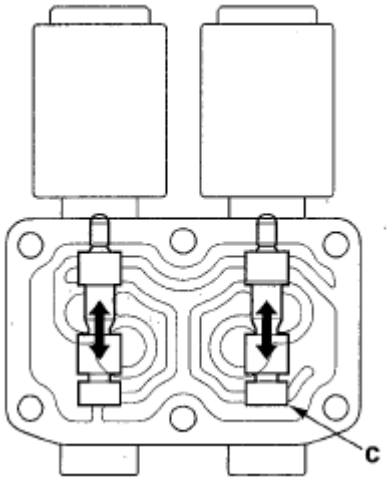


Fig. 195: Checking A/T Clutch Pressure Control Solenoid Valve C Moves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Disconnect one of the battery terminals, and check valve movement.

NOTE: You can see valve movement through the fluid passage in the mounting surface of the A/T clutch pressure control solenoid valves B and C body.

19. If the valve binds or moves sluggishly, or if the solenoid valve does not operate, replace A/T clutch pressure control solenoid valves B and C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT**).
20. Install a new gasket on the transmission housing, and install the ATF joint pipes.
21. Install new O-rings over the ATF joint pipes.
22. Install A/T clutch pressure control solenoid valves B and C, and harness clamp bracket.
23. Check the A/T clutch pressure control solenoid valve B and C connectors for rust, dirt, or oil, then connect the connectors securely.
24. Install the battery base, battery tray, and battery, then secure the battery with its hold-down bracket.
25. Connect the battery terminals.
26. Enter the anti-theft code for the audio system, then enter the audio presets.
27. Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
28. Set the clock.

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B AND C REPLACEMENT

1. Make sure you have the anti-theft code for the audio system, and write down the audio presets.
2. Disconnect the battery negative terminal, then disconnect the battery positive terminal.
3. Remove the battery hold-down bracket, then remove the battery and battery tray.

4. Remove the battery base.
5. Disconnect the A/T clutch pressure control solenoid valve B and C connectors.
6. Remove the mounting bolts, harness clamp bracket (A), and A/T clutch pressure control solenoid valves B and C.

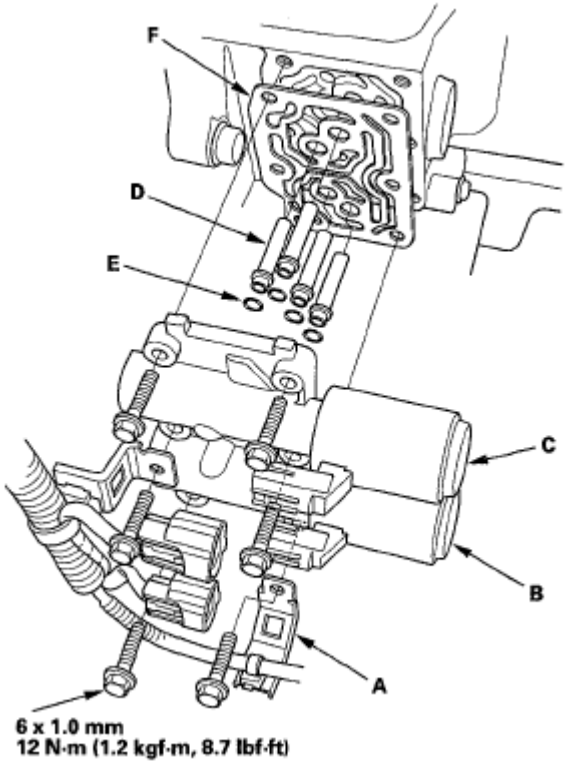


Fig. 196: Identifying Mounting Bolts, Harness Clamp Bracket And A/T Clutch Pressure Control Solenoid Valves With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the ATF joint pipes (D), O-rings (E), and gasket (F).
8. Clean the mounting surface and fluid passages of the transmission housing.
9. Install a new gasket on the transmission housing, and install the ATF joint pipes.
10. Install new O-rings over the ATF joint pipes.
11. Install new A/T clutch pressure control solenoid valves B and C, and harness clamp bracket.
12. Check the A/T clutch pressure control solenoid valve B and C connectors for rust, dirt, or oil, then connect the connectors securely.
13. Install the battery base, battery tray, and battery, then secure the battery with its hold-down bracket.
14. Connect the battery terminals.
15. Enter the anti-theft code for the audio system, then enter the audio presets.
16. Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

17. Set the clock.

INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT

1. Remove the air cleaner assembly.
2. Disconnect the input shaft (mainshaft) speed sensor connector, and remove the input shaft (mainshaft) speed sensor.
3. Install a new O-ring (A) on the new input shaft (mainshaft) speed sensor (B), then install the input shaft (mainshaft) speed sensor, and washer (G) in the transmission housing.

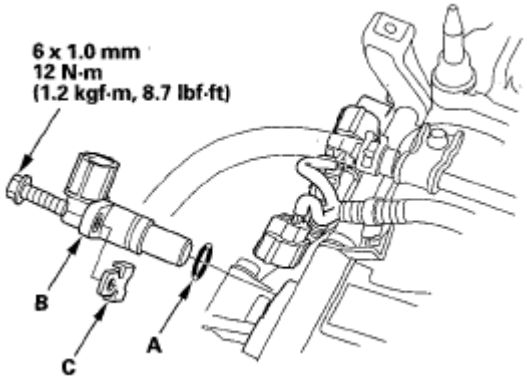


Fig. 197: Identifying O-Ring And Input Shaft (Mainshaft) Speed Sensor With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the connector for rust, dirt, or oil, and clean if necessary, then connect the connector securely.
5. Install the air cleaner assembly.

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT

1. Remove the air cleaner assembly.
2. Disconnect the output shaft (countershaft) speed sensor connector, and remove the output shaft (countershaft) speed sensor.
3. Install a new O-ring (A) on the new output shaft (countershaft) speed sensor (B), then install the output shaft (countershaft) speed sensor in the transmission housing.

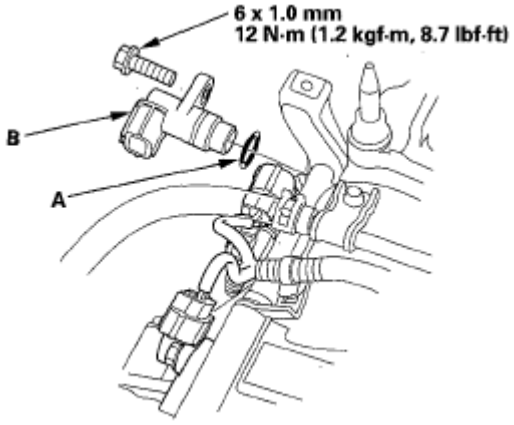


Fig. 198: Identifying O-Ring And Output Shaft (Countershaft) Speed Sensor With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the connector for rust, dirt, or oil, and clean if necessary, then connect the connector securely.
5. Install the air cleaner assembly.

2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT

1. Remove the air cleaner assembly.
2. Disconnect the 2nd clutch transmission fluid pressure switch connector, and remove the 2nd clutch transmission fluid pressure switch.
3. Install the new 2nd clutch transmission fluid pressure switch (A) with a new sealing washer (B). Tighten the switch to the specified torque on the metal part, not the plastic part.

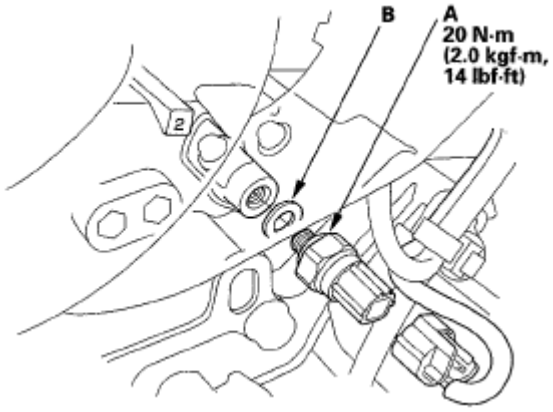


Fig. 199: Identifying 2nd Clutch Transmission Fluid Pressure Switch With Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the connector for rust, dirt, or oil, and clean if necessary, then connect the connector securely.
5. Install the air cleaner assembly.

3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT

1. Disconnect the 3rd clutch transmission fluid pressure switch connector, and remove the 3rd clutch transmission fluid pressure switch.
2. Install the new 3rd clutch transmission fluid pressure switch (A) with a new sealing washer (B). Tighten the switch to the specified torque on the metal part, not the plastic part.

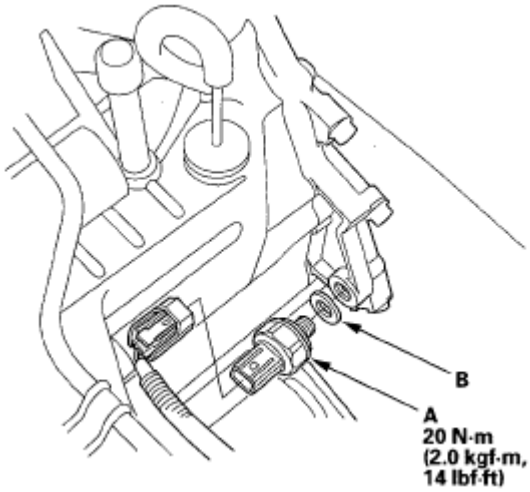


Fig. 200: Identifying 3rd Clutch Transmission Fluid Pressure Switch With Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the connector for rust, dirt, or oil, and clean if necessary, then connect the connector securely.

ATF TEMPERATURE SENSOR TEST/REPLACEMENT

1. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

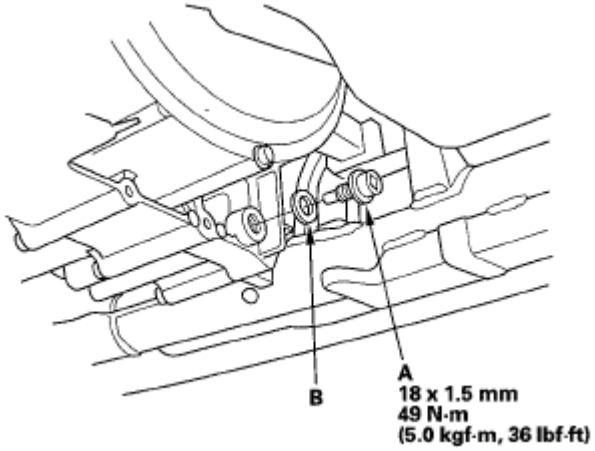


Fig. 201: Identifying Drain Plug With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reinstall the drain plug with a new sealing washer (B).
3. Place the transmission jack under the transmission, and lift it up to create clearance between the transmission and front subframe.
4. Disconnect the shift solenoid harness connector.
5. Remove the shift solenoid valve cover (A), gasket (B), and dowel pins (C).

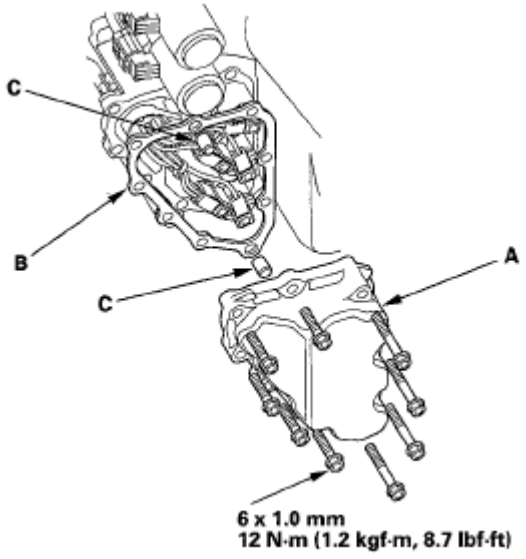


Fig. 202: Identifying Shift Solenoid Valve Cover, Gasket And Dowel Pins With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the shift solenoid harness connector.

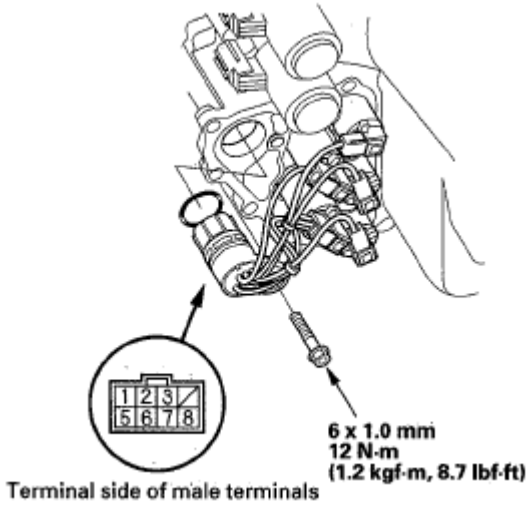


Fig. 203: Identifying Shift Solenoid Harness Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the ATF temperature sensor resistance between shift solenoid harness connector terminals No. 6 and No. 7.

   Standard: 50 ohms-25 kohms

8. If the resistance is out of standard, replace the ATF temperature sensor and solenoid harness; go to step 9. The ATF temperature sensor is not available separately from the solenoid harness.

   If the measurement is within the standard, install the removed parts; go to step 12.

9. Disconnect the connectors from the shift solenoid valves.
10. Connect the shift solenoid valve D connector (A) with the ATF temperature sensor (B) on the shift solenoid harness.

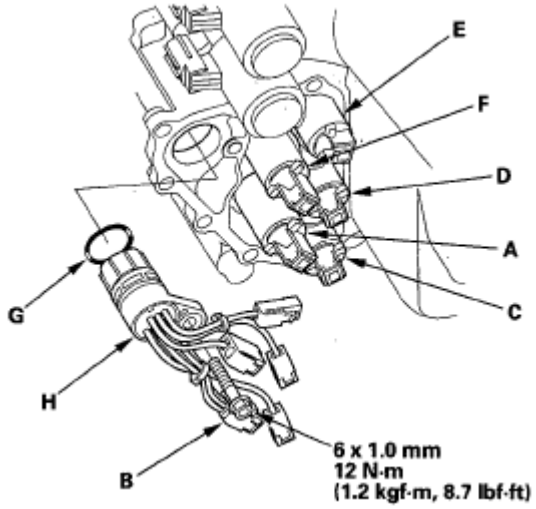


Fig. 204: Identifying Shift Solenoid Valve D Connector With ATF Temperature Sensor With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the solenoid valve A connector (BLU wire) (C), solenoid valve B connector (ORN wire) (D), solenoid valve C connector (GRN wire) (E), and solenoid valve E connector (RED wire) (F).
12. Install the new O-ring (G) on the shift solenoid harness connector (H), and install the connector in the transmission housing.
13. Install the shift solenoid valve cover, dowel pins and a new gasket.
14. Check the connector for rust, dirt, or oil, then connect the connector securely.
15. Remove the transmission jack.
16. Refill the transmission with ATF (see step 5).

ATF LEVEL CHECK

NOTE: Keep all foreign particles out of the transmission.

1. Park the vehicle on level ground.
2. Warm up the engine to normal operating temperature (the radiator fan comes on), and turn the engine off. Do not allow the engine to warm up longer than the time it takes for the radiator fan to come on twice.

NOTE: Check the fluid level within 60-90 seconds after turning the engine off. Higher fluid level may be indicated if the radiator fan comes on twice or more.

3. Remove the dipstick (yellow loop) (A) from the transmission, and wipe it with a clean cloth.

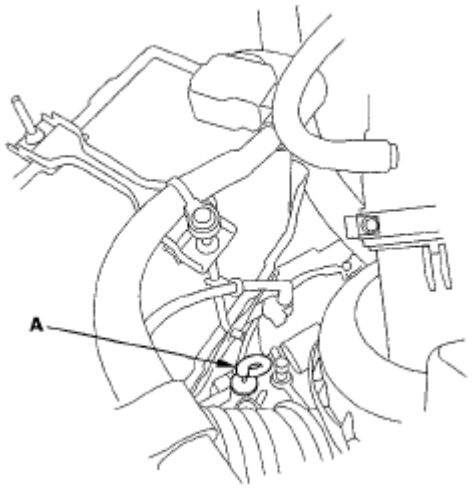


Fig. 205: Identifying Dipstick (Yellow Loop)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Insert the dipstick back into the transmission.
5. Remove the dipstick (A), and check the fluid level. It should be between the upper mark (B) and the lower mark (C).

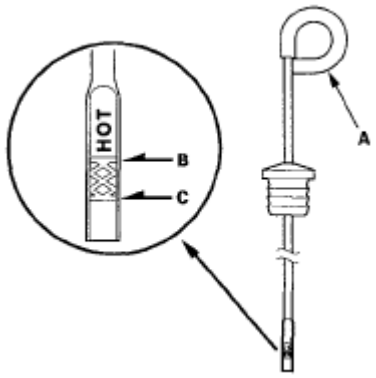


Fig. 206: Identifying Upper Mark And Lower Mark On Dipstick

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the level is below the upper mark, check for fluid leaks at the transmission, hose and line joints, and cooler lines. If a problem is found, fix it before filling the transmission with ATF.

NOTE: If the vehicle is driven when the ATF level is below the lower mark:

- **Transmission damage will result.**
- **Vehicle does not move in any gear.**
- **Vehicle accelerates poorly, and flares when starting off in the D and R positions.**
- **The engine vibrates at idle.**

7. If the level is above the upper mark, drain the ATF to proper level (see step 3).

NOTE: If the vehicle is driven when the ATF level is above the upper mark, the vehicle may creep forward in the N position, or have shifting problems.

8. If necessary, fill the transmission with ATF through the dipstick hole to bring the fluid level to midway between the upper mark and the lower mark of the dipstick. Do not fill past the upper mark. Always use Honda ATF-Z1 Automatic Transmission Fluid (ATF). Using a non-Honda ATF can affect shift quality.
9. Insert the dipstick (A) back into the transmission with the handle pointing toward the breather pipe (B).

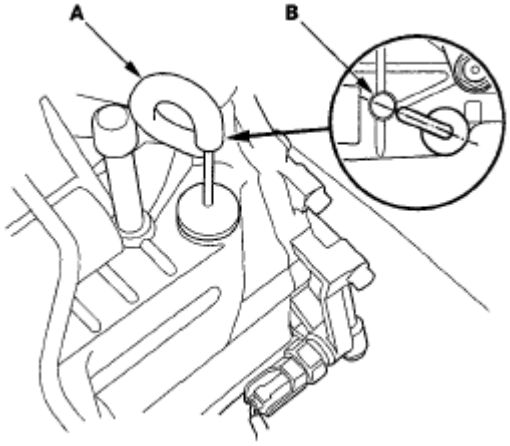


Fig. 207: Identifying Dipstick Back Into Transmission
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ATF REPLACEMENT

NOTE: Keep all foreign particles out of the transmission.

1. Park the vehicle on level ground.

2. Warm up the engine to normal operating temperature (the radiator fan comes on), and turn the engine off.
3. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

NOTE: If ATF cooler cleaning is necessary, refer to ATF cooler cleaning (see ATF COOLER CLEANING).

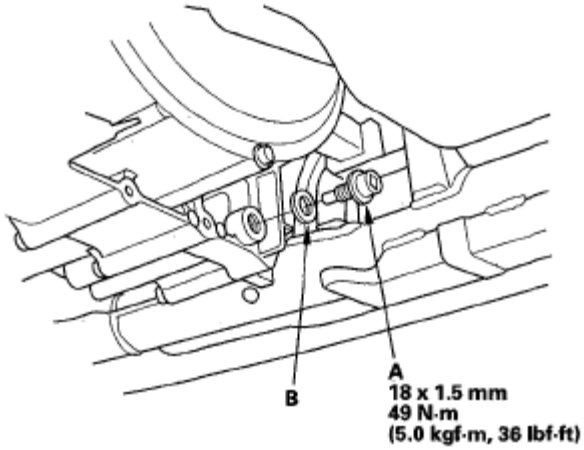


Fig. 208: Identifying Drain Plug With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the drain plug with a new sealing washer (B).
5. Remove the dipstick, and refill the transmission with the recommended fluid amount through the dipstick hole until the level reaches between the upper mark and the lower mark on the dipstick. Always use Honda ATF-Z1 Automatic Transmission Fluid (ATF). Using a non-Honda ATF can affect shift quality.

   Automatic Transmission Fluid Capacity:

   4WD:

   2.5 L (2.6 US qt) at change

   7.2 L (7.6 US qt) at overhaul

   2WD:

   2.6 L (2.7 US qt) at change

   7.0 L (7.4 US qt) at overhaul

6. Insert the dipstick (A) back into the transmission with the handle pointing toward the breather pipe (B).

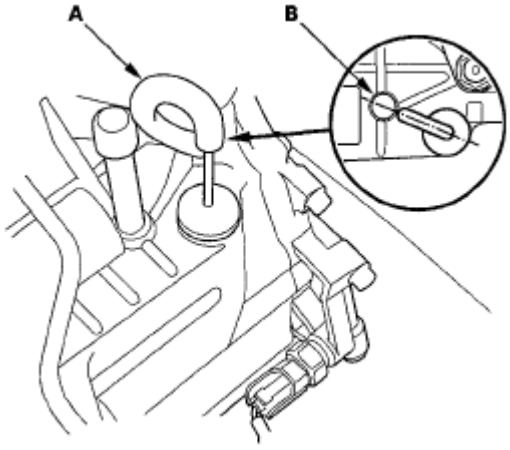


Fig. 209: Identifying Dipstick (Oil Gauge)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY INSPECTION

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Shift the transmission into the N position.
3. Make a reference mark (A) across the propeller shaft (B) and the transfer companion flange (C).

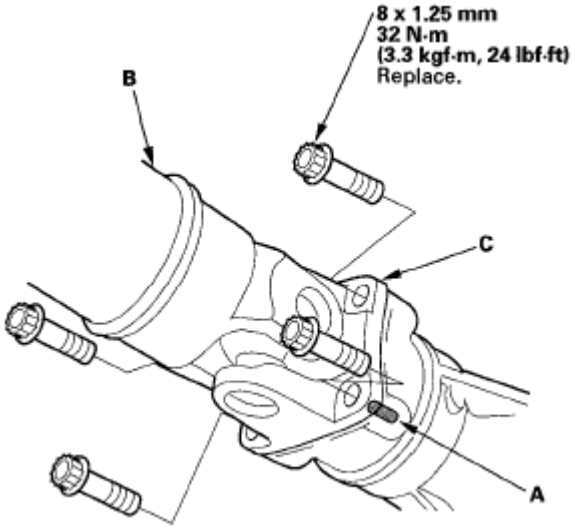


Fig. 210: Identifying Propeller Shaft And Transfer Companion Flange With Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separate the propeller shaft from the transfer assembly.
5. Set a dial indicator (A) on the transfer companion flange (B), and measure the transfer gear backlash.

Standard: 0.06-0.16 mm (0.002-0.006 in.) B

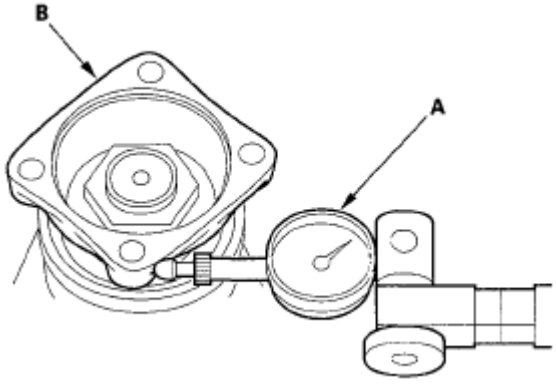


Fig. 211: Measuring Transfer Gear Backlash
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the backlash is out of standard, remove the transfer assembly, and adjust the transfer gear backlash (see step 20).
7. Check for fluid leaks between the mating surfaces of the transfer assembly and transmission.
8. If there is a leak, remove the transfer assembly, and replace the O-ring. Also check for fluid leaks between the mating surfaces of the transfer housing and transfer cover. If there is a leak, remove the transfer assembly, and replace the O-ring.
9. Check for leaks between the transfer companion flange and transfer oil seal.
10. If there is a leak, remove the transfer assembly from the transmission, and replace the transfer oil seal and O-ring on the transfer output shaft. If oil seal and O-ring replacement is required, you will need to check arid adjust the transfer gear tooth contact, transfer gear backlash, the tapered roller bearing starting torque, and the total starting torque (see **INSPECTION**). Do not replace the oil seal with the transfer assembly on the transmission.

TRANSFER ASSEMBLY REMOVAL

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Remove the drain plug (A), and drain the automatic transmission fluid (ATF). Reinstall the drain plug with a new sealing washer (B).

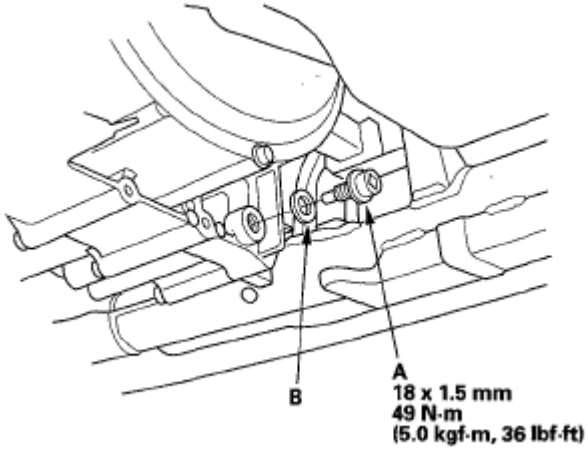


Fig. 212: Identifying Drain Plug With Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make a reference mark (A) across the propeller shaft (B) and the transfer companion flange (C).

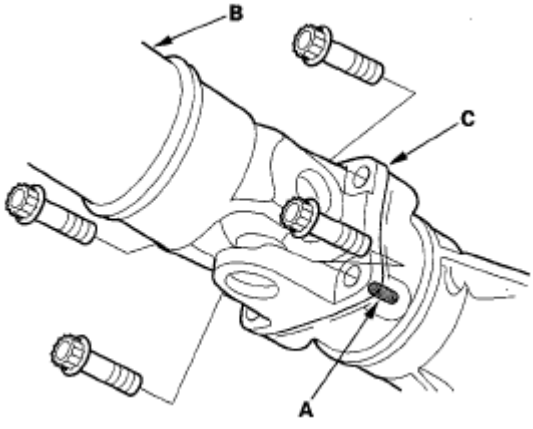


Fig. 213: Identifying Propeller Shaft And Transfer Companion Flange With Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separate the propeller shaft from the transfer assembly.
5. Remove the transfer assembly and dowel pin.

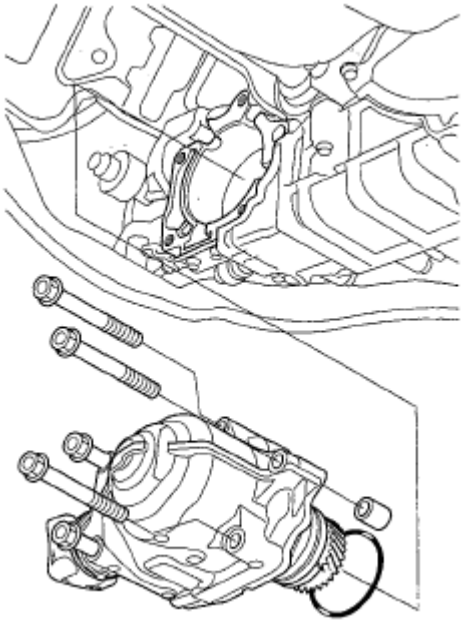


Fig. 214: Identifying Transfer Assembly And Dowel Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY INSTALLATION

1. Clean the area where the transfer assembly contacts the transmission with solvent or carburetor cleaner, and dry with compressed air. Then apply Automatic Transmission Fluid (ATF) to the contact areas. When installing the transfer assembly, be sure not to allow dust or other foreign particles to enter the transmission.
2. Install the new O-ring (A) on the transfer.

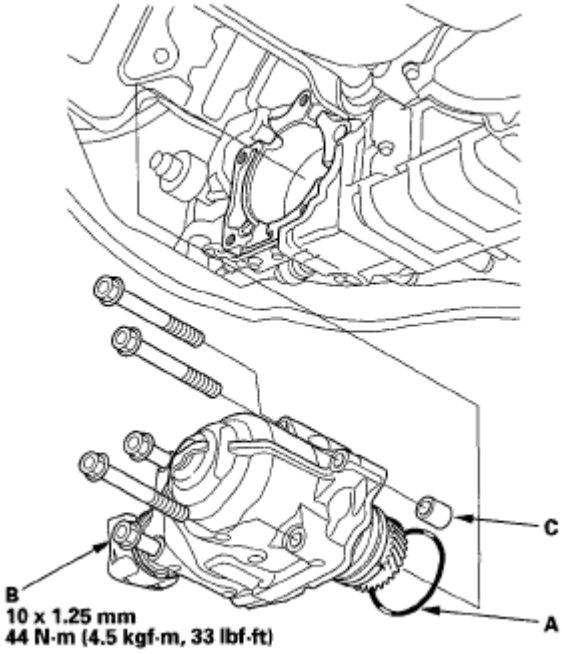


Fig. 215: Identifying O-Ring And Dowel Pin With Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert the five bolts (B) in the transfer housing, then install the transfer assembly with the dowel pin (C).
4. Install the propeller shaft (A) to the transfer companion flange (B) by aligning the reference mark (C).

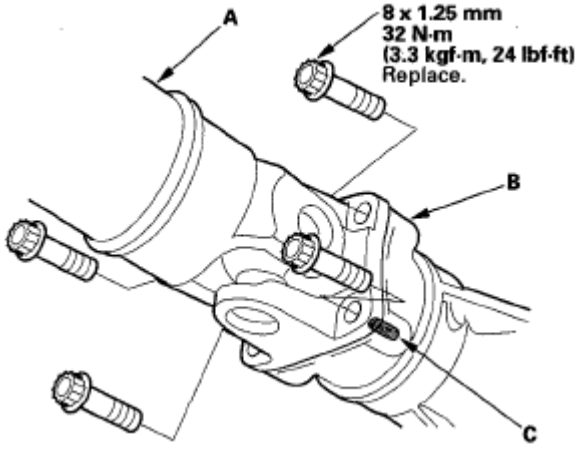


Fig. 216: Identifying Propeller Shaft And Transfer Companion Flange With Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Refill the transmission fluid (see step 5).
6. Start the engine, and run it to normal operating temperature (the radiator fan comes on). Turn the engine off, and check the fluid level (see **ATF LEVEL CHECK**).

TRANSMISSION REMOVAL

Special Tools Required

- Engine hanger adapter VSB02C000015
- Engine support hanger, A and Reds AAR-T-12566
- Front subframe adapter VSB02C000016 (Available through the Honda Tool and Equipment Program 1-888-424-6857)

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Make sure you have the anti-theft code for the audio system, and write down the audio presets.
2. Raise the vehicle on a lift, and make sure it is securely supported.
3. Remove the splash shield.
4. Remove the drain plug (A), and drain the automatic transmission fluid (ATF). Reinstall the drain plug with a new sealing washer (B).

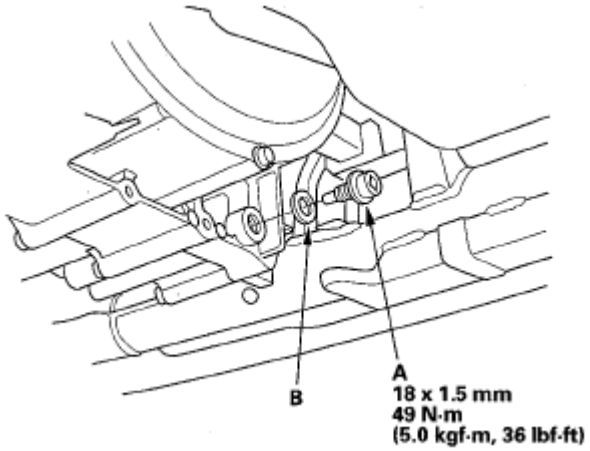


Fig. 217: Identifying Drain Plug With Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the battery negative terminal, then disconnect the battery positive terminal.
6. Remove the air cleaner assembly and the intake air duct.
7. Remove the battery hold-down bracket, then remove the battery and battery tray.
8. Remove the harness clamp from the battery base, then remove the battery base.
9. Remove the transmission ground terminal (A). BE

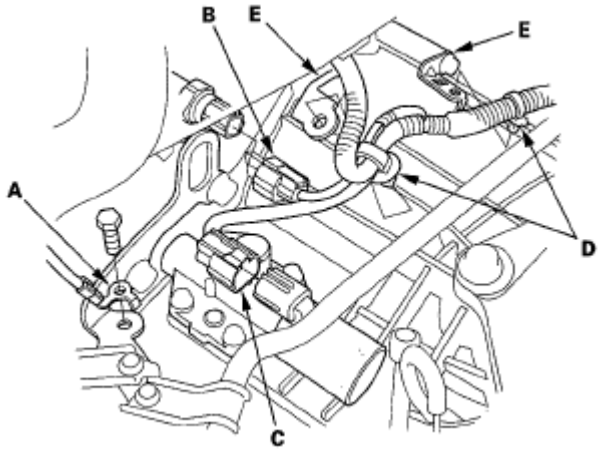


Fig. 218: Identifying 2nd Clutch Transmission Fluid Pressure Switch Connector And A/T Clutch Pressure Control Solenoid Valve A Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the 2nd clutch transmission fluid pressure switch connector (B) and A/T clutch pressure control solenoid valve A connector (C), and remove the harness clamps (D) from the clamp brackets (E).
11. Disconnect the output shaft (countershaft) speed sensor connector (A) and input shaft (mainshaft) speed sensor connector (B).

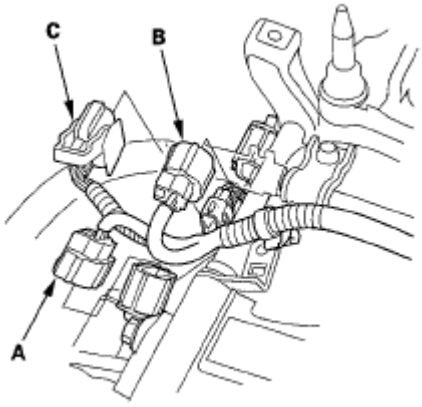


Fig. 219: Identifying Output Shaft (Countershaft) Speed Sensor Connector And Input Shaft (Mainshaft) Speed Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Disconnect the transmission range switch connector (C).
13. Disconnect the 3rd clutch transmission fluid pressure switch connector.

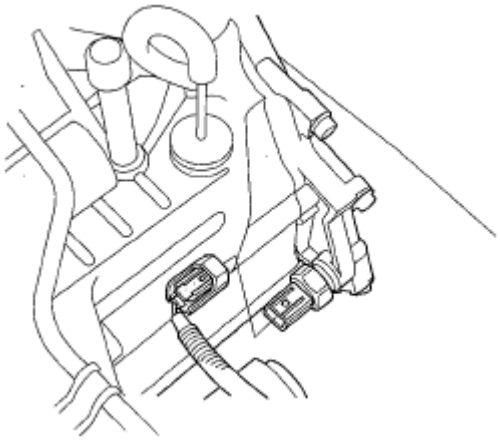


Fig. 220: Identifying 3rd Clutch Transmission Fluid Pressure Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Disconnect the shift solenoid harness connector (A), A/T clutch pressure control solenoid valve B connector (B), and A/T clutch pressure control solenoid valve C connector (C), then remove the harness clamps (D) from the clamp brackets (E).

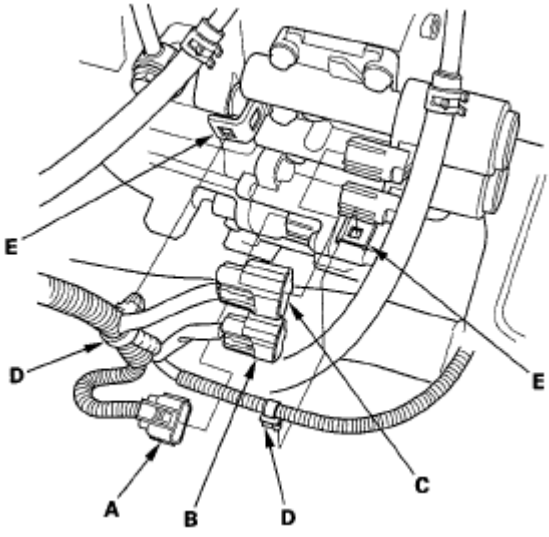


Fig. 221: Identifying Shift Solenoid Harness Connector And A/T Clutch Pressure Control Solenoid Valve B Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the ATF cooler hoses (A) from the ATF cooler lines (B). Turn the ends of the ATF cooler hoses up to prevent ATF from flowing out, then plug the ATF cooler hoses and lines.

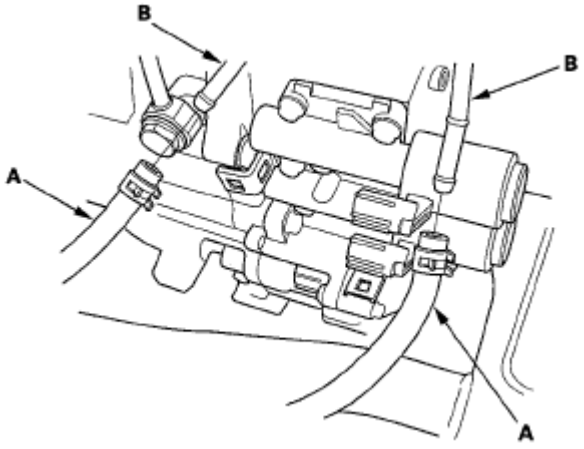


Fig. 222: Identifying ATF Cooler Hoses And ATF Cooler Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for any signs of leakage at the hose joints.
17. Remove the bolts (A) securing the water line and harness brackets (B).

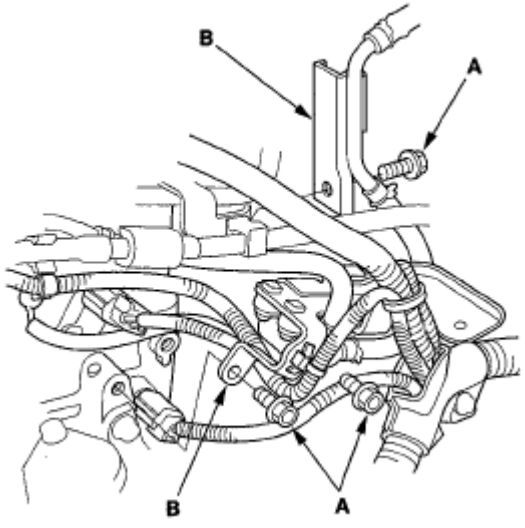


Fig. 223: Identifying Water Line And Harness Brackets With Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Attach the engine hanger adapter (VSB02C000015) to the threaded hole (A) in the cylinder head.

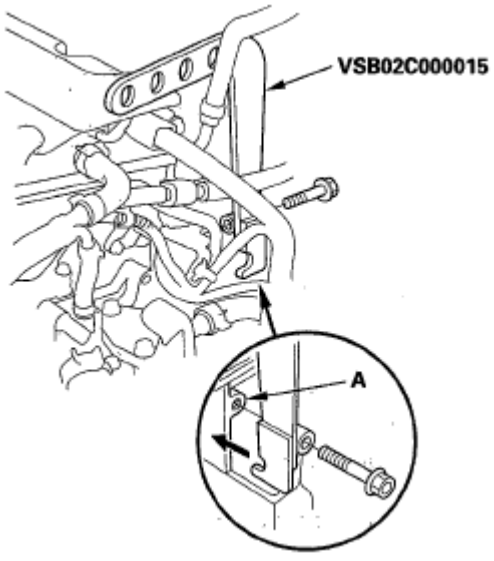


Fig. 224: Attaching Engine Hanger Adapter (VSB02C000015) To Threaded Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the under-hood fuse/relay box from its bracket.
20. Install the engine support hanger (AAR-T-12566) to the vehicle, and attach the hook (A) to the engine hanger adapter (VSB02C000015). Tighten the wing nut (B) by hand, and lift and support the engine.

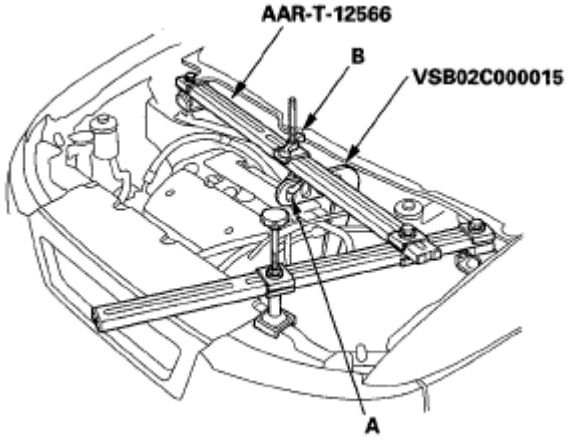


Fig. 225: Lifting Engine With Engine Support Hanger (AAR-T-12566)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Insert a 5 mm hex wrench (A) in the top of the ball joint pin (B), and remove the nut (C), then separate the stabilizer link (D) from the lower arm.

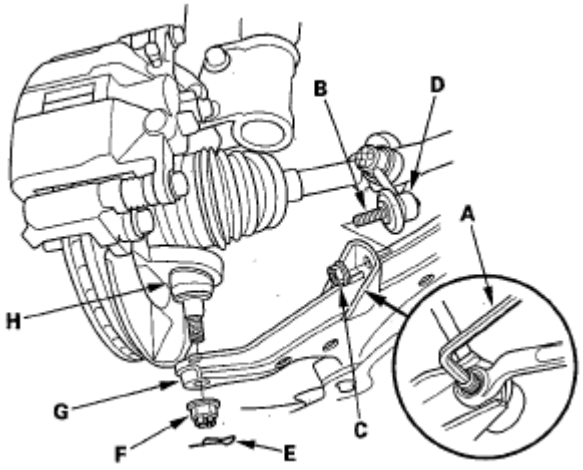


Fig. 226: Separating Stabilizer Link From Lower Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the lock pin (E) and castle nuts (F). Install the ball joint thread protector (07AAF-SDAA100) on the ball joint threads, and separate the lower arms (G) from the knuckles (H) (see step 10 in **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).
23. Remove the torque converter cover (A), and remove the eight drive plate bolts (B) while rotating the crankshaft pulley.

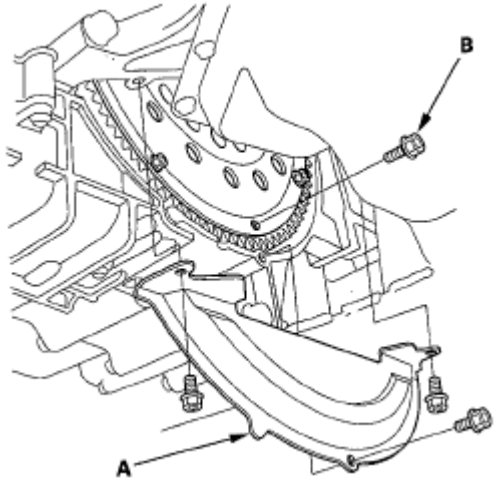


Fig. 227: Identifying Torque Converter Cover And Eight Drive Plate With Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the shift cable cover (A), then remove the bolts (B) securing the shift cable bracket (C), and the shift cable holder (D).

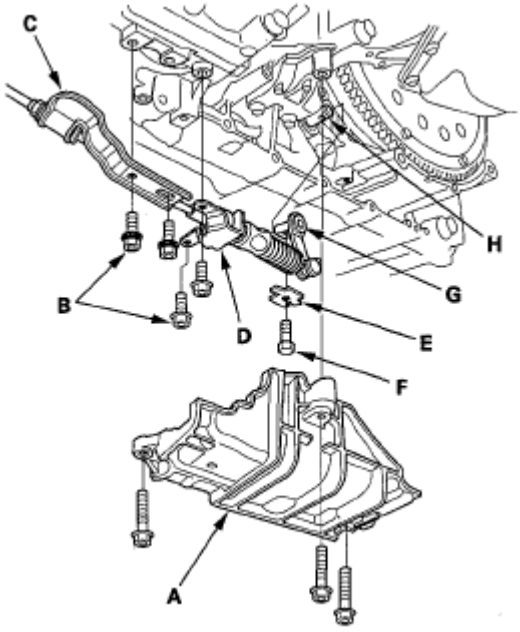


Fig. 228: Identifying Shift Cable Cover And Shift Cable Bracket With Shift Cable Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Pry up the lock tab of the lock washer (E), and remove the lock bolt (F) and the lock washer, then separate the control lever (G) from the selector control shaft (H). Do not bend the shift cable excessively.
26. Remove the shift cable cover bracket.

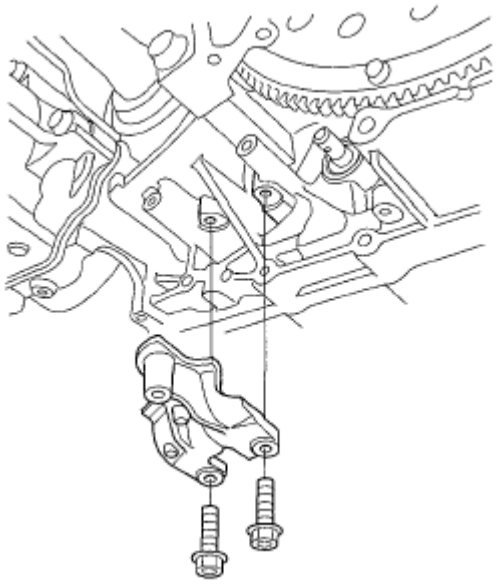


Fig. 229: Identifying Shift Cable Cover Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Disconnect the ATF cooler hose (A) from the ATF cooler line (B), then plug the end of the hose.

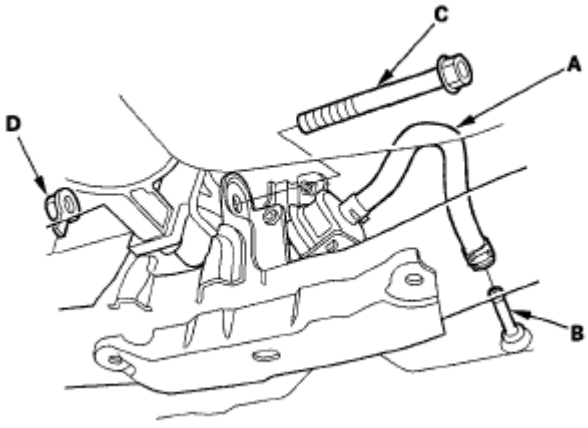


Fig. 230: Identifying ATF Cooler Hose And ATF Cooler Line With Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Remove the front mount bolt (C) and nut (D).
29. Remove the rear mount bolts.

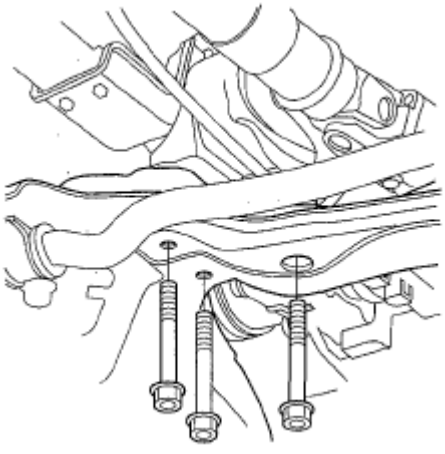


Fig. 231: Identifying Rear Mount Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Make the appropriate reference lines at positions A and B that line up with the center of the front subframe mounting bolts (C).

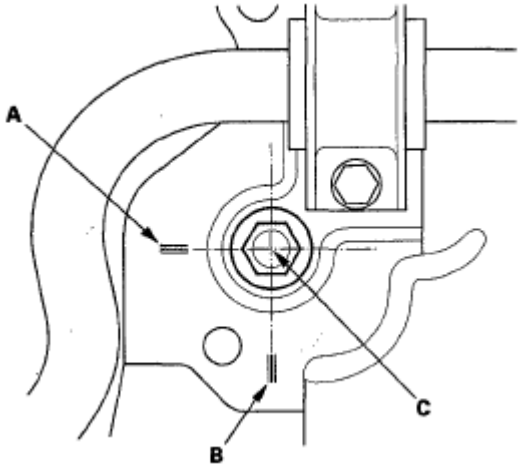


Fig. 232: Identifying Front Subframe Mounting Bolts Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Attach the front subframe adapter (VSB02C000016) to the front subframe with hanging the hook of the front subframe adapter (VSB02C000016) over the front of the front subframe, then tighten the wing nut.

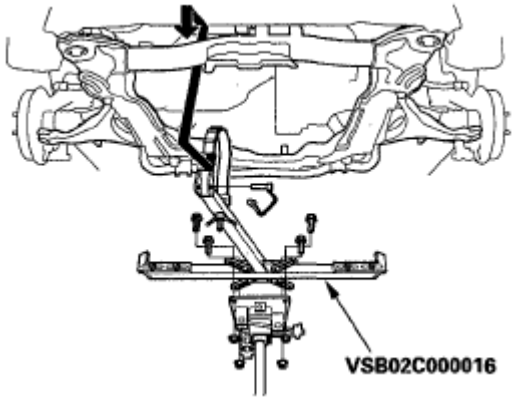


Fig. 233: Identifying Front Subframe Adapter (VSB02C000016)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Raise the jack and line up the slots in the arms with the bolt holes on the corner of the jack base, then attach them with the bolts securely.
33. Remove the four front subframe mounting bolts, then lower the front subframe.

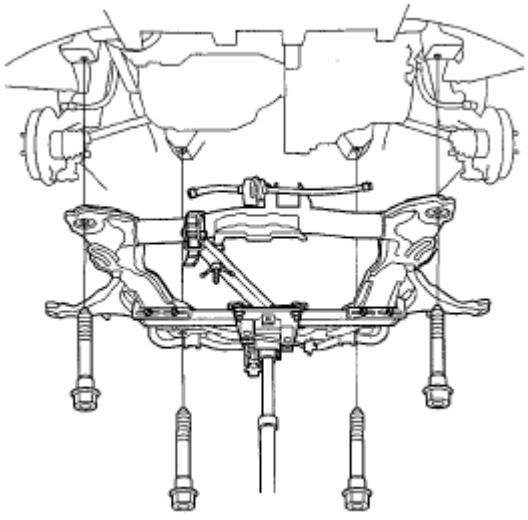


Fig. 234: Identifying Front Subframe Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. 4WD: Make a reference mark (A) across the propeller shaft (B) and the transfer companion flange (C), then separate the propeller shaft from the transfer assembly.

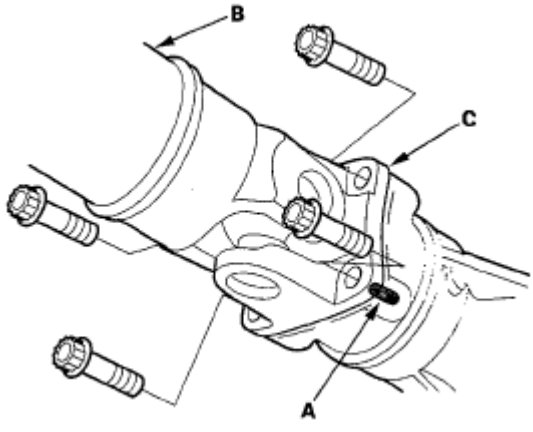


Fig. 235: Identifying Propeller Shaft And Transfer Companion Flange Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Pry the left driveshaft out of the differential (see step 9 in **FRONT DRIVESHAFT REMOVAL**).
36. Remove the driveshafts from the differential and intermediate shaft.

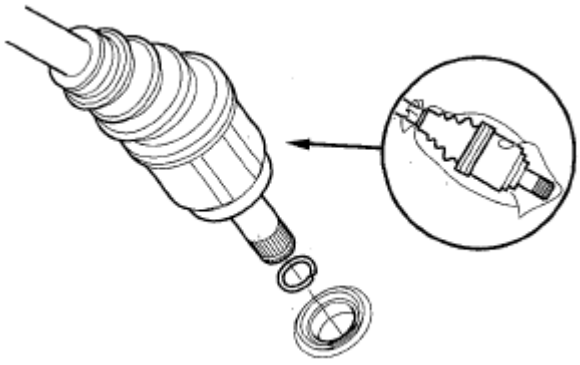


Fig. 236: Identifying Intermediate Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Remove the intermediate shaft cover (A).

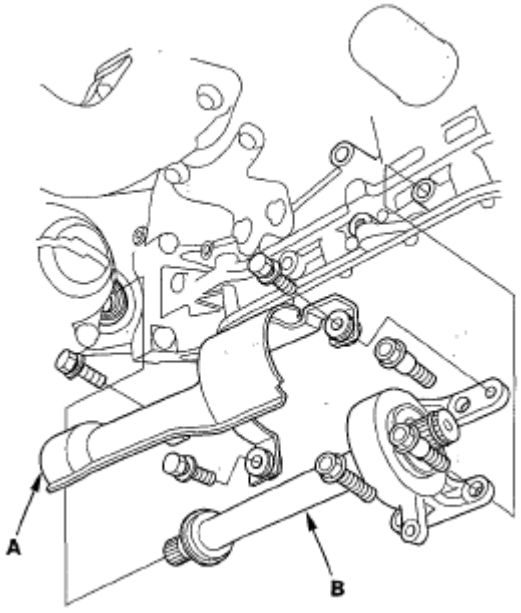


Fig. 237: Identifying Intermediate Shaft Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Remove the intermediate shaft (B). Coat all precision finished surfaces with clean engine oil, then tie plastic bags over the driveshaft and intermediate shaft ends.
39. Place a jack under the transmission.
40. Remove the transmission housing upper mounting bolts.

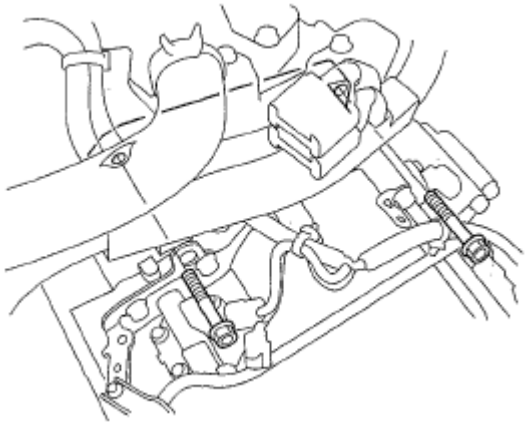


Fig. 238: Identifying Transmission Housing Upper Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Remove the transmission mount bracket bolt (A) and nuts (B), then remove the transmission mount bolt (C).

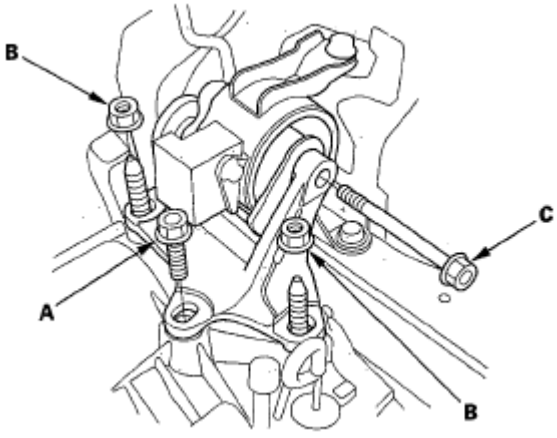


Fig. 239: Identifying Transmission Mount Bracket Bolt And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Remove the transmission housing front mounting bolts located on front lower of the transmission.

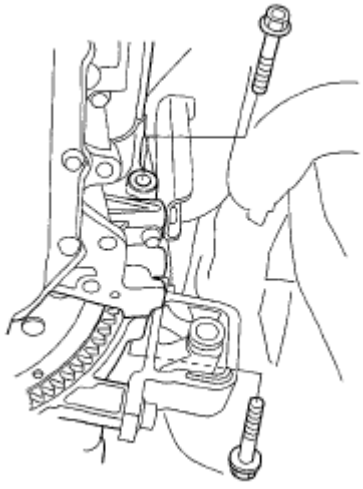


Fig. 240: Identifying Transmission Housing Front Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Remove the transmission housing rear mounting bolts located on rear lower of the transmission.

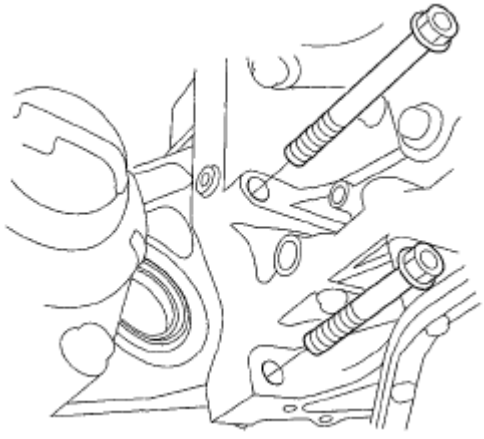


Fig. 241: Identifying Transmission Housing Rear Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Slide the transmission away from the engine to remove it from the vehicle.
45. Remove the torque converter assembly.

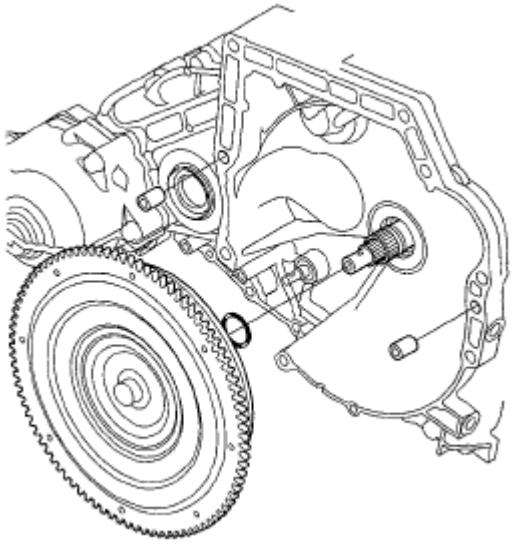


Fig. 242: Identifying Torque Converter Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Remove the front mount.

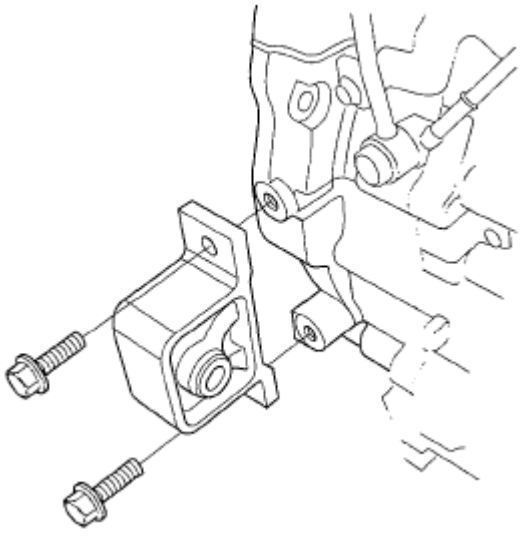


Fig. 243: Identifying Front Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Remove the rear mount/bracket.

NOTE: The illustration shows the 4WD transmission; the 2WD transmission is similar.

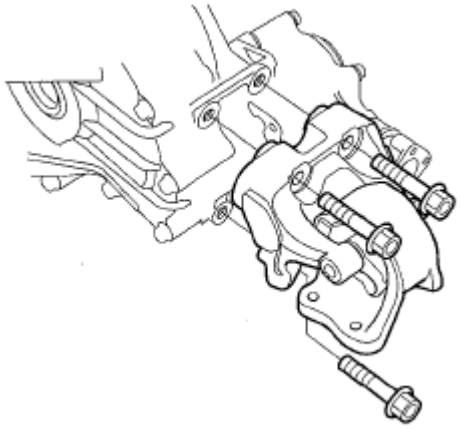


Fig. 244: Identifying Rear Mounting Bolts And Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Remove the air cleaner housing mounting bracket.

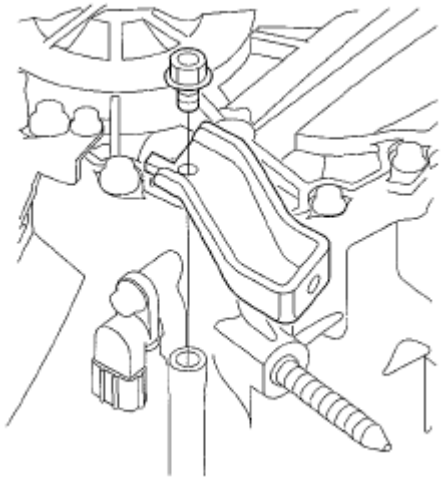


Fig. 245: Identifying Air Cleaner Housing Mounting Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Inspect the drive plate, and replace it if it's damaged.

DRIVE PLATE REMOVAL AND INSTALLATION

1. Remove the transmission assembly (see **TRANSMISSION REMOVAL**).
2. Remove the drive plate (A) and washer (B) from the engine.

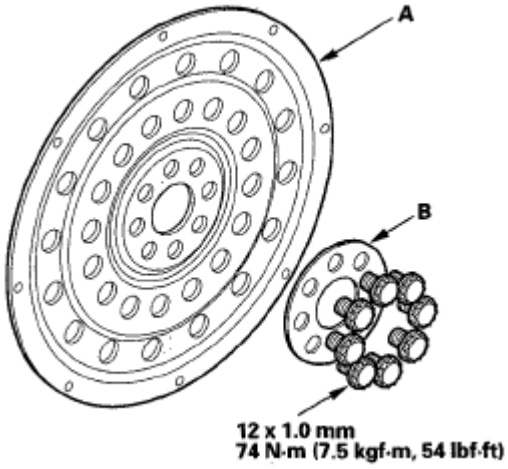


Fig. 246: Identifying Drive Plate And Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the drive plate and washer on the engine, and tighten the eight bolts in a crisscross pattern in two or more steps.
4. Install the transmission assembly (see **TRANSMISSION INSTALLATION**).

TRANSMISSION INSTALLATION

Special Tools Required

- Engine hanger adapter VSB02C000015
- Engine support hanger, A and Reds AAR-T-12566
- Front subframe adapter VSB02C000016 (Available through the Honda Tool and Equipment Program 1-888-424-6857)

NOTE: Use fender covers to avoid damaging pained surfaces.

1. Clean the ATF cooler (see **ATF COOLER CLEANING**).
2. Install the air cleaner housing mounting bracket.

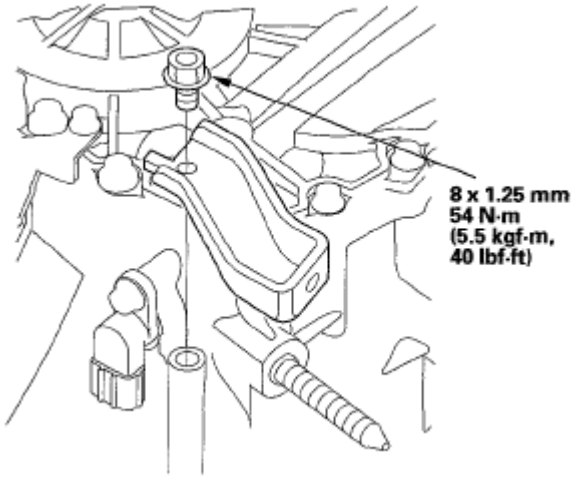


Fig. 247: Identifying Air Cleaner Housing Mounting Bracket And Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the front mount.

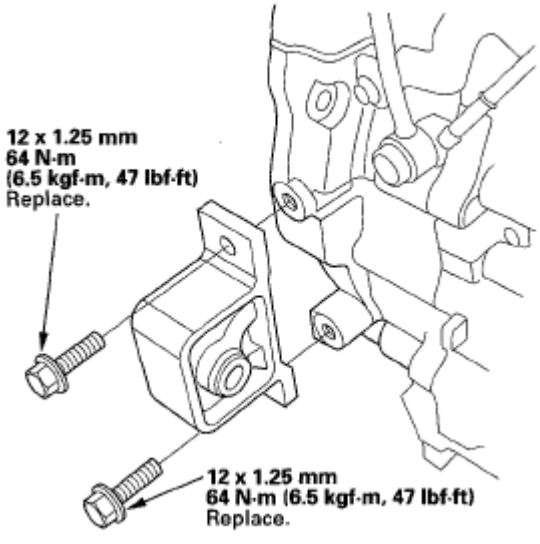


Fig. 248: Identifying Front Mounting Bracket With Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the rear mount/bracket.

NOTE: The illustration shows the 4WD transmission; the 2WD transmission is similar.

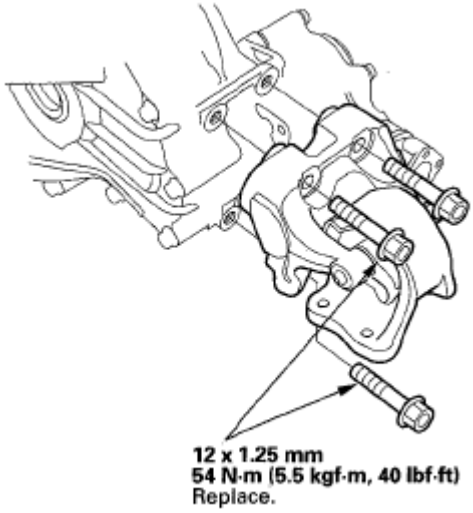


Fig. 249: Identifying Rear Mounting Bracket With Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the torque converter assembly (A) on the mainshaft (B) with a new O-ring (C).

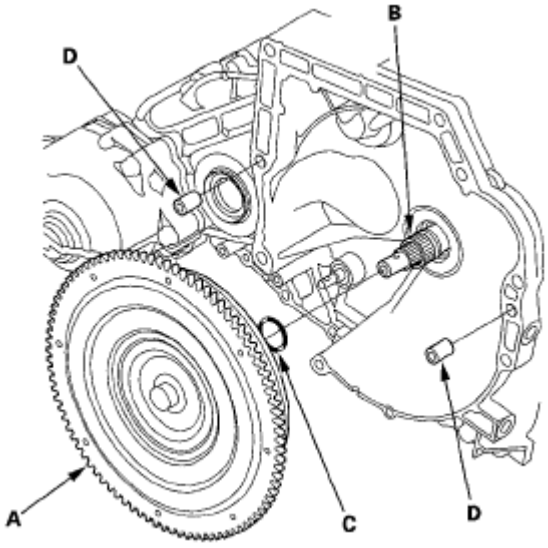


Fig. 250: Identifying Torque Converter Assembly On Mainshaft With O-Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the 14 x 20 mm dowel pins (D) in the torque converter housing.
7. Place the transmission on a jack, and raise the transmission to the engine level.
8. Attach the transmission to the engine, then install the transmission housing rear mounting bolts.

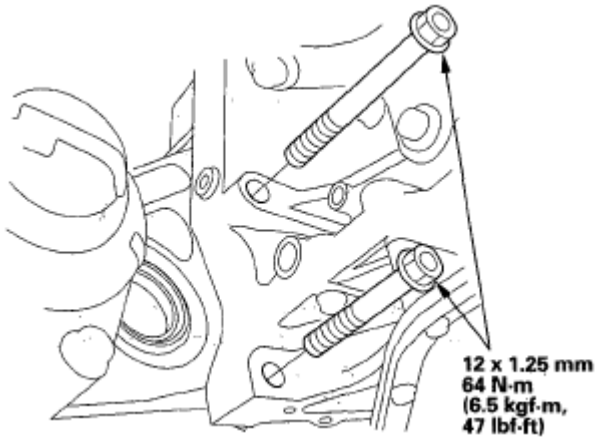


Fig. 251: Identifying Transmission Housing Rear Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the transmission housing front mounting bolts.

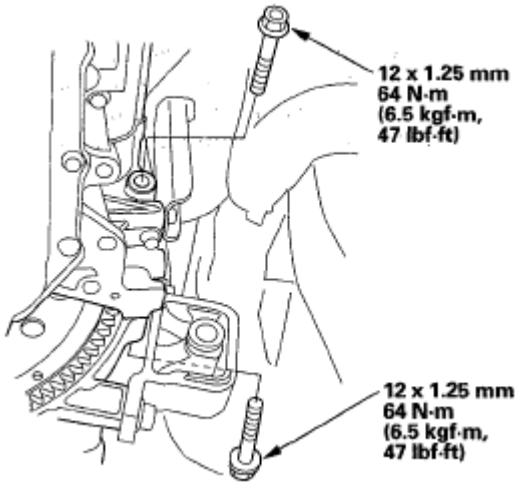


Fig. 252: Identifying Transmission Housing Front Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the transmission housing upper mounting bolts.

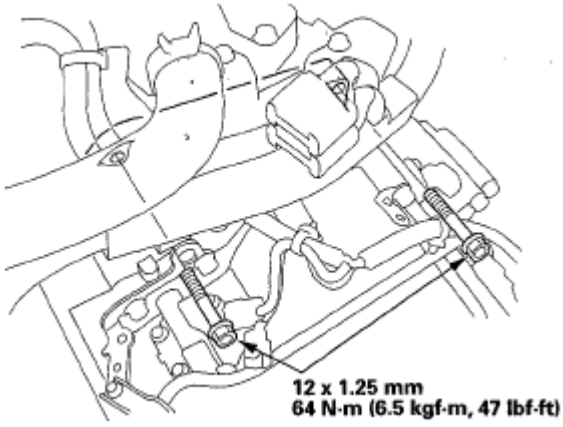


Fig. 253: Identifying Transmission Housing Upper Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the transmission mount bracket. Tighten the mount bolt (A) loosely, and tighten the transmission mount bracket bolt and nuts to the specified torque, then tighten the mount bolt to the specified torque.

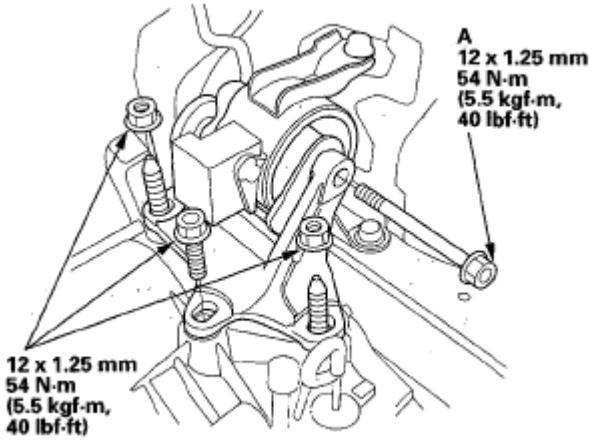


Fig. 254: Identifying Transmission Mount Bracket Bolt And Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install a new set ring (A) on the intermediate shaft (B).

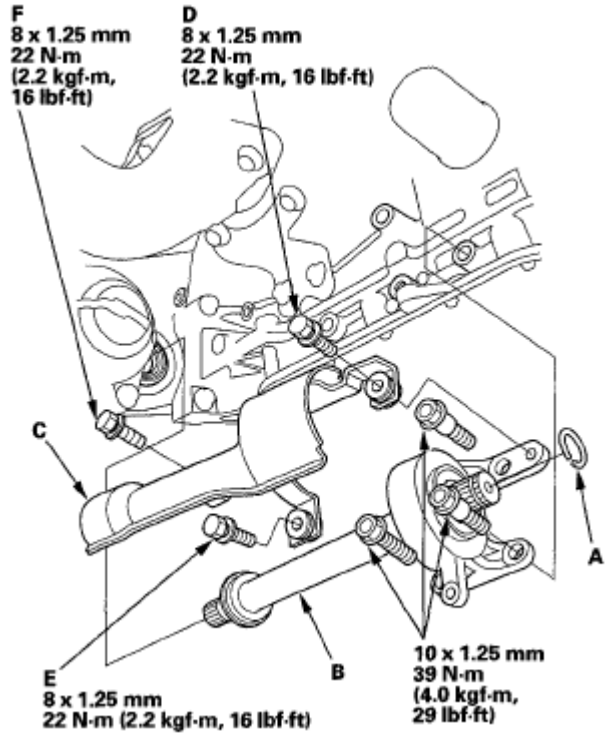


Fig. 255: Identifying Intermediate Shaft Cover And Upper / Lower Right Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Clean the areas where the intermediate shaft contacts the transmission (differential) with solvent, and dry with compressed air. Then install the intermediate shaft in the differential. While installing the intermediate shaft, be sure not to allow dust or other foreign particles to enter the transmission.
14. Install the intermediate shaft cover (C), but do not tighten the bolts.
15. Tighten the upper right bolt (D) on the cover first, then lower right bolt (E), and lastly the left bolt (F).
16. Install a new set ring (A) on the left driveshaft (B).

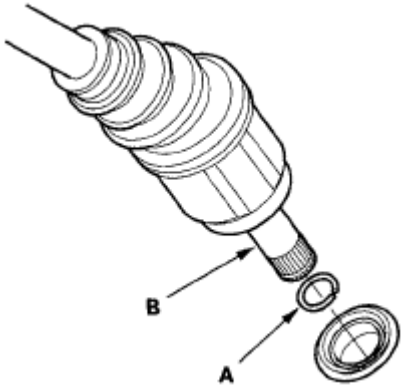


Fig. 256: Identifying Set Ring On Left Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the right and left driveshaft (see **FRONT DRIVESHAFT INSTALLATION**). While installing the left driveshaft in the differential, be sure not to allow dust or other foreign particles to enter the transmission.

NOTE:

- **Clean the areas where the left driveshaft contacts the transmission (differential) with solvent, and dry with compressed air.**
- **Turn the right and left steering knuckle fully outward, and slide the left driveshaft into the differential until you feel its set ring engage the side gear. Slide the right driveshaft over the intermediate shaft splines until you feel the driveshaft engage the intermediate shaft set ring.**

18. Install the propeller shaft (A) to the transfer companion flange (B) by aligning the reference mark(C).

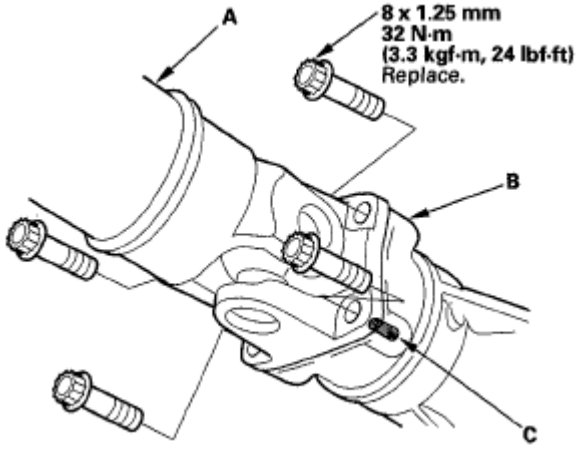


Fig. 257: Identifying Propeller Shaft And Transfer Companion Flange With Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Support the front subframe with the front subframe adapter (VSB02C000016) and a jack, and lift it up to body.

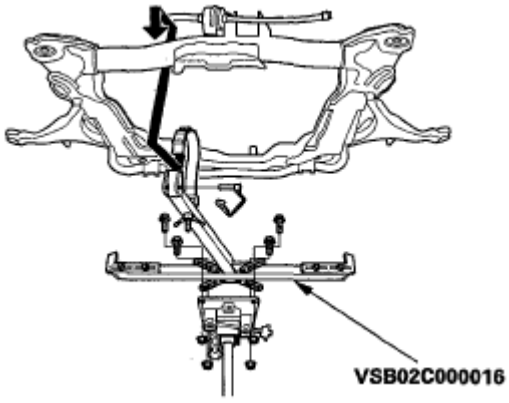


Fig. 258: Supporting Front Subframe With Front Subframe Adapter (VSB02C000016)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Loosely install the new front subframe mounting bolts.

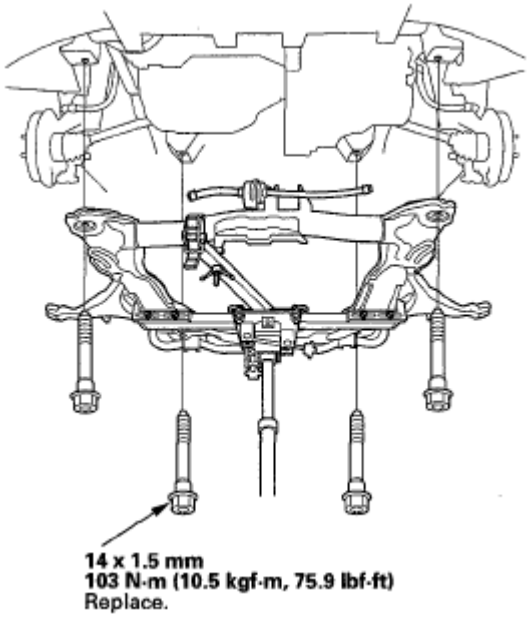


Fig. 259: Identifying Front Subframe Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Align the reference marks (A) with the center of the front subframe mounting bolts (B), then tighten the bolts to the specified torque.

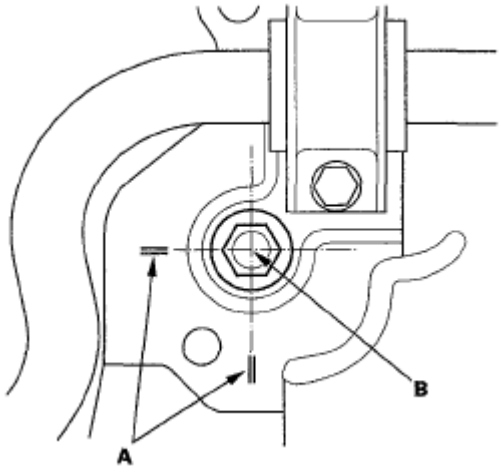


Fig. 260: Aligning Reference Marks With Center Of Front Subframe Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the rear mount bolts.

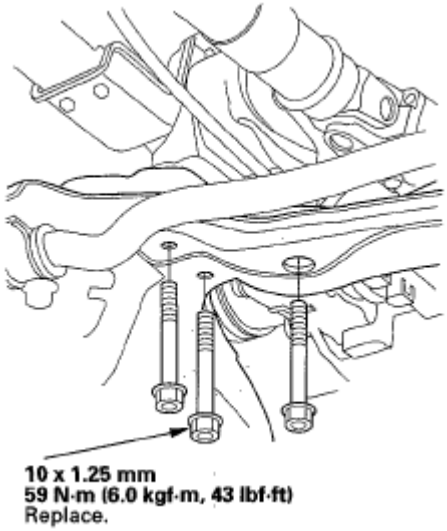


Fig. 261: Identifying Rear Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the front mount bolt (A) and nut (B), connect the ATF cooler hose (C) to the ATF cooler line, then secure the hose with the clip (see **ATF COOLER HOSE REPLACEMENT**).

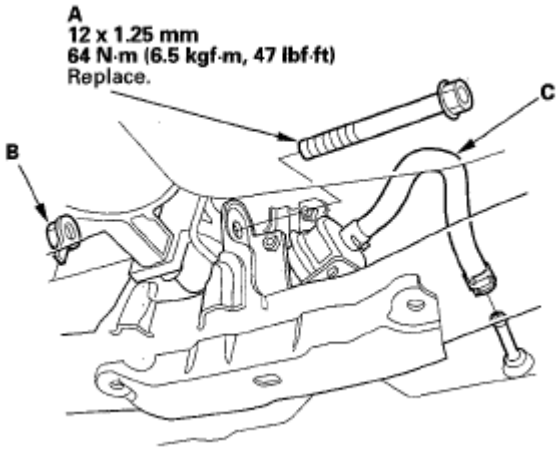


Fig. 262: Identifying ATF Cooler Hose With Front Mount Bolt And Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the shift cable cover bracket.

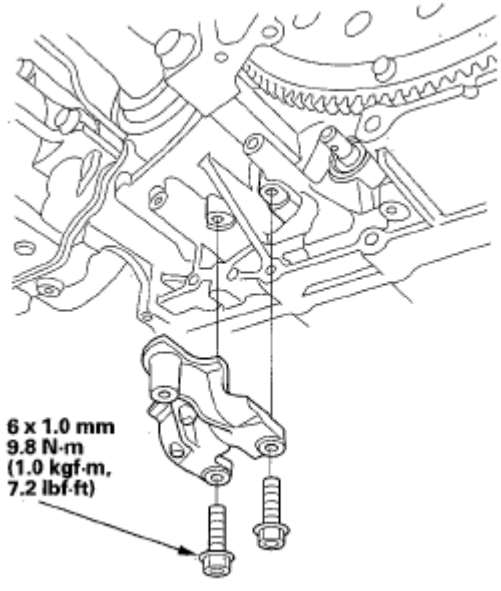


Fig. 263: Identifying Shift Cable Cover Bracket With Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the control lever (A) over the selector control shaft (B). Secure the control lever with a new lock washer (C) and the lock bolt (D), then bend the lock tab of the lock washer against the bolt head.

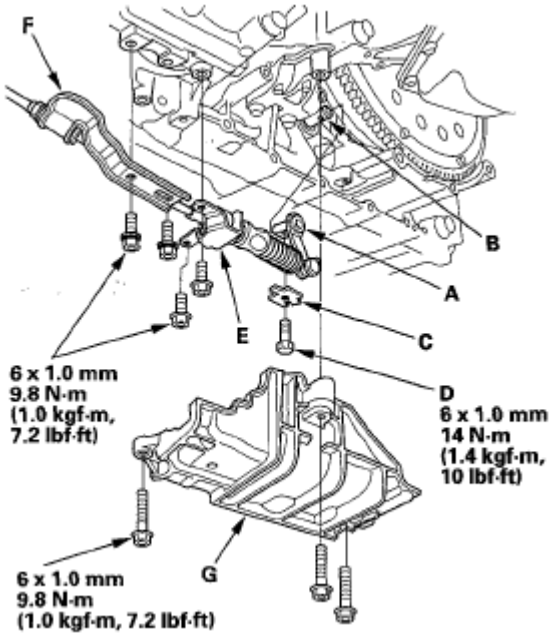


Fig. 264: Identifying Control Lever And Selector Control Shaft With Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Install the shift cable holder (E) and the shift cable bracket (F), then install the shift cable cover (G).
27. Attach the torque converter to the drive plate with eight bolts (A). Rotate the crankshaft pulley as necessary to tighten the bolts to 1/2 of the specified torque, then to the final torque, in a crisscross pattern. After tightening the last bolt, check that the crankshaft rotates freely.

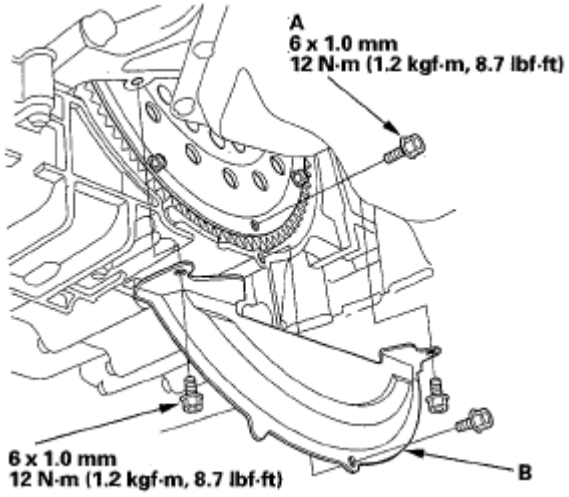


Fig. 265: Identifying Torque Converter Cover With Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the torque converter cover (B).

29. Connect the ball joints (A) to the lower arms (B), and install the castle nuts (C) and lock pins (D). Keep the ball joint threads free of grease. Install the lock pins from the inside of the vehicle, with their hooked sides facing the front (E) of the vehicle in the direction shown.

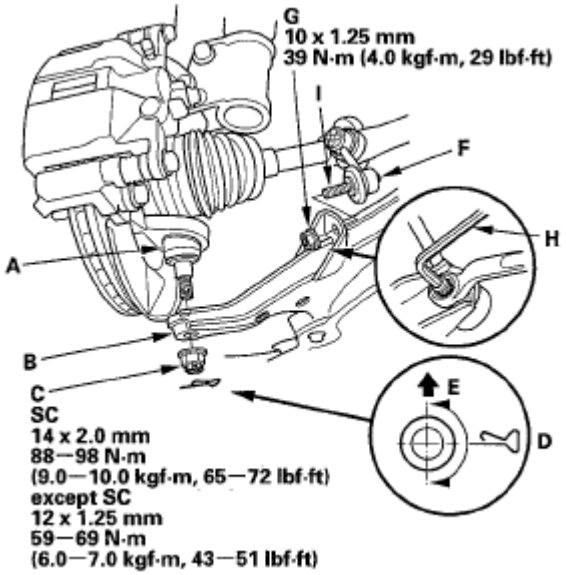


Fig. 266: Identifying Ball Joints And Lower Arms With Castle Nuts And Lock Pins With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Connect the ball joints (F) to the lower arms, and install the nuts (G). Insert a 5 mm hex wrench (H) in the top of the ball joint pins (I), and tighten the nuts.
31. Remove the engine support hanger (AAR-T-12566), and remove the engine hanger adapter (VSB02C000015) from the engine.

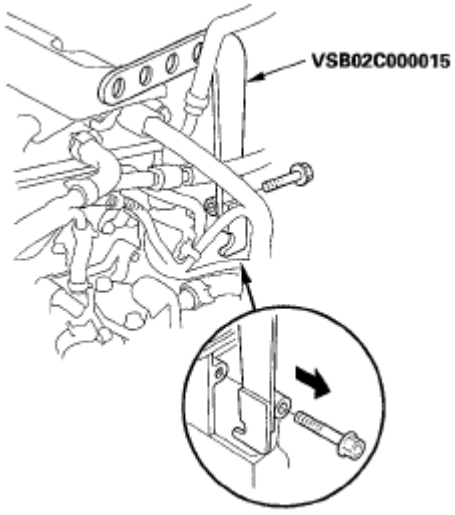


Fig. 267: Identifying Engine Hanger Adapter (VSB02C000015) From Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Install the bolts securing the water line and harness bracket.

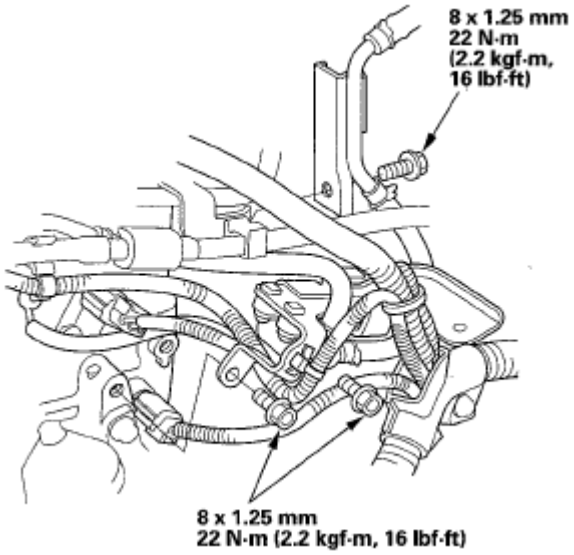


Fig. 268: Identifying Water Line And Harness Bracket With Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Connect the ATF cooler hoses (A) to the ATF cooler lines (B) (see **ATF COOLER HOSE REPLACEMENT**).

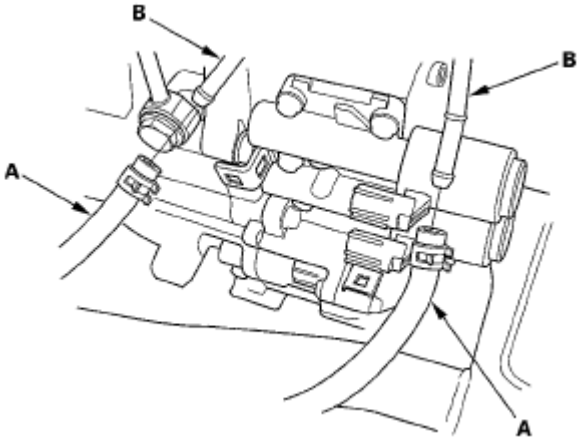


Fig. 269: Connecting ATF Cooler Hoses To ATF Cooler Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Connect the shift solenoid harness connector (A), A/T clutch pressure control solenoid valve B connector (B), and A/T clutch pressure control solenoid valve C connector (C). Install the harness clamps (D) on the clamp brackets (E).

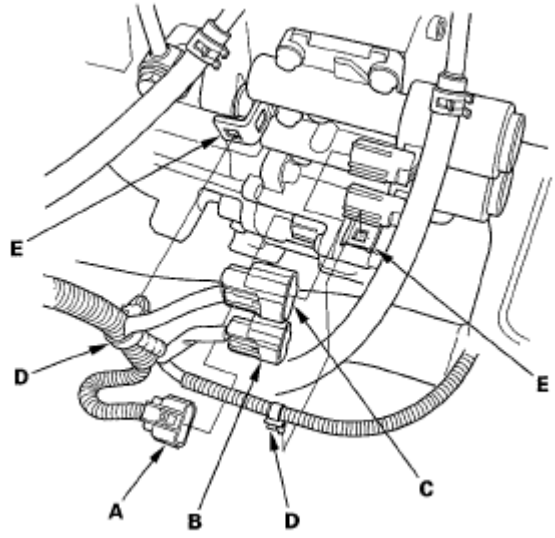


Fig. 270: Identifying Shift Solenoid Harness Connector And A/T Clutch Pressure Control Solenoid Valve B Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Connect the 3rd clutch transmission fluid pressure switch connector.

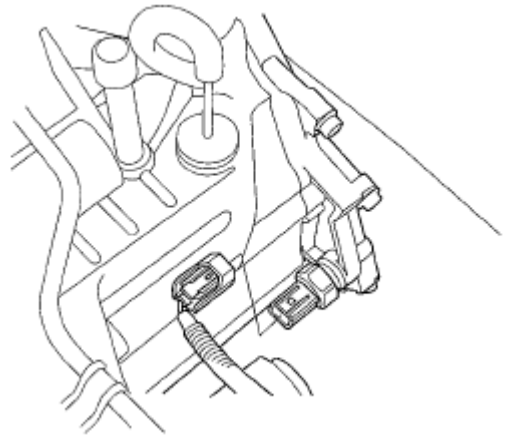


Fig. 271: Identifying 3rd Clutch Transmission Fluid Pressure Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Connect the transmission range switch connector (A).

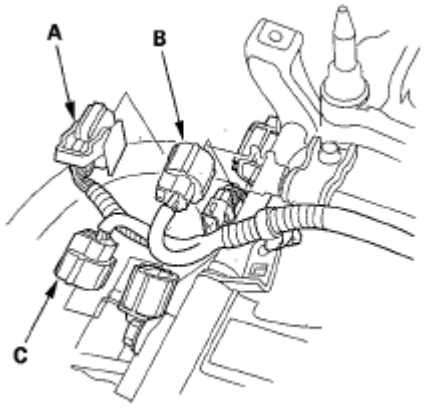


Fig. 272: Identifying Transmission Range Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Connect the input shaft (mainshaft) speed sensor connector (B) and output shaft (countershaft) speed sensor connector (C).
38. Connect the A/T clutch pressure control solenoid valve A connector (A) and 2nd clutch transmission fluid pressure switch connector (B), and install the harness clamps (C) on the clamp brackets (D).

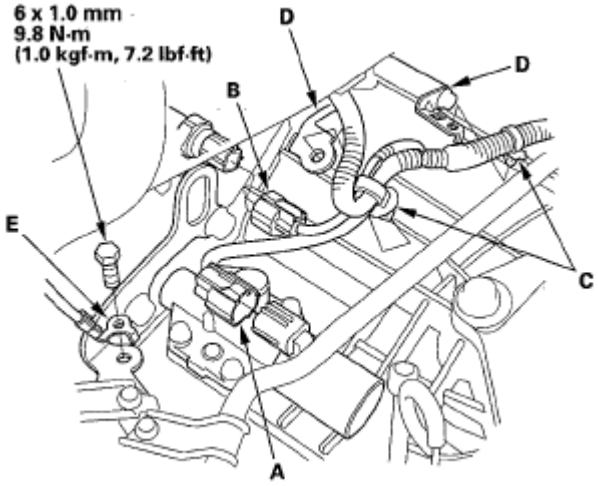


Fig. 273: Identifying A/T Clutch Pressure Control Solenoid Valve A Connector And 2nd Clutch Transmission Fluid Pressure Switch Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Install the transmission ground terminal (E).
40. Install the battery base, then install the harness clamp on the clamp bracket on the base.
41. Refill the transmission with ATF (see step 5).
42. Install the intake air duct and air cleaner assembly.
43. Install the battery tray and battery, then secure the battery with its hold-down bracket.
44. Clean the battery posts and cable terminals, then assemble them.

45. Set the parking brake. Start the engine, and shift the transmission through all gears three times.
46. Check the shift lever operation, A/T gear position indicator operation, and shift cable adjustment.
47. Check and adjust the front wheel alignment (see **WHEEL ALIGNMENT**).
48. Install the splash shield.
49. Start the engine in the P or N position, and warm it up to normal operating temperature (the radiator fan comes on).
50. Turn off the engine, and check the ATF level (see **ATF LEVEL CHECK**).
51. Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
52. Do the road test (see **ROAD TEST**).
53. Loosen the bolts of the front mount, rear mount, and transmission mount after the road test.
54. Tighten the transmission mount bolt to 54 N.m (5.5 kgf.m, 40 lbf.ft), tighten the rear mount bolt to 64 N.m (6.5 kgf.m, 47 lbf.ft), and lastly tighten the front mount bolt to 64 N.m (6.5 kgf.m, 47 lbf.ft).
55. Enter the anti-theft code for the audio system, then enter the audio presets, and set the clock.

ATF COOLER CLEANING

Special Tools Required

- ATF cooler cleaner GHTTTCF6H
- Magnetic nonbypass spin-on filter GTHGNBP2 (Available through the Honda Tool and Equipment Program 1-888-424-6857)

Before installing an overhauled or remanufactured automatic transmission, you must thoroughly clean the ATF cooler to prevent system contamination. Failure to do so could cause a repeat automatic transmission failure.

The cleaning procedure involves heated ATF-Z1 delivered under high pressure (100 psi). Check the security of all hoses and connections. Always wear safety glasses or a face shield, along with gloves and protective clothing. If you get ATF in your eyes or on your skin, rinse with water immediately.

WARNING:

- **Improper use of the ATF cooler cleaner can result in burns and other serious injuries.**
- **Always wear eye protection and protective clothing, and follow this procedure.**

1. Check the fluid in the cooler cleaner tank. (The fluid level should be 4.5 inches from the top of the filler neck.) Adjust the level if needed; do not overfill. Use only Honda ATF-Z1; do not use any additives.

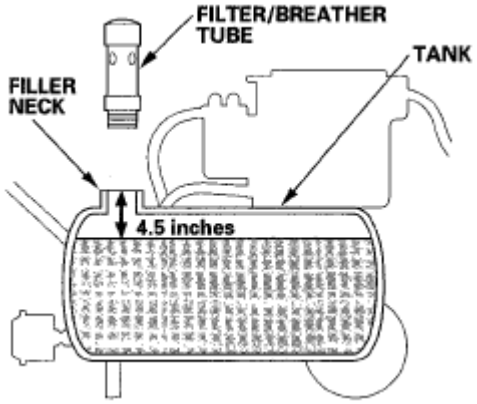


Fig. 274: Checking Fluid In Cooler Cleaner Tank
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Plug the cooler cleaner into a 110 V grounded electrical outlet.

NOTE: Make sure the outlet has no other appliances (light fixtures, drop lights, extension cords) plugged into it. Also, never plug the cooler cleaner into an extension cord or drop light; you would damage the unit.

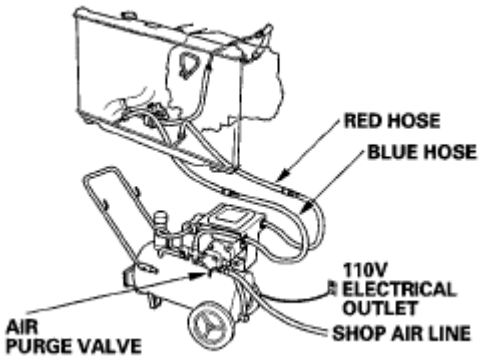


Fig. 275: Identifying Cooler Cleaner Into 110 V Grounded Electrical Outlet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Flip the HEAT toggle switch to ON; the green indicator above the toggle switch comes on. Wait 1 hour for the cooler cleaner to reach its operating temperature. (The cooler cleaner is ready to use when the temperature gauge reads 140 to 150°F.)

NOTE: If the red indicator above the HEAT toggle switch comes on, the fluid level in the tank is too low for the tank heater to work (see step 1 of this procedure).

4. Select the appropriate pair of fittings, and attach them to the radiator, to the hoses, or to the banjo bolts for flow through the ATF cooler cleaner.

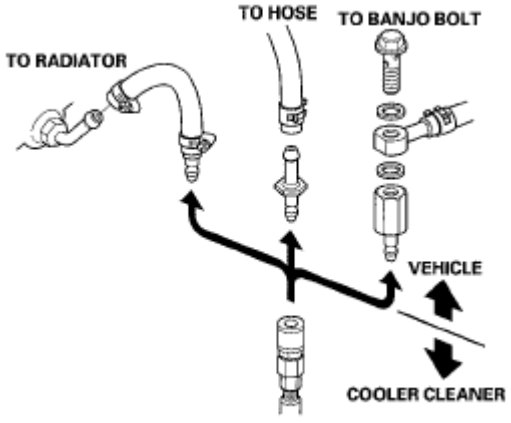


Fig. 276: Identifying Radiator Hoses Fittings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the red hose to the cooler outlet line (the line that normally goes to the external filter on the transmission).
6. Connect the blue hose to the cooler inlet line.
7. Connect a shop air hose (regulated to 100 to 125 psi) to the air purge valve.

NOTE: The quick-connect fitting has a one-way check valve to keep ATF from entering your shop's air system. Do not remove or replace the fitting. Attach the coupler provided with the cooler cleaner to your shop air line if your coupler is not compatible.

8. Flip the MOTOR toggle switch to ON; the green indicator above the toggle switch comes on. Let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically to cause agitation and improve the cleaning process. Always open the valve slowly. At the end of the 5 minutes cleaning period, leave the air purge valve open.

NOTE: While the pump is running with the air purge valve open, it is normal to see vapor coming from the filler/breather tube vents.

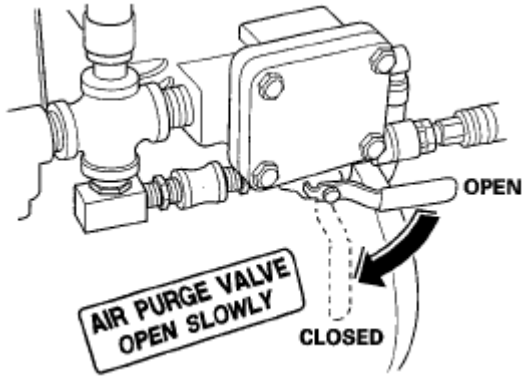


Fig. 277: Identifying Air Purge Valve Open And Closed Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. With the air purge valve open, flip the MOTOR toggle switch to OFF; the green indicator goes off. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual ATF, then close the valve.
10. Disconnect the red and blue hoses from the ATF cooler. Now connect the red hose to the cooler inlet line.
11. Now connect the blue hose to the cooler outlet line.
12. Flip the MOTOR toggle switch to ON, and let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically. Always open the valve slowly. At the end of the 5 minutes cleaning period, leave the air purge valve open:

NOTE: While the pump is running with the air purge valve open, it is normal to See vapor coming from the filler/breather tube vents.

13. With the air purge valve open, flip the MOTOR toggle switch to "OFF. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual ATF, then close the valve.
14. Disconnect the red and blue hoses from the ATF cooler lines.
15. Connect the red and blue hoses to each other.
16. Disconnect the shop air from the air purge valve. Disconnect and stow the coupler if used.
17. Disconnect and stow the fittings from the ATF cooler inlet and outlet lines.
18. Unplug the cooler cleaner from the 110 V outlet.

TOOL MAINTENANCE

Follow these instructions to keep the ATF cooler cleaner working properly:

- Replace the two magnetic nonbypass spin-on filters once a year or when you notice a restriction in the ATF flow.
- Check the level and condition of the fluid in the tank before each use.
- Replace the ATF in the tank when it looks dark or dirty.

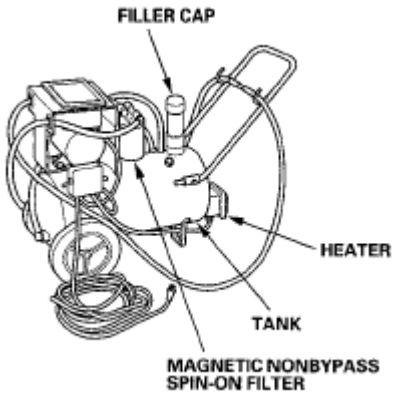


Fig. 278: Identifying Filler Cap And Heater With Tank

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ATF COOLER HOSE REPLACEMENT

1. Slide the ATF cooler hoses (A) on the ATF filter (B) until they are 5-7 mm (0.20-0.28 in.) (C) away from the filter housing.

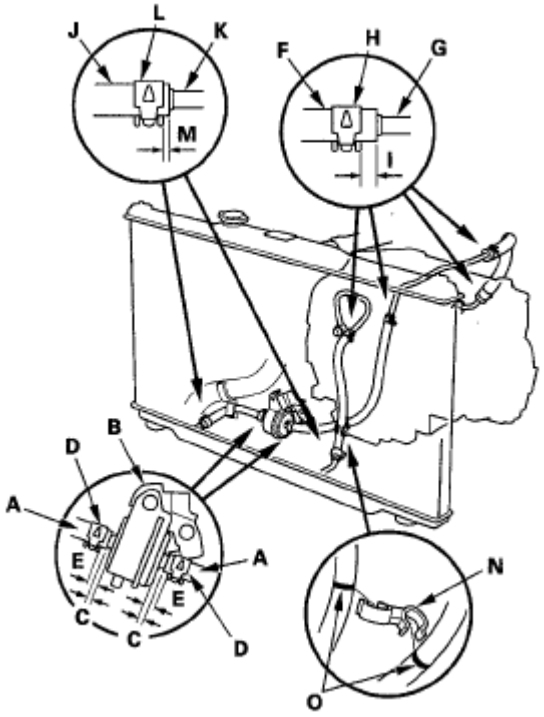


Fig. 279: Identifying ATF Cooler Hoses Dimension
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Secure the hoses with the clips (D) at 10-12 mm (0.39-0.47 in.) (E) from the filter housing.
3. Slide the ATF cooler hoses (F) over the ATF cooler lines (G), then secure the hoses with the clips (H) at 6-8 mm (0.24-0.31 in.) (I) from the hose ends.
4. Slide the ATF cooler hoses (J) over the ATF cooler lines (K) under the radiator, then secure the hose with the clips (L) at 2-4 mm (0.08-0.16 in.) (M) from the hose ends.
5. Install the hose clamp (N) at the marks (O) on the ATF cooler hoses.

SHIFT LEVER REMOVAL

1. Remove the center lower cover (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the shift lever console trim (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
3. Shift the shift lever into the R position.
4. Remove the shift cable insulator (A) from the shift cable (B).

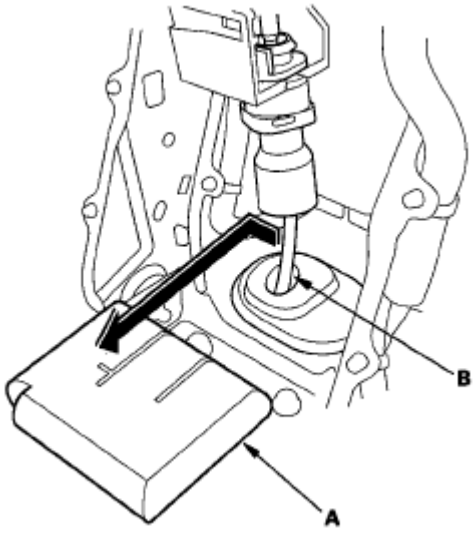


Fig. 280: Identifying Shift Cable Insulator From Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Slide the lock tab (A) down on the shift cable end holder (B).

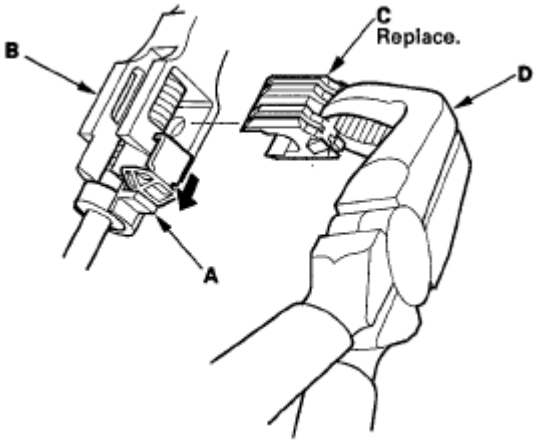


Fig. 281: Sliding Lock Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Grasp the shift cable lock (C) in the middle with angle-jaw needle-nose pliers (D), and remove it from the shift cable end and shift cable end holder. Do not pry the shift cable lock with a screwdriver, it may damage the shift cable end holder.
7. Separate the shift cable end (A) from the shift cable, end holder (B).

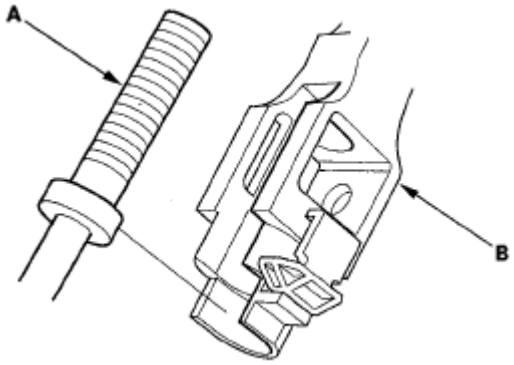


Fig. 282: Identifying Shift Cable And Shift Cable Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Rotate the socket holder (A) on the shift cable (B) a quarter turn; the tab (C) on the socket holder will be in the opening (D) of the shift cable bracket (E). Then slide the holder to remove the shift cable from the shift cable bracket. Do not remove the shift cable by twisting the shift cable guide (F) and damper (G).

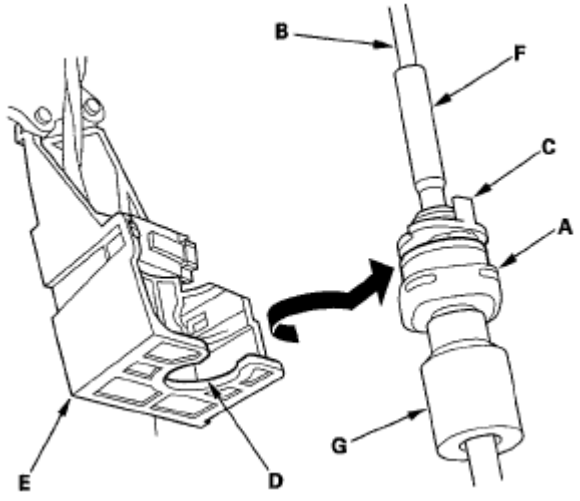


Fig. 283: Rotating Socket Holder On Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the shift lever mounting bolts:

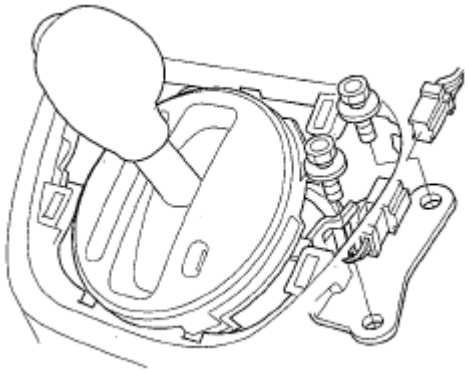


Fig. 284: Identifying Shift Lever Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the park pin switch connector.
11. Remove the shift lever mounting bolt (A), and remove the shift cable bracket (B).

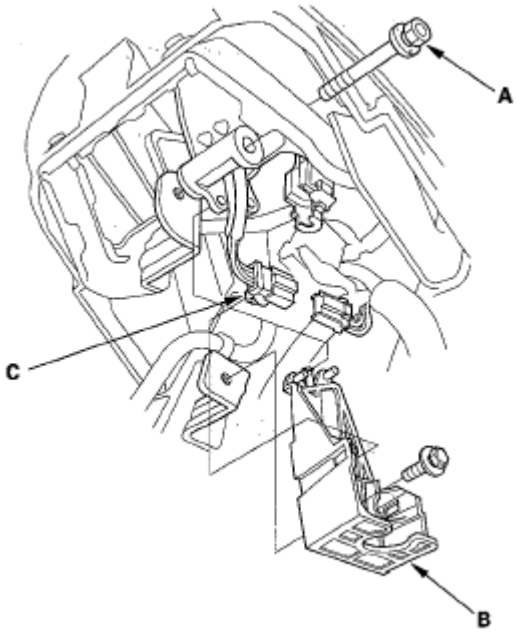


Fig. 285: Identifying Shift Lever Mounting Bolt And Shift Cable Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the D3 switch/shift lock solenoid connector (C), then disconnect the connector.
13. Cover around the opening of the console with tape to prevent damage to the console.
14. Remove the shift lever assembly.

SHIFT LEVER INSTALLATION

1. Cover around the opening of the console with tape to prevent damaging the console.

2. Position the shift lever in the console.
3. Install the shift lever mounting bolt (A) loosely.

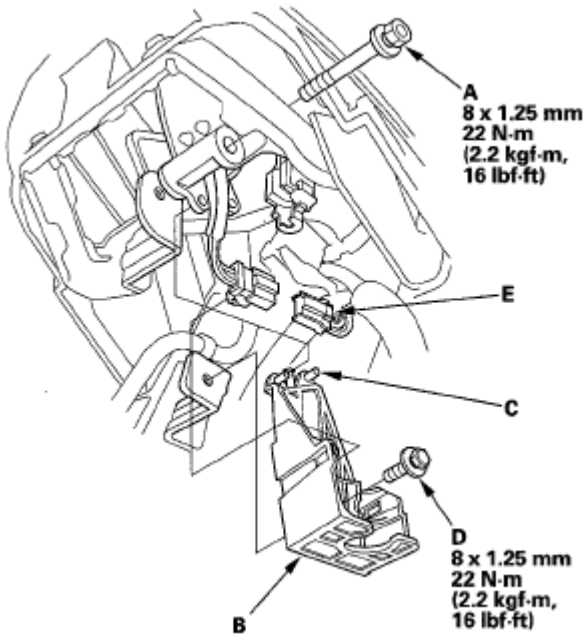


Fig. 286: Identifying Shift Lever Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the shift cable bracket (B) with aligning the projections (C) to the holes of the shift lever bracket, and install the mounting bolt (D).
5. Connect the D3 switch/shift lock solenoid connector (E), and install it on the shift cable bracket.
6. Secure the shift lever assembly with the mounting bolts.

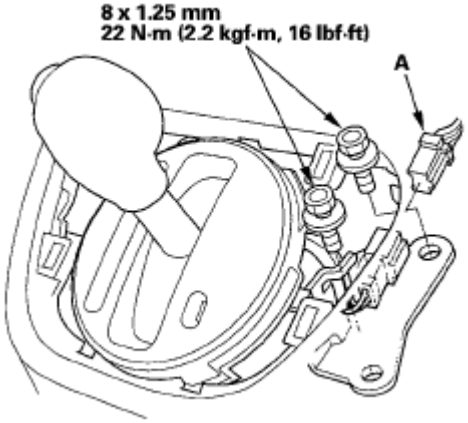


Fig. 287: Identifying Shift Lever Assembly And Mounting Bolts With Park Pin Switch Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the park pin switch connector (A).
8. Tighten the shift lever mounting bolt that was loosely installed in step 3.
9. Turn the ignition switch ON (II), and check that the R position indicator comes on.

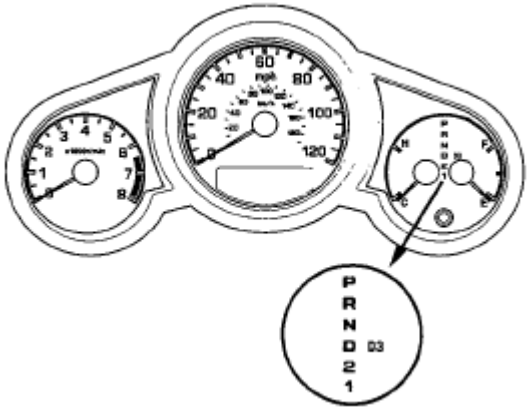


Fig. 288: Identifying D Indicator In Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Turn the ignition switch OFF.
11. Install the shift cable to the shift lever, refer to shift cable adjustment (see **SHIFT CABLE ADJUSTMENT**).

SHIFT LEVER DISASSEMBLY/REASSEMBLY

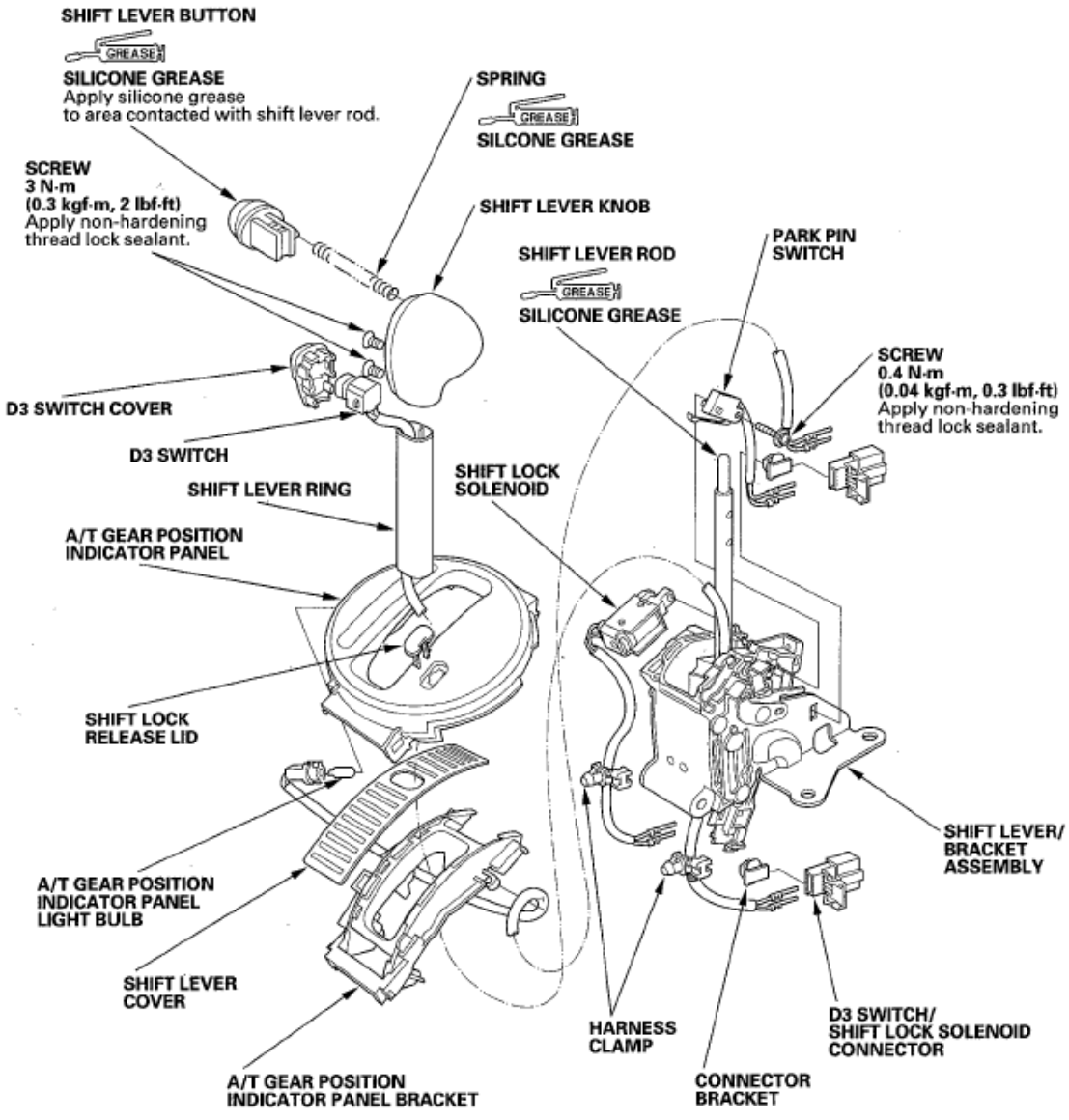


Fig. 289: Identifying Shift Lever Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LEVER BRACKET ASSEMBLY REPLACEMENT

1. Remove the shift lever assembly (see **SHIFT LEVER REMOVAL**).
2. Pry out the D3 switch cover (A), and remove it.

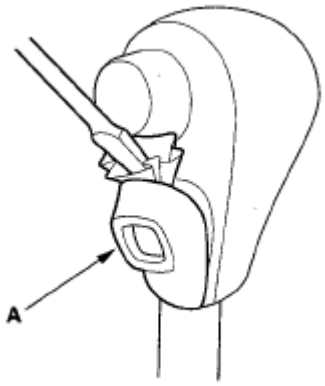


Fig. 290: Prying Out D3 Switch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the D3 switch (A) by expanding its locks, and remove the screws (B), shift lever button (C), spring (D), and shift lever knob (E).

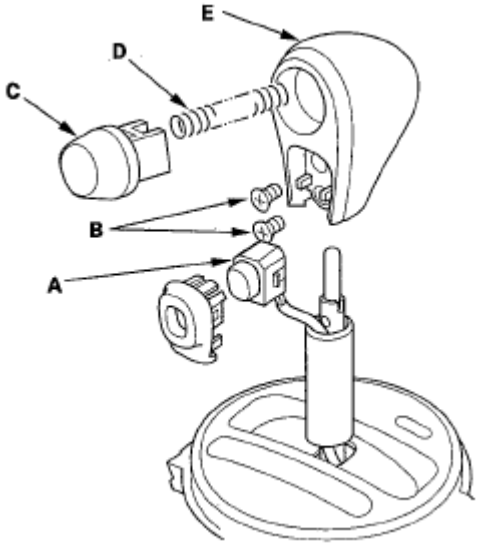


Fig. 291: Identifying Screws, Shift Lever Button, Spring And Shift Lever Knob
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the A/T gear position indicator panel light socket (A), then separate the A/T gear position indicator panel (B) from the shift lever bracket (C).

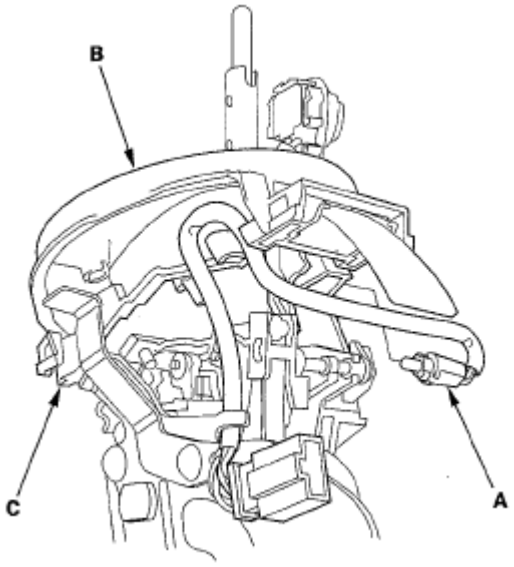


Fig. 292: Identifying A/T Gear Position Indicator Panel Light Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pry the lock tabs on the back of the D3 switch/shift lock solenoid connector (A), and remove the back cover (B).

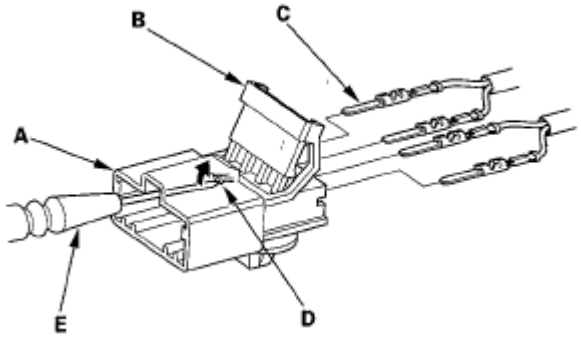


Fig. 293: Prying Lock Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the terminal (C) from the connector by pushing the lock tab (D) up in the connector using a thin blade screwdriver (E). Remove all four terminals.
7. Remove the D3 switch harness clamp from the shift lever bracket and from the harness, and pull the D3 switch harness out to remove the shift lever assembly.
8. Remove the shift lock solenoid harness clamp from the shift lever bracket, and remove the shift lock solenoid.
9. Remove the park pin switch from the shift lever bracket.
10. Replace the shift lever/bracket assembly.
11. Install the shift lock solenoid (A) on the shift lever/bracket assembly (B) with aligning the shift lock solenoid plunger (C) with the tip of the shift lock stop (D).

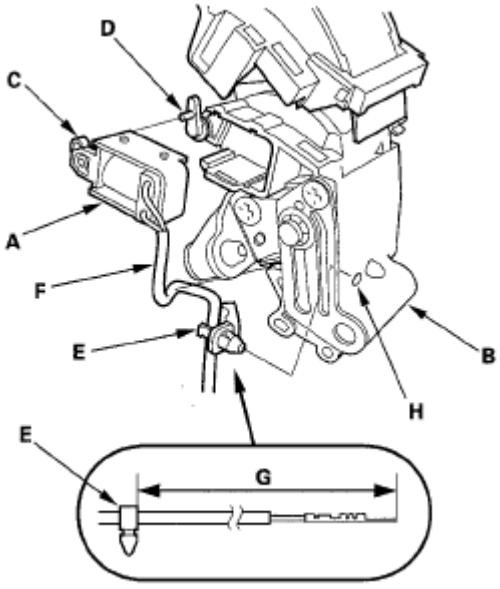


Fig. 294: Aligning Shift Lock Solenoid Plunger With Tip Of Shift Lock Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the harness clamp (E) on the shift lock solenoid harness (F) at 128-138 mm (5.0-5.4 in.) (G) from the harness terminal end.
13. Install the clamp in the hole (H) of the shift lever bracket.
14. Install the shift lever ring (A) to the shift lever (B).

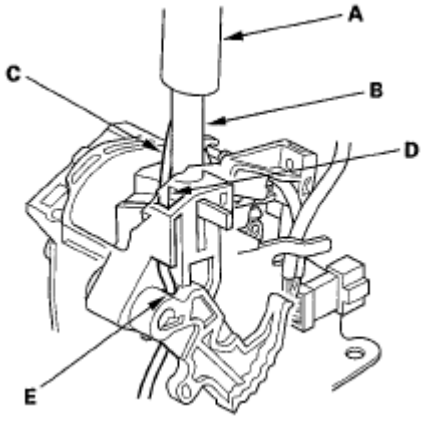


Fig. 295: Identifying Shift Lever Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Insert the D3 switch harness (C) into the shift lever ring, and route the harness through the groove (D) of the shift lever into the hole (E). Do not pinch the harness.
16. Wind the D3 switch harness (A) one turn around the clamp (B) on the bottom of the shift lever.

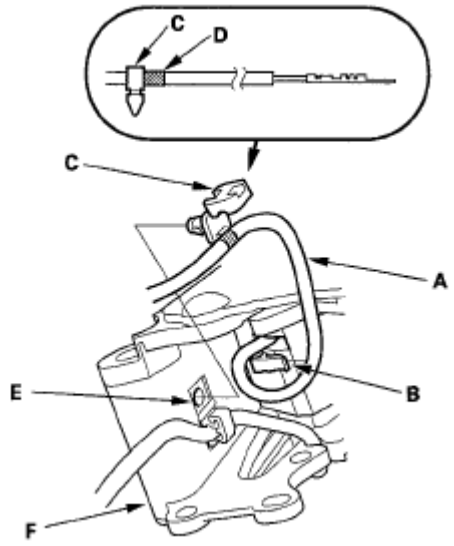


Fig. 296: Inserting D3 Switch Harness Into Shift Lever Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the harness clamp (C) at the reference tape (D) on the harness, then install the clamp in the hole (E) of the shift lever bracket (F).
18. Install the A/T gear position indicator panel (A) on the shift lever bracket Apply silicone grease to the shift lever button (B), spring (C), and push rod (D) of the shift lever (E), and install the spring, shift lever button, and shift lever knob (F). Apply non-hardening thread lock sealant to screws (G), and secure the shift lever knob to the shift lever.

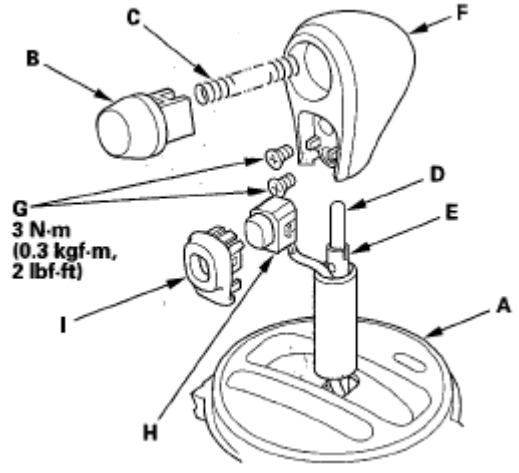


Fig. 297: Identifying D3 Switch And D3 Switch Cover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the D3 switch (H) and the D3 switch cover (I).
20. Install the park pin switch (A). Apply non-hardening thread lock sealant to screw threads, and secure the switch with the screw.

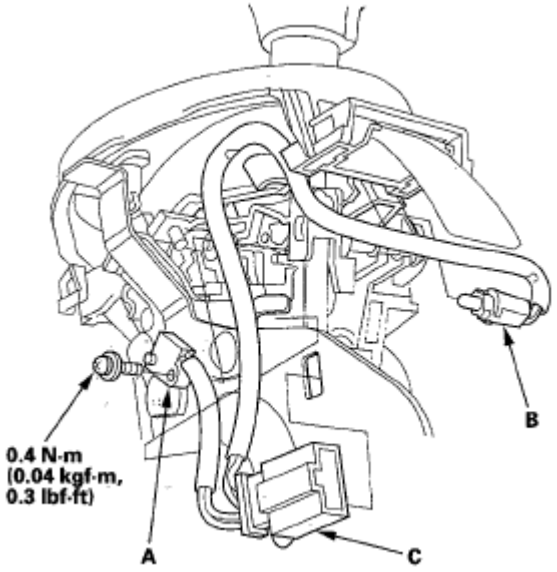


Fig. 298: Identifying A/T Gear Position Indicator Panel Light Socket And Connector With Screw With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the A/T gear position indicator panel light socket (B), and install the connector (C).
22. Install the BLU/RED harness terminal (A) of the shift lock solenoid in the No. 3 cavity, and BLK harness terminal (B) in the No. 4 cavity.

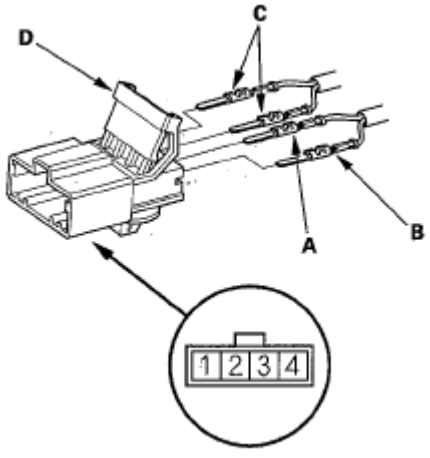


Fig. 299: Identifying Shift Lock Solenoid Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the D3 switch harness terminals (C) in the No. 1 and No. 2 cavities. Either D3 switch harness terminal can be installed in the No. 1 and No. 2 cavities.
24. Make sure that all four terminals lock securely, then install the back cover (D) securely in place.
25. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

SHIFT LEVER RING REPLACEMENT

1. Remove the shift lever assembly (see **SHIFT LEVER REMOVAL**).
2. Pry out the D3 switch cover (A), and remove it.

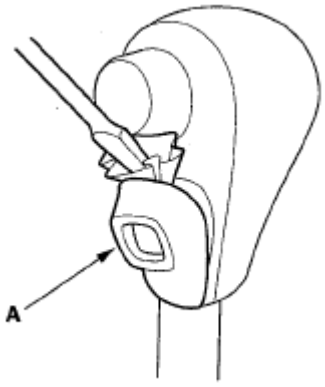


Fig. 300: Prying Out D3 Switch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the D3 switch (A) by expanding its locks, and remove the screws (B), shift lever button (C), spring (D), and shift lever knob (E).

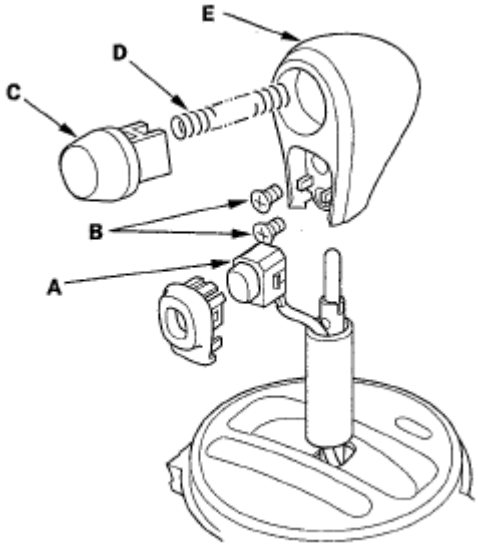


Fig. 301: Identifying Screws, Shift Lever Button, Spring And Shift Lever Knob
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the A/T gear position indicator panel light socket (A), then separate the A/T gear position indicator panel (B) from the shift lever bracket (C).

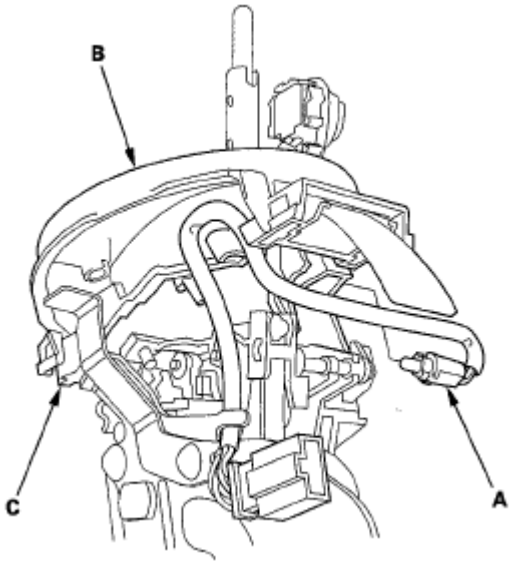


Fig. 302: Identifying A/T Gear Position Indicator Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pry the lock tabs on the back of the D3 switch/shift lock solenoid connector (A), and remove the back cover (B).

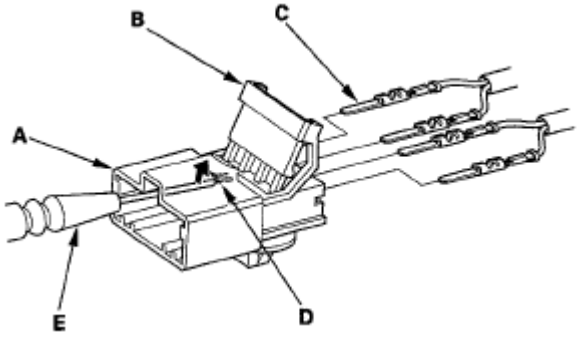


Fig. 303: Prying Lock Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the terminal (C) from the connector by pushing the lock tab (D) up in the connector using a thin blade screwdriver (E). Remove all four terminals.
7. Remove the D3 switch harness clamp from the shift lever bracket and from the harness, and pull the D3 switch harness out to remove the shift lever assembly.
8. Replace the shift lever ring, and install the new shift lever ring (A) to the shift lever (B).

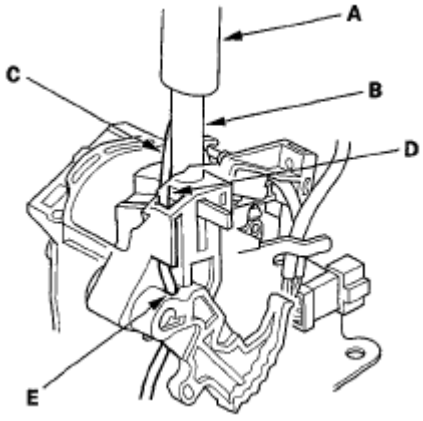


Fig. 304: Identifying Shift Lever Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Insert the D3 switch harness (C) into the shift lever ring, and route the harness through the groove (D) of the shift lever into the hole (E). Do not pinch the harness.
10. Wind the D3 switch harness (A) one turn around the clamp (B) on the bottom of the shift lever.

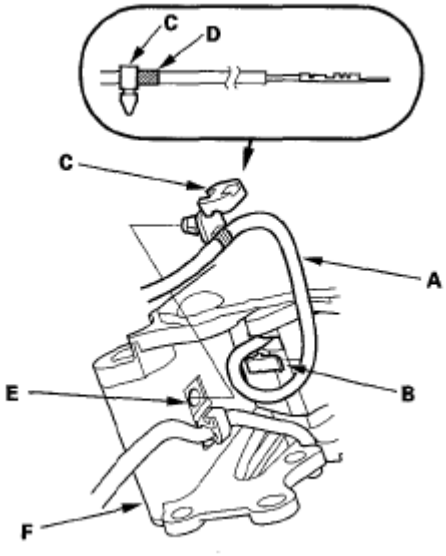


Fig. 305: Inserting D3 Switch Harness Into Shift Lever Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the harness clamp (C) at the reference tape (D) on the harness, then install the clamp in the hole (E) of the shift lever bracket (F).
12. Install the A/T gear position indicator panel (A) on the shift lever bracket. Apply silicone grease to the shift lever button (B), spring (C), and push rod (D) of the shift lever (E), and install the spring, shift lever button, and shift lever knob (F). Apply non-hardening thread lock sealant to screws (G), and secure the shift lever knob to the shift lever.

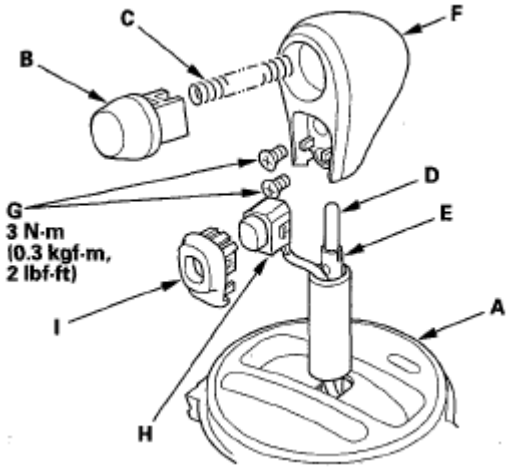


Fig. 306: Identifying D3 Switch And D3 Switch Cover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the D3 switch (H) and the D3 switch cover (I).
14. Install the A/T gear position indicator panel light socket.

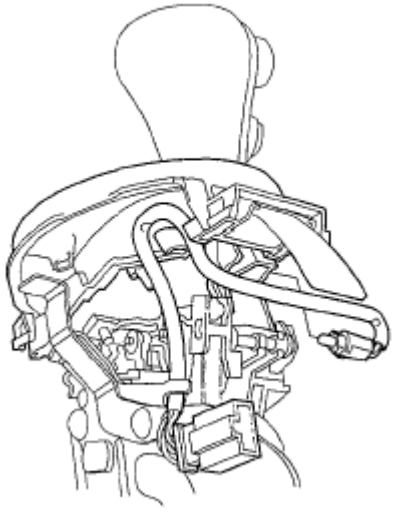


Fig. 307: Identifying A/T Gear Position Indicator Panel Light Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the BLU/RED harness terminal (A) of the shift lock solenoid in the No. 3 cavity, and BLK harness terminal (B) in the No. 4 cavity.

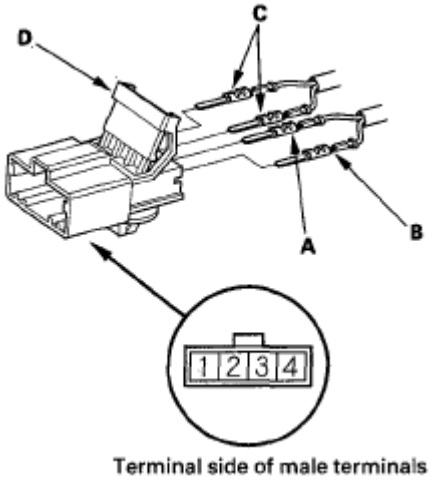


Fig. 308: Identifying Shift Lock Solenoid Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the D3 switch harness terminals (C) in the No. 1 and No. 2 cavities. Either D3 switch harness terminal can be installed in the No. 1 and No. 2 cavities.
17. Make sure that all four terminals lock securely, then install the back cover (D) securely in place.
18. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

SHIFT CABLE REPLACEMENT

1. Raise the vehicle on a lift, or block the rear wheels, raise the front of the vehicle, and make sure it is securely supported.
2. Remove the center lower cover (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
3. Shift the shift lever into the R position.
4. Remove the shift cable insulator (A) from the shift cable (B).

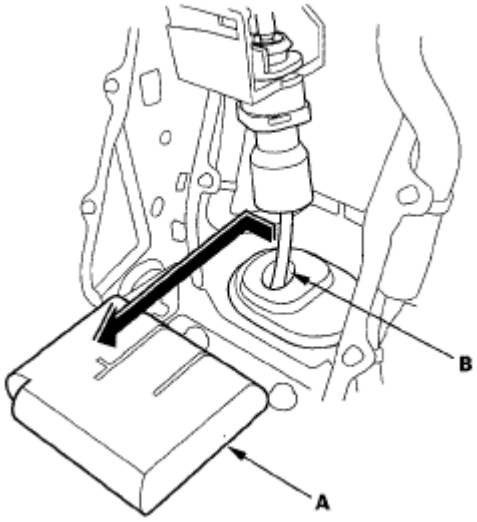


Fig. 309: Identifying Shift Cable Insulator And Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Slide the lock tab (A) down on the shift cable end holder (B).

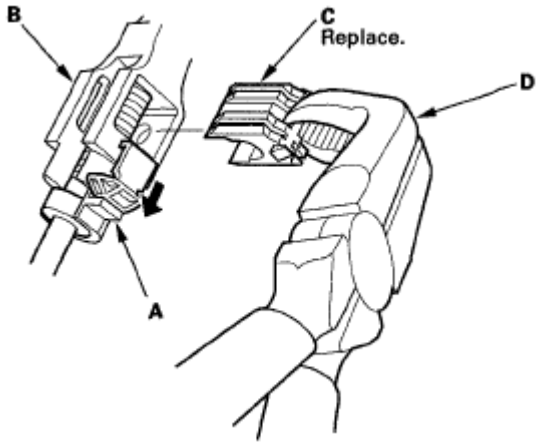


Fig. 310: Sliding Lock Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Grasp the shift cable lock (C) in the middle with angle-jaw needle-nose pliers (D), and remove it from the shift cable end and shift cable end holder. Do not pry the shift cable lock with a screwdriver, it may damage the shift cable end holder.
7. Separate the shift cable end (A) from the shift cable end holder (B).

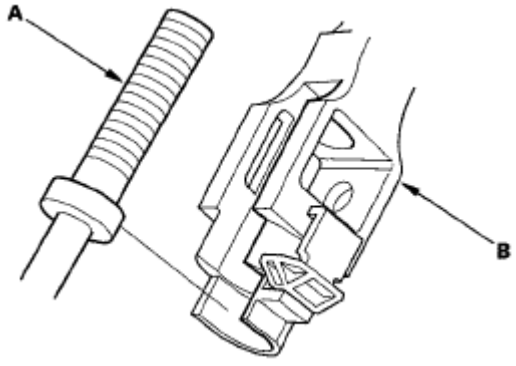


Fig. 311: Identifying Shift Cable And Shift Cable Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Rotate the socket holder (A) on the shift cable (B) a quarter turn; the tab (C) on the socket holder will be in the opening (D) of the shift cable bracket (E). Then slide the holder to remove the shift cable from the shift cable bracket. Do not remove the shift cable by twisting shift cable guide (F) and damper (G).

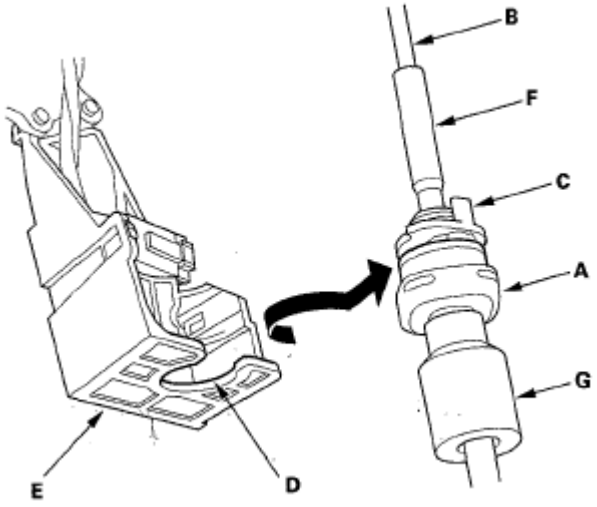


Fig. 312: Rotating Socket Holder On Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the heat shield under the body, and remove the shift cable bracket (A).

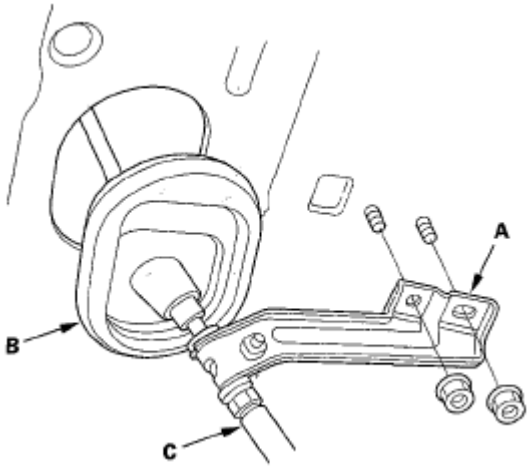


Fig. 313: Identifying Shift Cable Bracket And Grommet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the grommet (B), and pull out the shift cable (C).
11. Remove the rear mount bolts (A), and lift the rear side of the transmission with a jack, then take out the shift cable (B) from inside the rear mount and the front subframe.

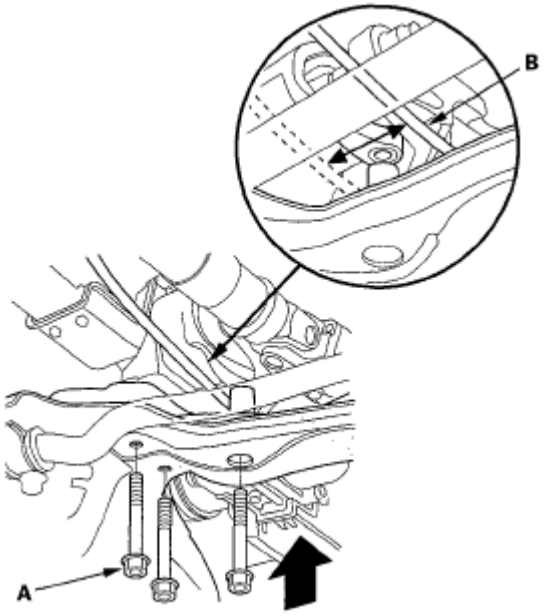


Fig. 314: Identifying Shift Cable And Rear Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the shift cable cover (A), then remove the bolts (6) securing the shift cable bracket (C) and the shift cable holder (D).

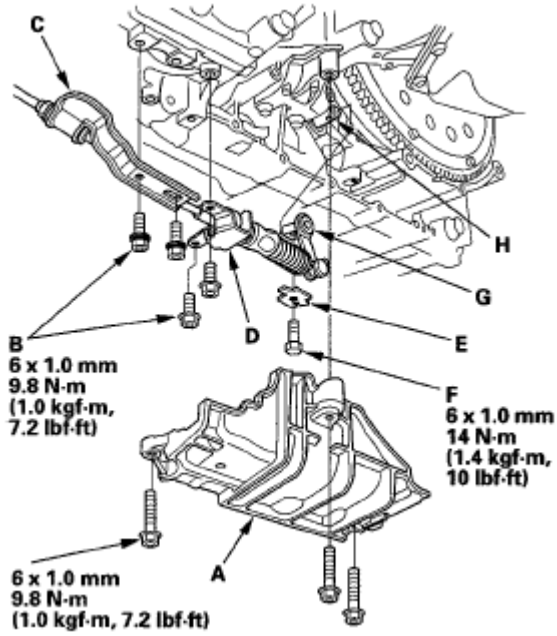


Fig. 315: Identifying Shift Cable Cover And Shift Cable Bracket With Shift Cable Holder With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Pry up the lock tab of the lock washer (E), and remove the lock bolt (F) and the lock washer, then separate the control lever (G) from the selector control shaft (H).
14. Replace the shift cable, and insert it through the grommet hole. Do not bend the shift cable excessively.
15. Install the control lever over the selector control shaft. Secure the control lever with a new lock washer and the lock bolt, the bend the lock tab of the lock washer against the bolt head.
16. Install the shift cable holder and the shift cable bracket, then install the shift cable cover.
17. Install the shift cable bracket (A) on the body, then install the grommet (B) in its hole (C).

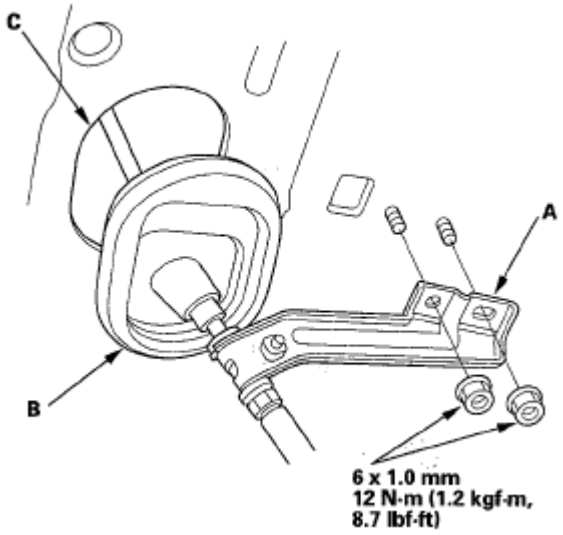


Fig. 316: Identifying Shift Cable Bracket And Grommet With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Turn the ignition switch ON (II), and check that the R position indicator comes on.

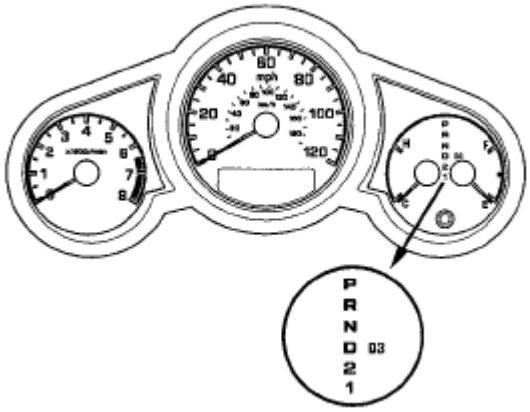


Fig. 317: Identifying D Indicator In Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the shift cable to the shift lever, and refer to shift cable adjustment (see **SHIFT CABLE**

ADJUSTMENT).

SHIFT CABLE ADJUSTMENT

1. Remove the center lower cover (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
2. Shift the shift lever into the R position.
3. Remove the shift cable insulator (A) from the shift cable (B).

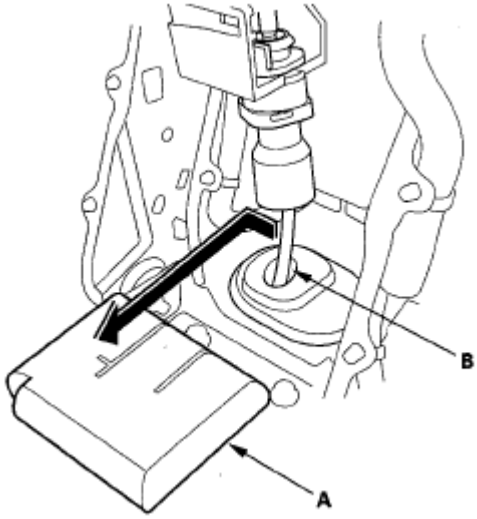


Fig. 318: Identifying Shift Cable Insulator From Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Slide the lock tab (A) down on the shift cable end holder (B).

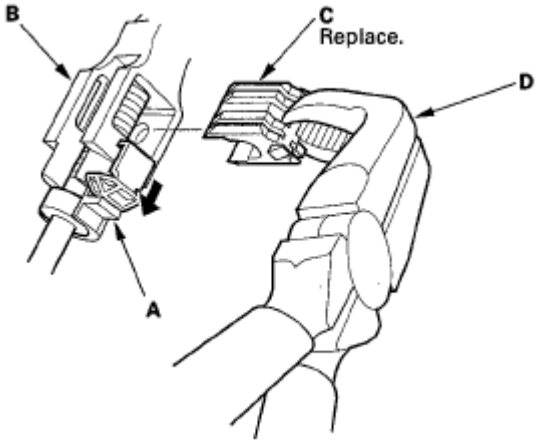


Fig. 319: Sliding Lock Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Grasp the shift cable lock (C) in the middle with angle-jaw needle-nose pliers (D), and remove it from the

shift cable end and shift cable end holder. Do not pry the shift cable lock with a screwdriver, it may damage the shift cable end holder.

6. Separate the shift cable end (A) from the shift cable end holder (B).

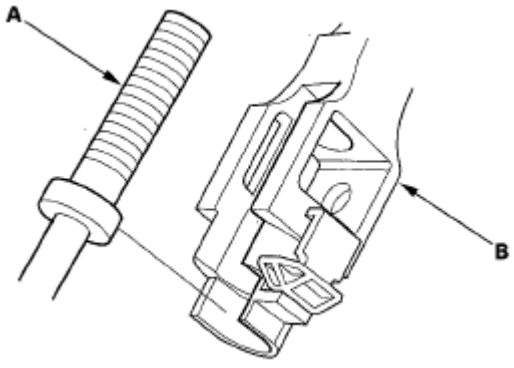


Fig. 320: Identifying Shift Cable And Shift Cable Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Rotate the socket holder (A) on the shift cable (B) a quarter turn; the tab (C) on the socket holder will be in the opening (D) of the shift cable bracket (E). Then slide the holder to remove the shift cable from the shift cable bracket. Do not remove the shift cable by twisting shift cable guide (F) and damper (G).

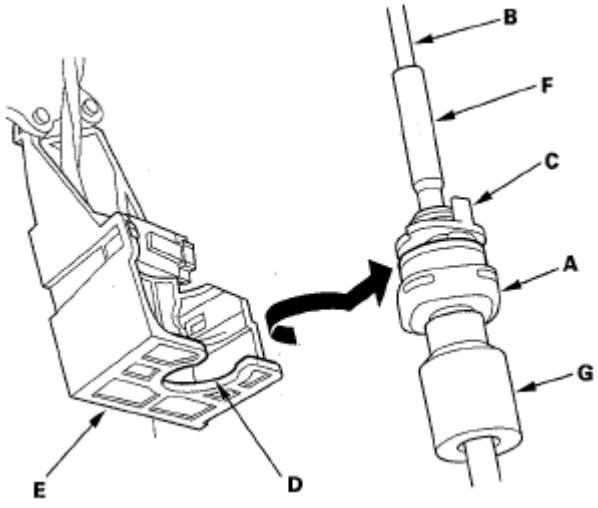


Fig. 321: Rotating Socket Holder On Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Push the shift cable down until it stops, then release it. Pull the shift cable back one step so that the shift cable is in R. Do not hold the shift cable guide (A) to adjust the shift cable (B).

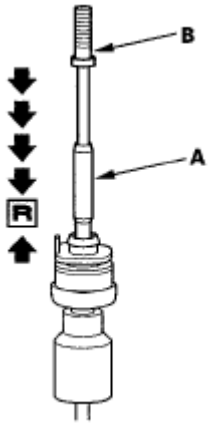


Fig. 322: Pushing Shift Cable Down Until
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Turn the ignition switch ON (II), and check that the R position indicator comes on.
10. Turn the ignition switch OFF.
11. Insert a 6.0 mm (0.24 in.) pin (A) into the positioning hole (B) on the shift lever bracket through the positioning hole on the shift lever. The shift lever is secured in the R position.

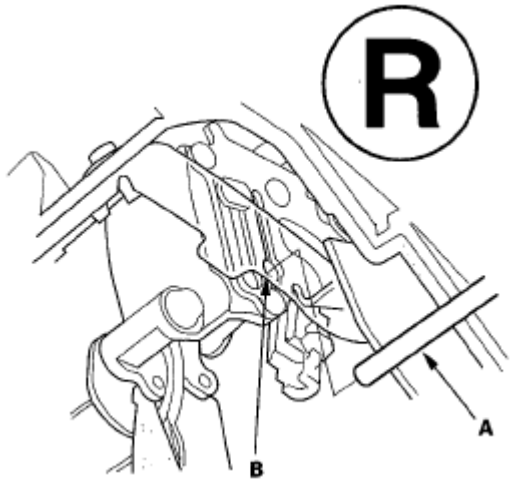


Fig. 323: Inserting Pin Into Positioning Hole On Shift Lever Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Rotate the socket holder (A) on the shift cable (B) to face the tab (C) on the holder opposite the opening (D) in the shift cable bracket (E). Align the holder with the opening in the bracket, then slide the holder into the bracket. Rotate the holder a quarter turn to secure the shift cable. Do not install the shift cable by twisting the shift cable guide (F) and damper (G).

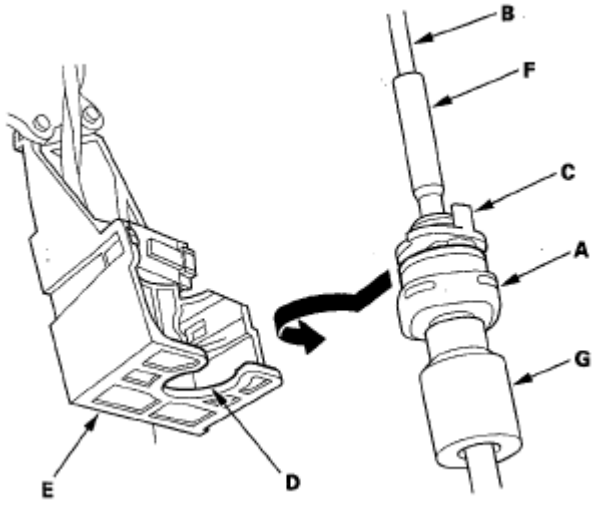


Fig. 324: Rotating Socket Holder On Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the shift cable end (A) in the shift cable end holder (B). Keep the shift cable end and end holder free of grease.

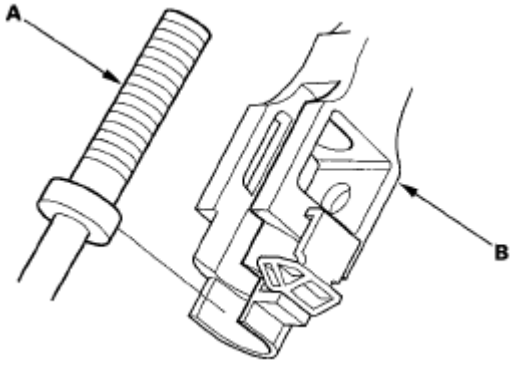


Fig. 325: Identifying Shift Cable And Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the new shift cable lock (A) to secure the shift cable end and shift cable end holder, then push the lock tab (B) up until it stops to lock joint.

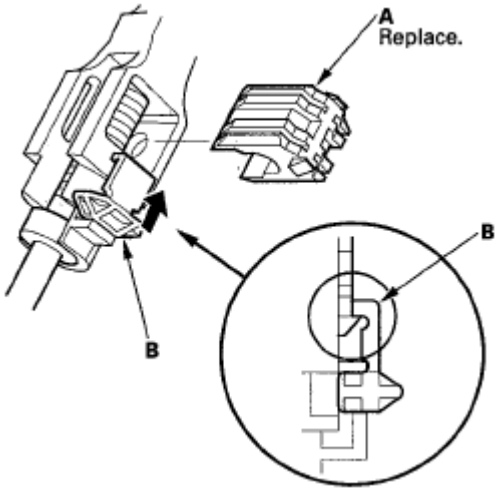


Fig. 326: Pushing Lock Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the 6.0 mm (0.24 in.) pin that was installed to hold the shift lever.
16. Install the shift cable insulator (A) along the slot (B) over the shift cable (C), and position the shift cable in the left end (D) of the slot.

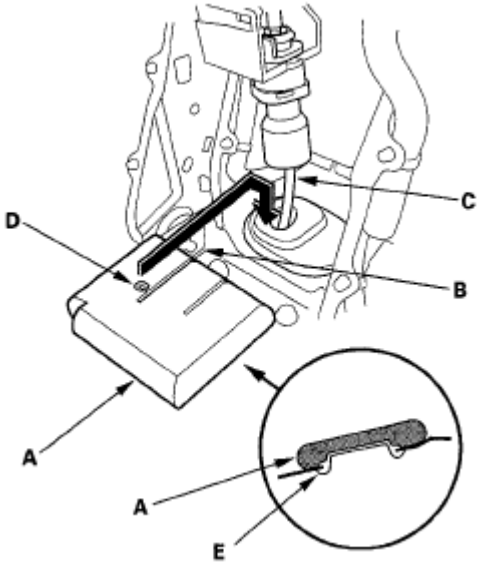


Fig. 327: Identifying Shift Cable Insulator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Push the insulator down so that it covers the shift cable grommet(E).
18. Allow the all four wheels (4WD) or the front wheels (2WD) to rotate freely.
19. Start the engine, and move the shift lever to each position. Check that the A/T gear position indicator follows the transmission range switch, and check the shift lever operation in each gear.
20. Install the center lower cover (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).

COMPONENT LOCATION INDEX

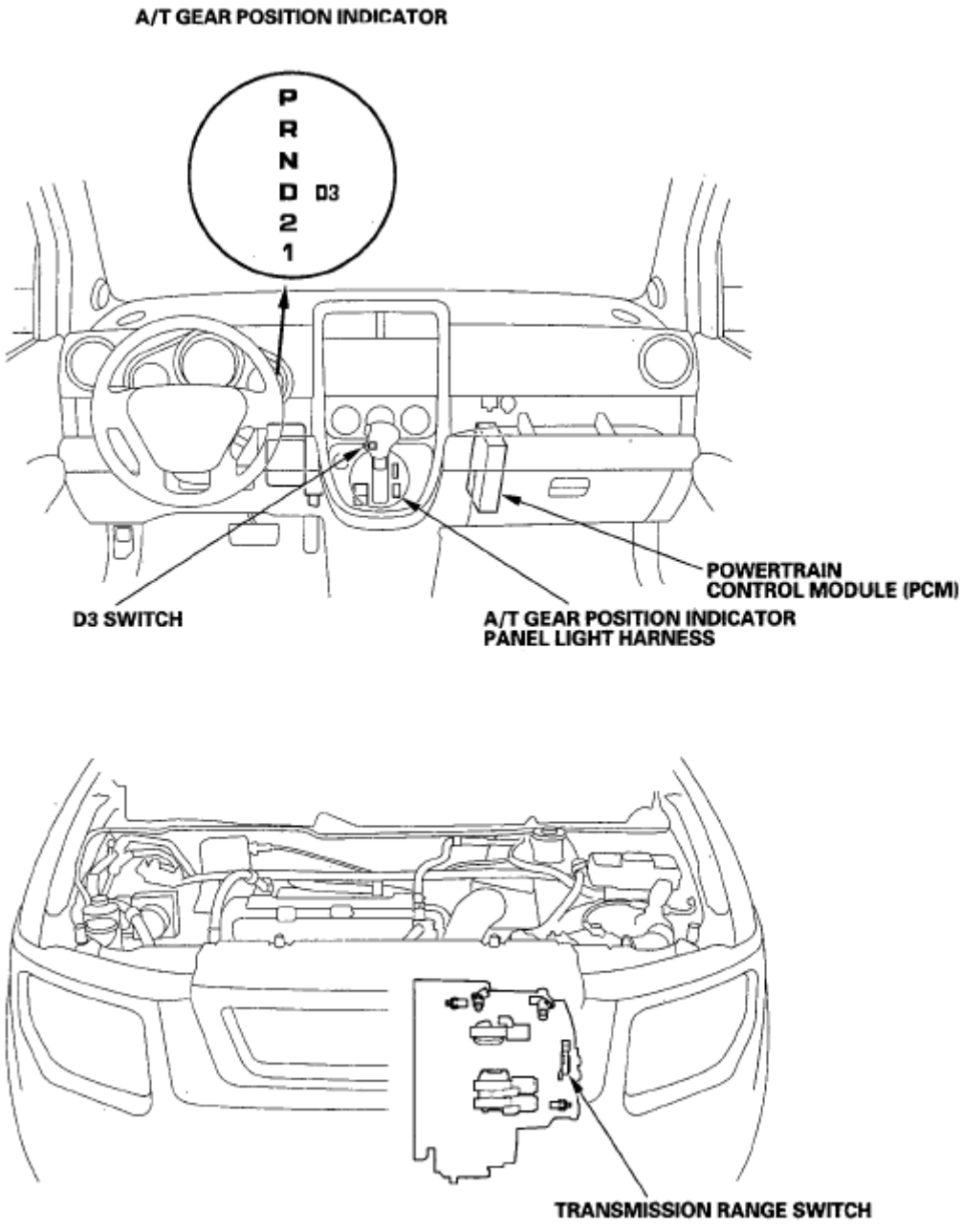


Fig. 328: Identifying A/T Gear Position Indicator Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

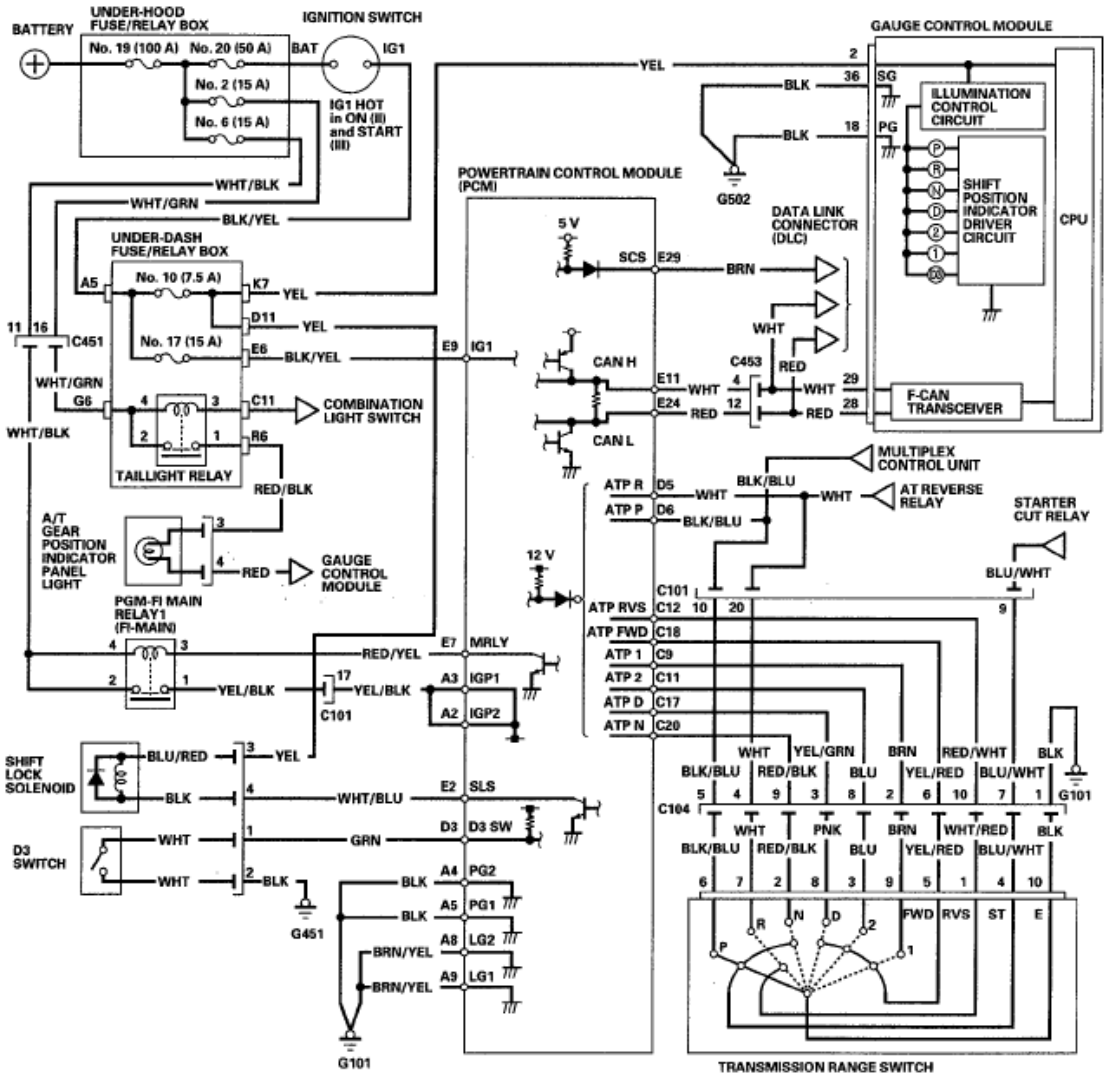


Fig. 329: A/T Gear Position Indicator - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

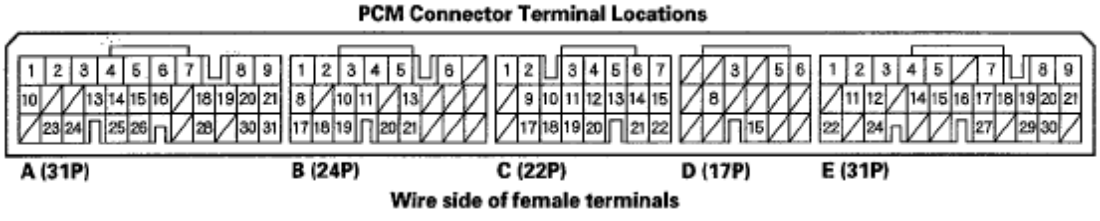


Fig. 330: Identifying PCM Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D3 SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch ON (II).

2. Shift to the D position and select D3 driving mode by pressing the D3 switch, and watch the D3 indicator.

   Does the D3 indicator come on?

   YES -The system is OK at this time.

   NO -Go to step 3.

3. Check the PGM-FI DTCs with the HDS.

   Are DTC U0028 or U0155 indicated?

   YES -Troubleshoot the indicated DTC, then recheck.

   NO -Go to step 4.

4. Turn the ignition switch OFF.
5. Disconnect the D3 switch/shift lock solenoid connector.
6. Check for continuity between D3 switch/shift lock solenoid connector terminals No. 1 and No. 2 while pressing the switch and when the switch is released.

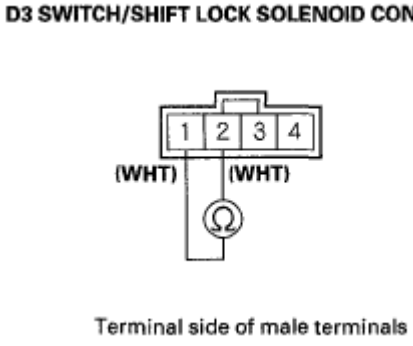


Fig. 331: Checking Continuity Between D3 Switch/Shift Lock Solenoid Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there continuity while pressing the D3 switch, and no continuity when the D3 switch is released?

   YES -Go to step 7.

   NO -Replace the D3 switch (see **D3 SWITCH TEST/REPLACEMENT**).

7. Turn the ignition switch ON (II).
8. Shift the shift lever to the D position.
9. Measure the voltage between D3 switch/shift lock solenoid connector terminals No. 1 and No. 2.

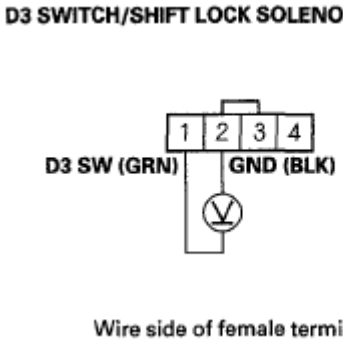


Fig. 332: Measuring Voltage Between D3 Switch/Shift Lock Solenoid Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -D3 switch circuit is OK. Check for loose terminals.

NO -Go to step 10.

10. Measure the voltage between D3 switch/shift lock solenoid connector terminal No. 1 and body ground.

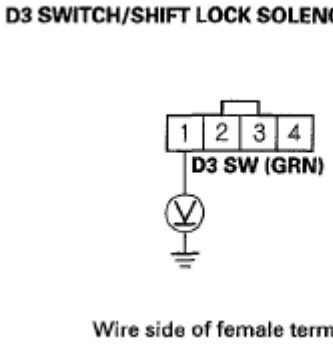


Fig. 333: Measuring Voltage Between D3 Switch/Shift Lock Solenoid Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair open in the wire between D3 switch/shift lock solenoid connector terminal No. 2 and ground (G451), or repair poor ground (G451).

NO -Go to step 11.

11. Measure the voltage between PCM connector terminal D3 and body ground.

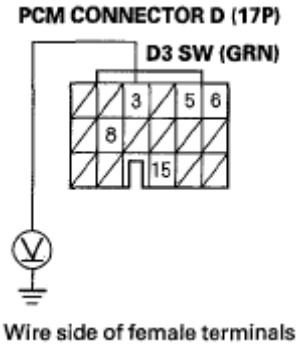


Fig. 334: Measuring Voltage Between PCM Connector Terminal D3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair open or short in the wire between PCM connector terminal D3 and the D3 switch/shift lock solenoid connector.

NO -Check for a short in the wire between PCM terminal D3 and the D3 switch/shift lock solenoid connector. Check for loose or poor connections at PCM connector terminal D3. If the wire and connections are OK, substitute a known-good PCM (see **SUBSTITUTING THE PCM**) and recheck.

TRANSMISSION RANGE SWITCH TEST

1. Disconnect the transmission range switch harness connector (A), then remove the connector (B) from its bracket.

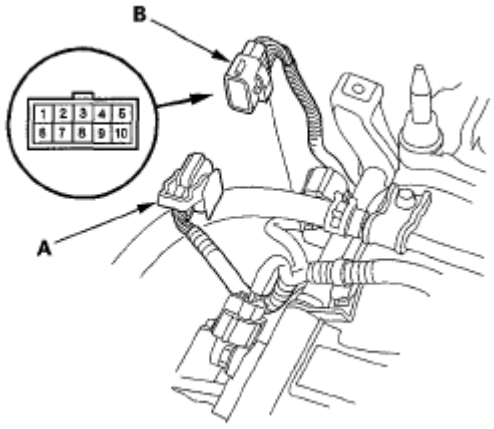


Fig. 335: Identifying Transmission Range Switch Harness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between terminals at the harness connector. There should be continuity between the terminals in each switch position as shown in the table follow.

Transmission Range Switch Harness Connector

Position	Connector Terminal/Signal									
	1	2	3	4	5	6	7	8	9	10
	GND	1	D	R	P	ATP FWD	ATP NP	2	N	ATP RVS
P	○				○		○			
R	○			○						○
N	○						○		○	
D	○		○			○				
2	○					○		○		
1	○	○				○				

Fig. 336: Transmission Range Switch Harness Connector Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. The transmission range switch test is finished if the test results are OK. If there is no continuity between any terminals, go to step 4.
4. If there is no continuity between any terminals, remove the transmission range switch cover.

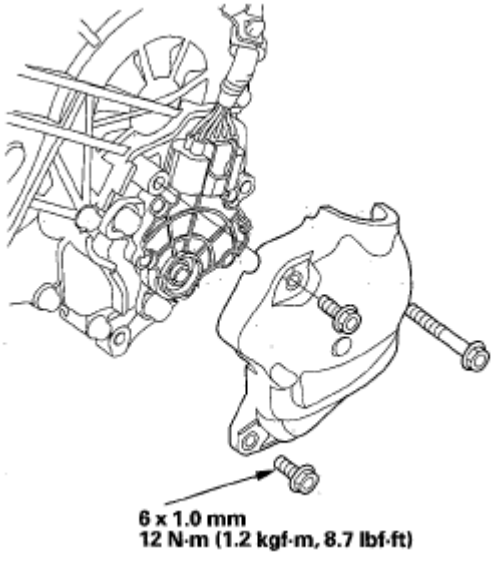


Fig. 337: Identifying Transmission Range Switch Cover And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the transmission range switch connector.

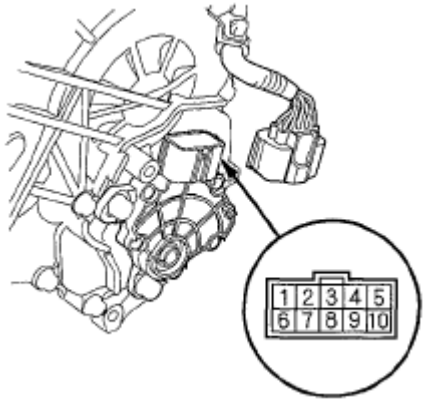


Fig. 338: Identifying Transmission Range Switch Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check for continuity between terminals at the switch connector. There should be continuity between the terminals in each switch position as shown in the table follow.

Transmission Range Switch Connector

Position	Connector Terminal/Signal									
	1	2	3	4	5	6	7	8	9	10
	ATP RVS	N	ATP 2	ATP NP	ATP FWD	P	R	D	1	GND
P				○		○				○
R	○						○			○
N		○		○						○
D					○			○		○
2			○		○					○
1					○				○	○

Fig. 339: Transmission Range Switch Connector Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If the transmission range switch continuity check is OK, replace the faulty transmission range switch harness.
8. If there is no continuity between any terminals, remove the transmission range switch, and check the end of the selector control shaft (A).

Select Control Shaft:

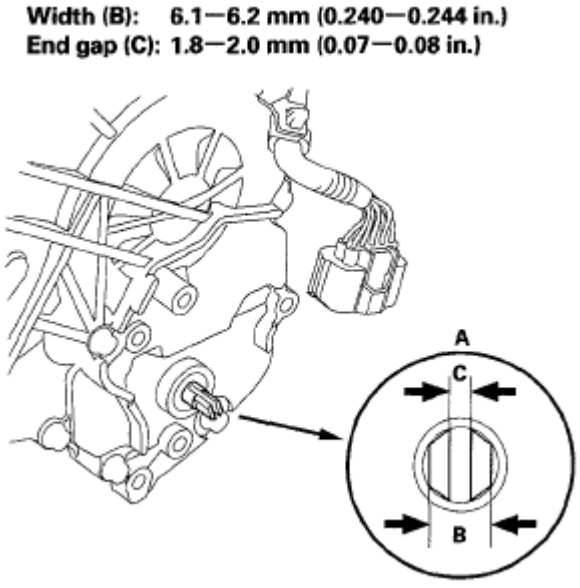


Fig. 340: Identifying Selector Control Shaft Gap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the measurement of the selector control shaft end is within the standard, replace the transmission range switch. If the measurement is out of the standard, repair the selector control shaft end, and recheck the transmission range switch continuity.

TRANSMISSION RANGE SWITCH REPLACEMENT

1. Raise the vehicle on a lift, and make sure it is securely supported.
2. Shift to the N position.
3. Remove the transmission range switch cover.

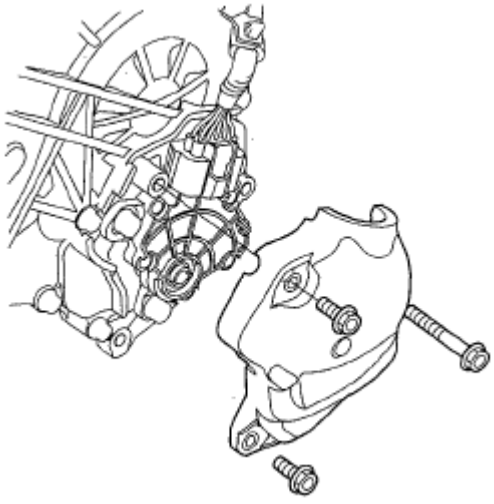


Fig. 341: Identifying Transmission Range Switch Cover And Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the transmission range switch connector.

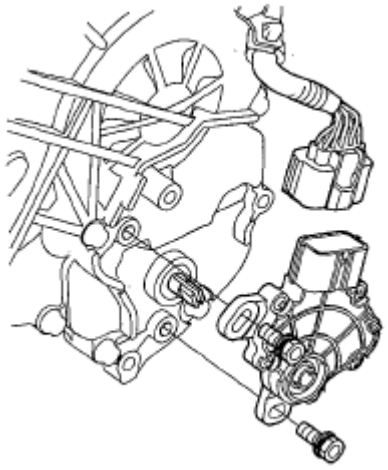


Fig. 342: Identifying Transmission Range Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the transmission range switch.
6. Make sure the selector control shaft is in the N position. If necessary, move the shift lever from the P position to the N position.

NOTE: Do not use the selector control shaft to adjust the shift position. If the selector control shaft tips are squeezed together it will cause a faulty signal or position due to play between the selector control shaft and the switch.

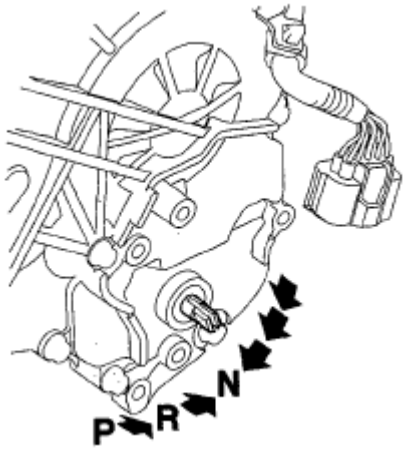


Fig. 343: Identifying Selector Control Shaft Positions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Align the cutouts (A) on the rotary-frame with the neutral positioning cutouts (B) on the transmission range switch (C), then put a 2.0 mm (0.08 in.) feeler gauge blade (D) in the cutouts to hold the switch in the N position.

NOTE: Be sure to use a 2.0 mm (0.08 in.) blade or equivalent to hold the switch in the N position.

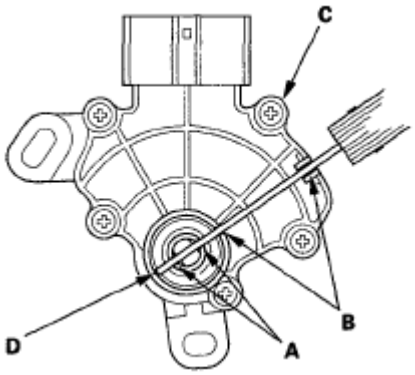


Fig. 344: Aligning Cutouts On Rotary-Frame With Neutral Positioning Cutouts On Transmission Range Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the transmission range switch (A) gently on the selector control shaft (B) with holding it in the N position with the 2.0 mm (0.08 in.) blade (C).

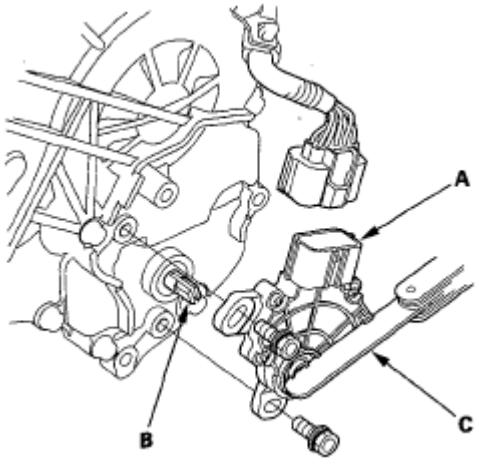


Fig. 345: Holding Transmission Range Switch With Blade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Tighten the bolts on the transmission range switch while you continue to hold the N position. Do not move the transmission range switch when tightening the bolts. Remove the feeler gauge.

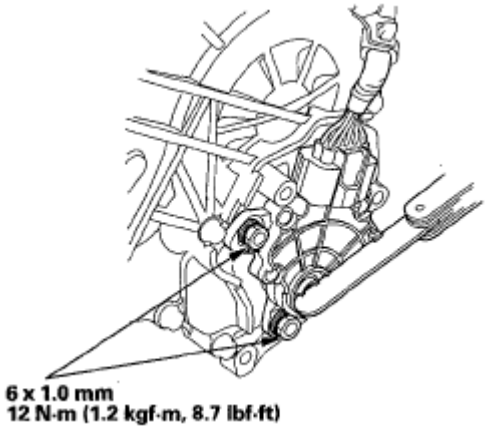


Fig. 346: Tightening Transmission Range Switch Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Connect the connector securely, then install the transmission range switch cover (A).

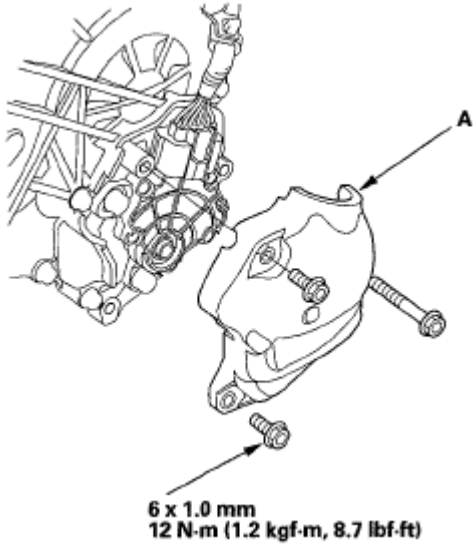


Fig. 347: Identifying Transmission Range Switch Cover With Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Turn the ignition switch ON (II). Move the shift lever through all positions, and check the transmission range switch synchronization with the A/T gear position indicator.
12. Check that the engine will start in the P and N positions, and will not start in any other shift lever position.
13. Check that the back-up lights come on when the shift lever is in the R position.
14. Allow the all four wheels (4WD) or the front wheels (2WD) to rotate freely, then start the engine, and check the shift lever operation.

D3 SWITCH TEST/REPLACEMENT

1. Remove the center lower cover (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the shift lever console trim (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
3. Shift the shift lever into the R position.
4. Remove the shift cable insulator (A) from the shift cable (B).

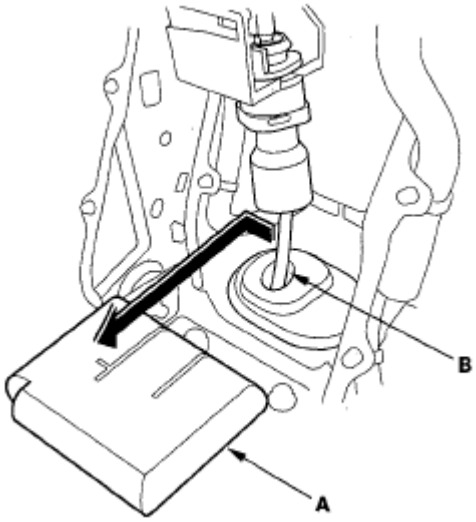


Fig. 348: Identifying Shift Cable Insulator And Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Slide the lock tab (A) down on the shift cable end holder (B).

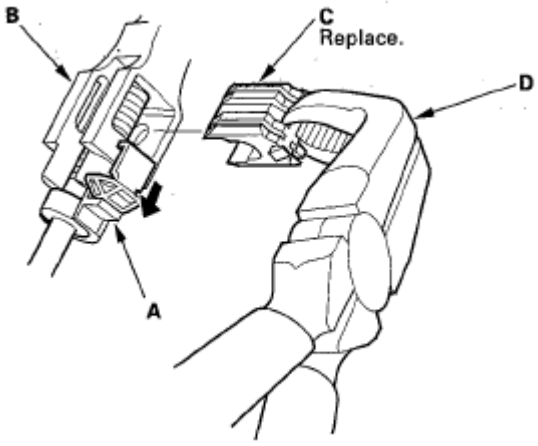


Fig. 349: Sliding Lock Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Grasp the shift cable lock (C) in the middle with angle-jaw needle-nose pliers (D), and remove it from the shift cable end and shift cable end holder. Do not pry the shift cable lock with a screwdriver, it may damage the shift cable end holder.

7. Separate the shift cable end (A) from the shift cable end holder (B).

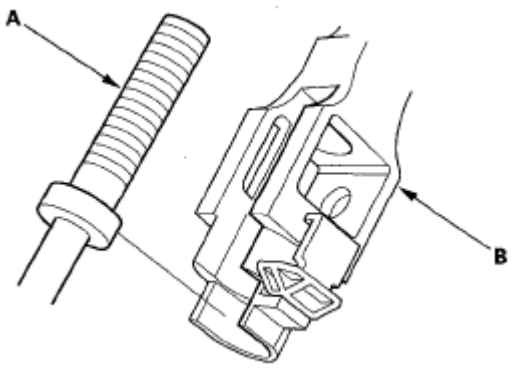


Fig. 350: Identifying Shift Cable And Shift Cable End Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Rotate the socket holder (A) on the shift cable (B) a quarter turn; the tab (C) on the socket holder will be in the opening (D) of the shift cable bracket (E). Then slide the holder to remove the shift cable from the shift cable bracket. Do not remove the shift cable by twisting the shift cable guide (F) and damper (G).

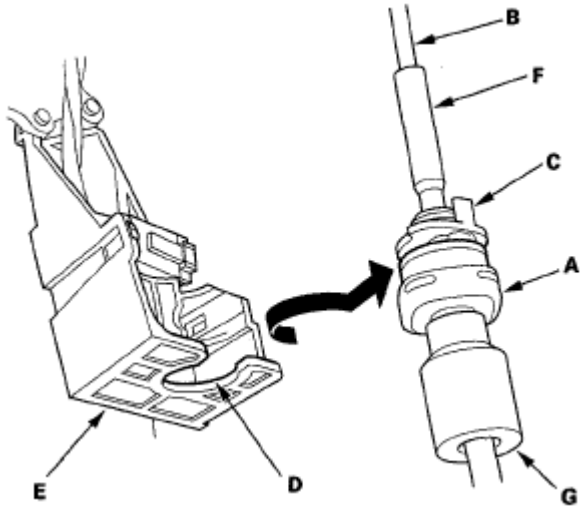


Fig. 351: Rotating Socket Holder On Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the shift lever mounting bolts.

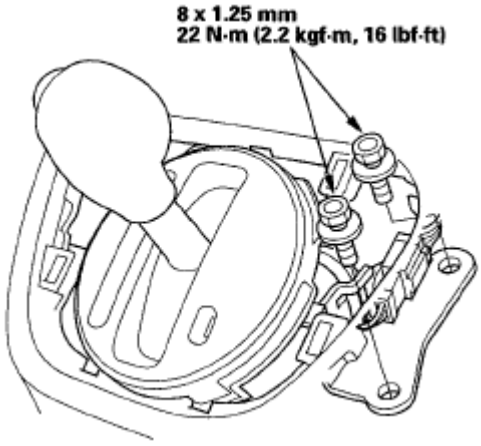


Fig. 352: Identifying Shift Lever Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the shift lever mounting bolt (A), and remove the shift cable bracket (B).

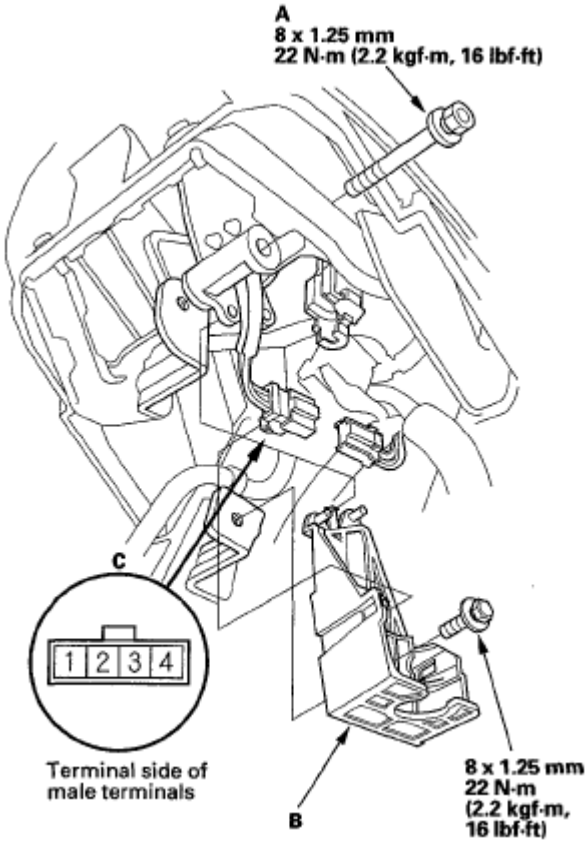


Fig. 353: Identifying Shift Lever Mounting Bolt And Shift Cable Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the D3 switch/shift lock solenoid connector (C), then disconnect the connector.
12. Check for continuity between D3 switch/shift lock solenoid connector terminals No. 1 and No. 2 while pressing the D3 switch and when the switch is released. There should be continuity while pressing the D3 switch and no continuity when the switch is released.
13. If the D3 switch works properly, connect the connector and install the removed parts. If the switch is faulty, go to step 14, and replace the switch.
14. Remove the shift lever assembly.
15. Pry out the D3 switch cover (A), and remove it.

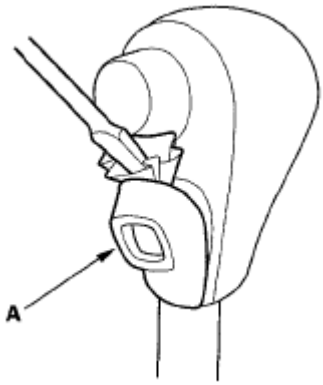


Fig. 354: Prying Out D3 Switch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the D3 switch (A) by expanding its locks, and remove the screws (B), shift lever button (C), spring (D), and shift lever knob (E).

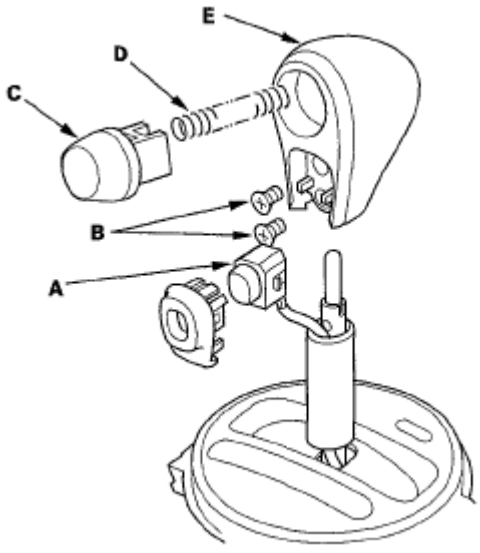


Fig. 355: Identifying Screws, Shift Lever Button, Spring And Shift Lever Knob
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the A/T gear position indicator panel light socket (A), then separate the A/T gear position indicator panel (B) from the shift lever bracket (C).

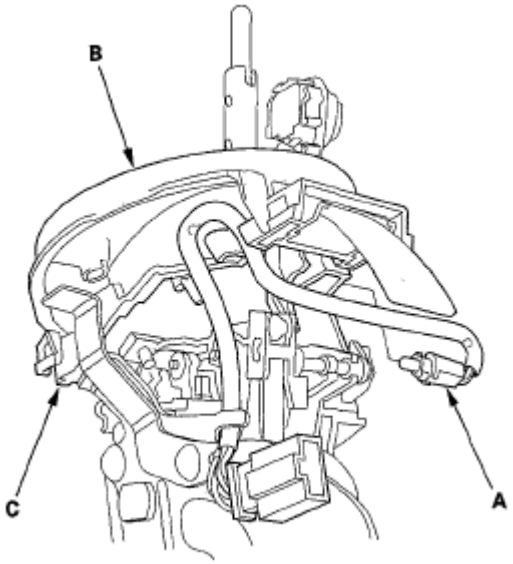


Fig. 356: Identifying A/T Gear Position Indicator Panel And Shift Lever Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Pry the lock tabs on the back of the D3 switch/shift lock solenoid connector (A), and remove the back cover (B).

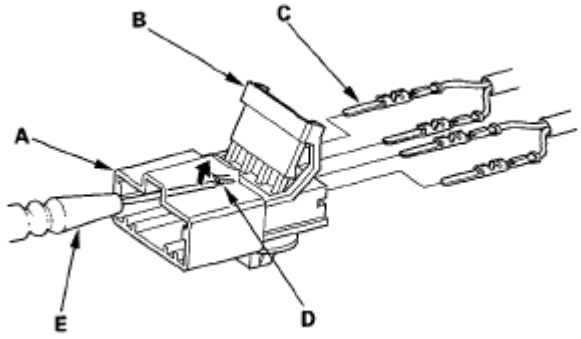


Fig. 357: Prying Lock Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the terminal (C) from the connector by pushing the lock tab (D) up in the connector using a thin blade screwdriver (E). Remove all four terminals.
20. Remove the D3 switch harness clamp from the shift lever bracket and from the harness, and pull the D3 switch harness out to remove the shift lever assembly.
21. Insert the new D3 switch harness (A) into the shift lever ring (B), and route the harness through the groove (C) of the shift lever (D) into the hole (E). Do not pinch the harness.

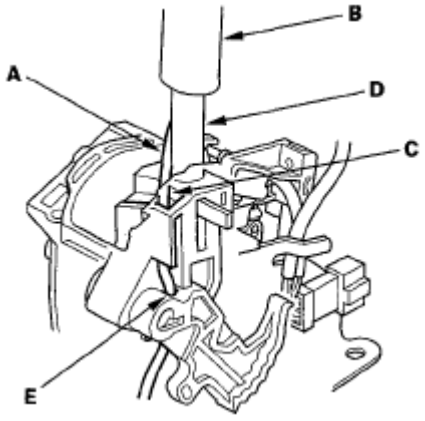


Fig. 358: Inserting D3 Switch Harness Into Shift Lever Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Wind the D3 switch harness (A) one turn around the clamp (B) on the bottom of the shift lever.

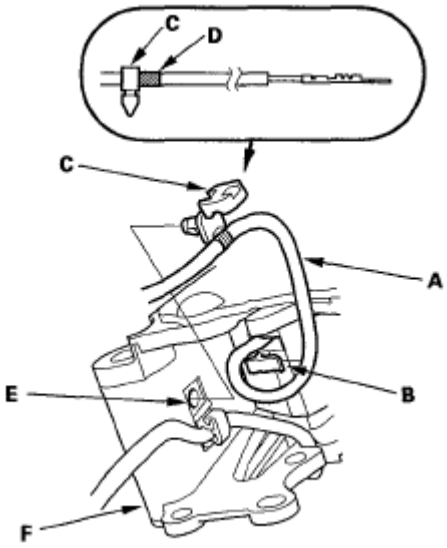


Fig. 359: Identifying Harness Clamp Reference Tape On Harness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the harness clamp (C) at the reference tape (D) on the harness, then install the clamp in the hole (E) of the shift lever bracket (F).
24. Install the A/T gear position indicator panel (A) on the shift lever bracket. Apply silicone grease to the shift lever button (B), spring (C), and push rod (D) of the shift lever (E), and install the spring, shift lever button, and shift lever knob (F). Apply non-hardening thread lock sealant to screws (G), and secure the shift lever knob to the shift lever.

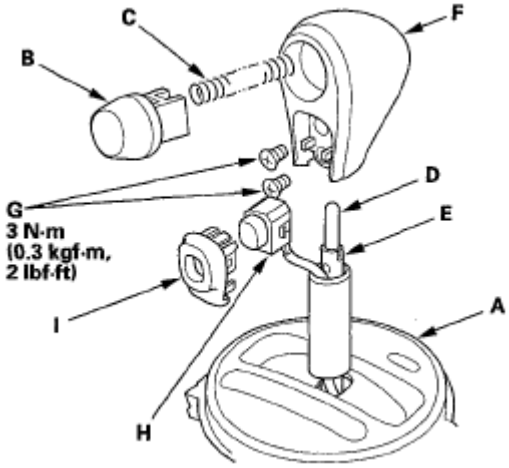


Fig. 360: Identifying A/T Gear Position Indicator Panel On Shift Lever Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the D3 switch (H) and the D3 switch cover (I).
26. Install the A/T gear position indicator panel light socket.

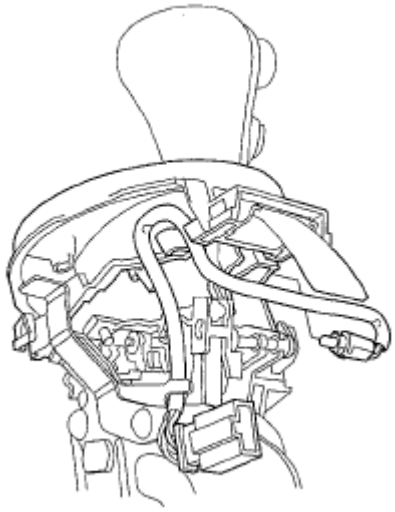


Fig. 361: Identifying A/T Gear Position Indicator Panel Light Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Install the BLU/RED harness terminal (A) of the shift lock solenoid in the No. 3 cavity, and BLK harness terminal (B) in the No. 4 cavity.

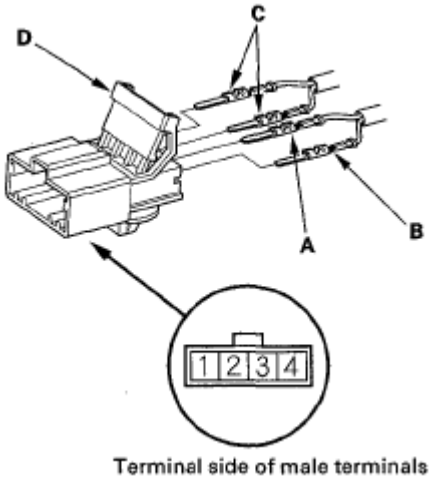


Fig. 362: Identifying Shift Lock Solenoid Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the D3 switch harness terminals (C) in the No. 1 and No. 2 cavities. Either D3 switch harness terminal can be installed in No. 1 and No. 2 cavities.
29. Make sure that all four terminals lock securely, then install the back cover (D) securely in place.
30. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

A/T GEAR POSITION INDICATOR PANEL LIGHT HARNESS REPLACEMENT

1. Remove the shift lever assembly (see **SHIFT LEVER REMOVAL**).
2. Remove the A/T gear position indicator panel light socket (A), and remove the bulb from the socket.

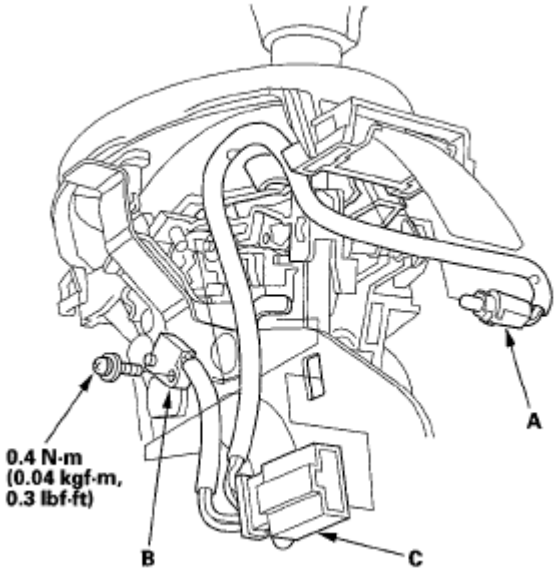


Fig. 363: Identifying Bulb From Socket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the park pin switch (B) and the switch connector (C).
4. Pry the lock tabs on the back of the park pin switch connector (A), and remove the back cover (B).

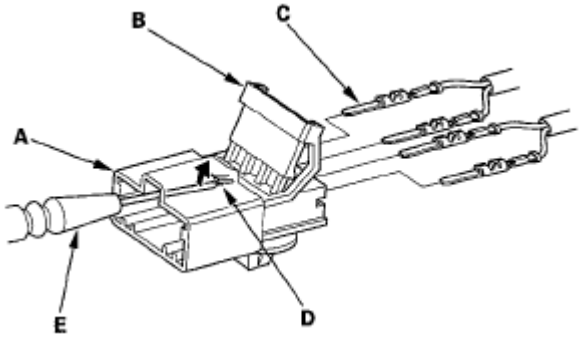


Fig. 364: Prying Lock Tabs On Back Of Park Pin Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the terminal (C) from the connector by pushing the lock tab (D) up in the connector using a thin blade screwdriver (E). Remove all four terminals.
6. Replace the A/T gear position indicator panel light harness with the new one.
7. Install the GRN harness terminals (A) of the park pin switch in the No. 1 and No. 2 cavities. Either park pin switch harness terminal can be installed in No. 1 and No. 2.

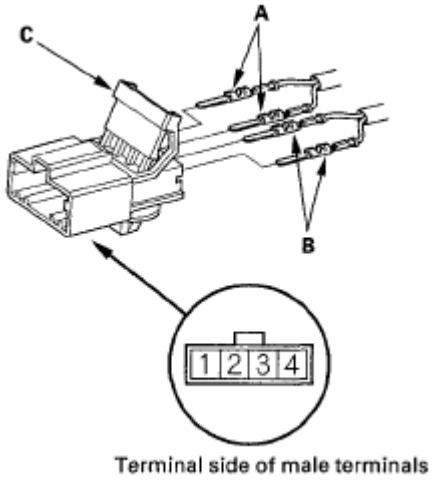


Fig. 365: Identifying Either Park Pin Switch Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the RED/BLK harness terminals (B) in the No. 3 and No. 4 cavities. Either A/T gear position indicator panel light harness terminal can be installed in No. 3 and No. 4 cavities.
9. Make sure that all four terminals lock securely, then install the back cover (C) securely in place.
10. Install the park pin switch. Apply non-hardening thread lock sealant to screw threads, and secure the switch with the screw.
11. Install the A/T gear position indicator panel light bulb in the socket.

12. Install the A/T gear position indicator panel light socket, and install the connector.
13. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

COMPONENT LOCATION INDEX

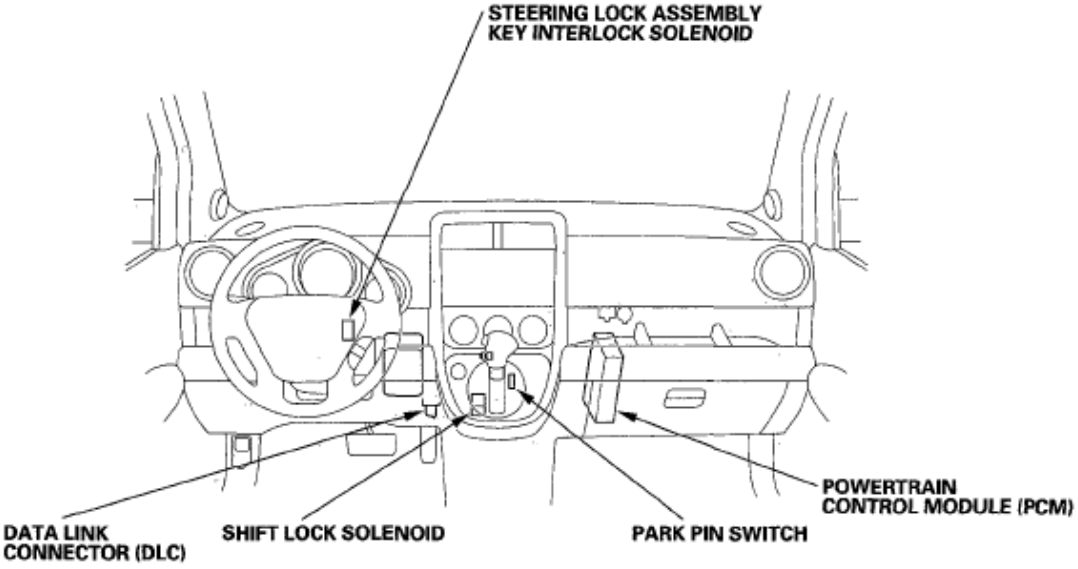


Fig. 366: Identifying A/T Interlock Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

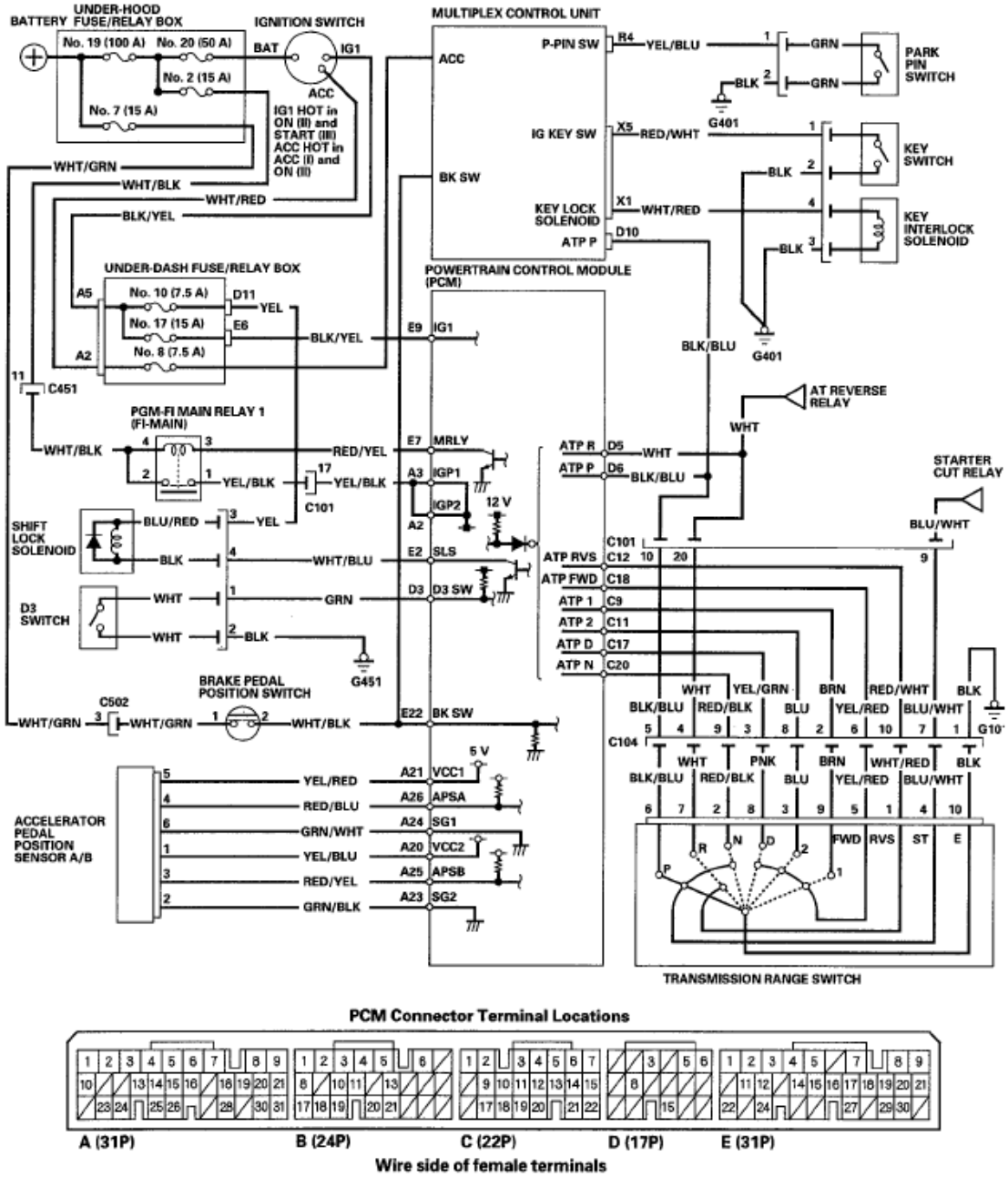


Fig. 367: A/T Interlock - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING

1. Connect the HDS to the DLC.
2. Select Shift Lock Solenoid Test in Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

Does the shift lock solenoid work properly?

YES -Go to step 12.

NO -Go to step 3.

3. Turn the ignition switch OFF.
4. Disconnect the D3 switch/shift lock solenoid connector.
5. Turn the ignition switch ON (II).
6. Measure the voltage between D3 switch/shift lock solenoid connector terminal No. 3 and body ground.

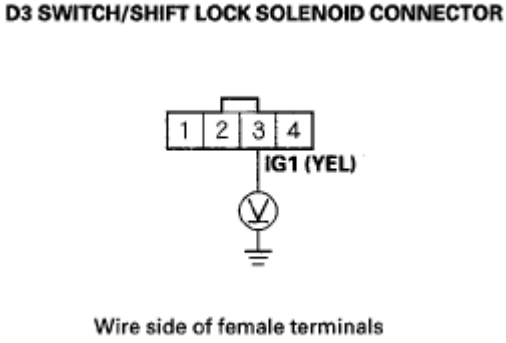


Fig. 368: Measuring Voltage Between D3 Switch/Shift Lock Solenoid Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 7.

NO -Check for a blown No. 10 fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between the D3 switch/shift lock solenoid connector and the under-dash fuse/relay box.

7. Shift the shift lever into the P position, and press the brake pedal. Do not press the accelerator.
8. Measure the voltage between D3 switch/shift lock solenoid connector terminal No. 3 and No. 4 while pressing the brake pedal.

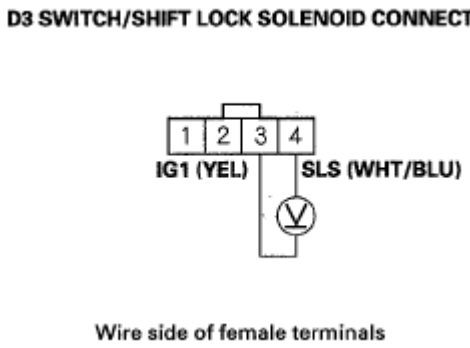


Fig. 369: Measuring Voltage Between D3 Switch/Shift Lock Solenoid Connector Terminal No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 9.

NO -Go to step 10.

9. Connect the battery positive terminal to D3 switch/shift lock solenoid connector terminal No. 3, and connect the battery negative terminal to the terminal No. 4, then check that the shift lock solenoid operates.

NOTE: Do not connect the battery positive terminal to terminal No. 4 or you will damage the diode inside the shift lock solenoid.

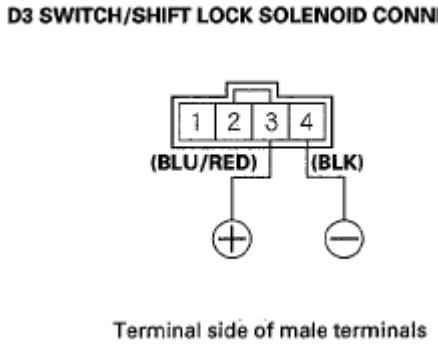


Fig. 370: Connecting Battery Positive Terminal To D3 Switch/Shift Lock Solenoid Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the shift lock solenoid operate properly?

YES -Repair the shift lock mechanism.

NO -Replace the shift lock solenoid (see **SHIFT LOCK SOLENOID REPLACEMENT**).

10. Turn the ignition switch OFF.
11. Check for continuity between PCM connector terminal E2 and D3 switch/shift lock solenoid connector terminal No. 4.

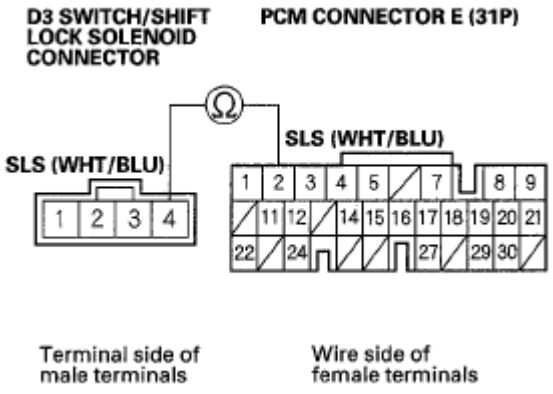


Fig. 371: Checking Continuity Between PCM Connector Terminal E2 And D3 Switch/Shift Lock Solenoid Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Check for loose or poor connections at PCM connector terminal E2. If the connection is OK, update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck.

NO -Repair open in the wire between PCM connector terminal E2 and the D3 switch/shift lock solenoid connector.

12. Check the BRAKE SWITCH in the DATA LIST with the HDS while pressing the brake pedal.

    Is the BRAKE SWITCH ON?

    YES -Go to step 13.

    NO -Do the Brake Pedal Position Switch Signal Circuit Troubleshooting (see **BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING**).

13. Check the A/T P SWITCH signal in the DATA LIST with the HDS in the P position.

    Is the A/T P SWITCH ON?

    YES -Go to step 23.

    NO -Go to step 14.

14. Turn the ignition switch OFF.

15. Disconnect the transmission range switch connector.
16. Check for continuity between transmission range switch connector terminal No. 10 and body ground.

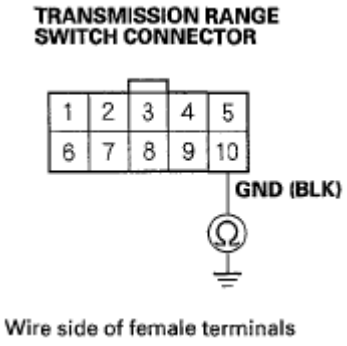


Fig. 372: Checking Continuity Between Transmission Range Switch Connector Terminal No. 10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 17.

NO -Repair open in the wire between transmission range switch connector terminal No. 10 and ground (G101) (see **ENGINE WIRE HARNESS**), or repair poor ground (G101).

17. Connect the transmission range switch connector.
18. Turn the ignition switch ON (II).
19. Measure the voltage between PCM connector terminals D6 and A9.

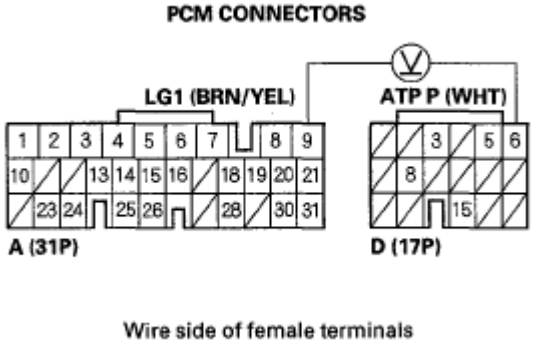


Fig. 373: Measuring Voltage Between PCM Connector Terminals D6 And A9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair open in the wire between PCM connector terminal D6 and the transmission range switch.

NO -Go to step 20.

20. Turn the ignition switch OFF.
21. Disconnect the transmission range switch connector.
22. Check for continuity between transmission range switch connector terminals No. 6 and No. 10.

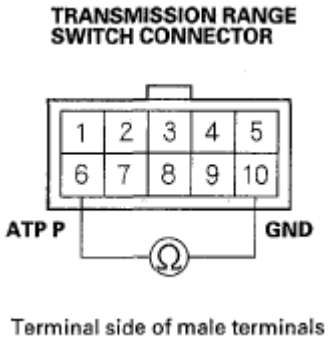


Fig. 374: Checking Continuity Between Transmission Range Switch Connector Terminals No. 6 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity while the shift lever is in the P position, and no continuity when the shift lever is shifted to any position other than P?

YES -Check for loose or poor connections at PCM connector terminal E6. If the connection is OK, update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck.

NO -Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).

23. Check the APP SENSOR A in the DATA LIST with the HDS. Do not press the accelerator.

Is the APP SENSOR A opening 11% or more, or the APP SENSOR A voltage 0.90 V or more?

YES -Do the APP sensor signal inspection (see **APP SENSOR SIGNAL INSPECTION**).

NO -Update the PCM if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck.

KEY INTERLOCK SYSTEM CIRCUIT TROUBLESHOOTING

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER**

REMOVAL/INSTALLATION) and the steering column covers (see **STEERING COLUMN REMOVAL AND INSTALLATION**).

2. Turn the ignition switch to ACC (I). The shift lever must be in the P position.
3. Disconnect the steering lock assembly connector.
4. Check if the ignition key can be moved to LOCK (0) position, and remove the key from the cylinder.

   Is the ignition key able to move to the LOCK (0) position, and then removed?

   YES -Go to step 5.

   NO -Replace the ignition key cylinder/steering lock assembly (see **STEERING LOCK REPLACEMENT**).

5. Turn the ignition switch to ACC (I) or ON (II), and shift to the N position.
6. Measure the voltage between steering lock assembly connector terminal No. 4 and body ground.

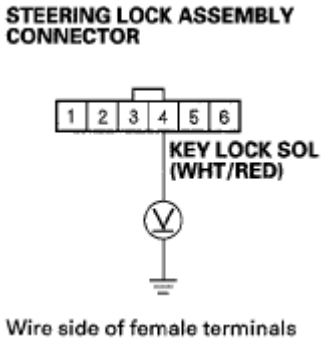


Fig. 375: Measuring Voltage Between Steering Lock Assembly Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 7.

   NO -Check for open in with WHT/RED wire between the multiplex control unit and the steering lock assembly connector. If the wire is OK, substitute a known-good multiplex control unit and recheck.

7. Turn the ignition switch to ACC (I), and shift to the P position.
8. Remove the shift lever console trim (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
9. Disconnect the park pin switch connector (see **PARK PIN SWITCH TEST**).
10. Check for continuity between park pin switch connector terminals No. 1 and No. 2 while pushing the button of the shift lever in, and when released.

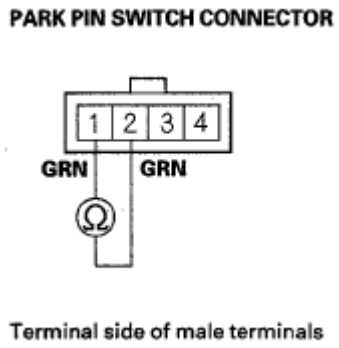


Fig. 376: Checking Continuity Between Park Pin Switch Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity when pushing the button in, and no continuity when it's released?

YES -Check for open in the wire between the multiplex control unit and the park pin switch connector. If the wire is OK, replace the multiplex control unit.

NO -Replace the park pin switch (see **PARK PIN SWITCH REPLACEMENT**).

KEY INTERLOCK SOLENOID TEST

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**) and the lower steering column cover (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
2. Disconnect the steering lock assembly connector.
3. Insert the ignition key in the key cylinder, then turn the ignition key to ACC (I).
4. Connect the battery positive terminal to steering lock assembly connector terminal No. 4, and connect the battery negative terminal to No. 3 terminal. Make sure that the ignition key cannot be turned to LOCK (0) position. Release the battery terminals, and make sure that the key can be turned to LOCK (0) position and removed from the cylinder.

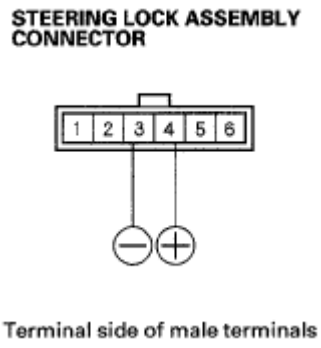


Fig. 377: Connecting Battery Positive And Negative Terminal To Steering Lock Assembly Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the key interlock solenoid works improperly, replace the ignition key cylinder/steering lock assembly (see **STEERING LOCK REPLACEMENT**).

SHIFT LOCK SOLENOID TEST

1. Connect the HDS to the DLC (A).

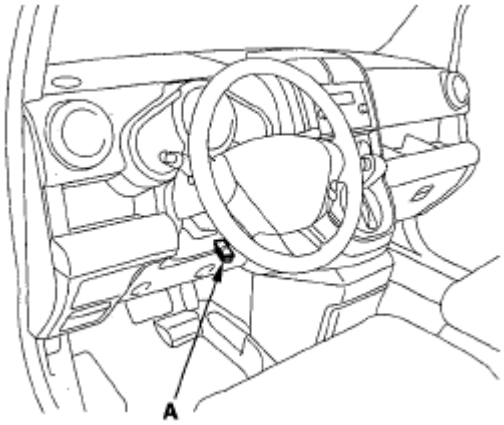


Fig. 378: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Shift Lock Solenoid Test in Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check that the shift lever can be moved out of the P position when Shift Lock Solenoid: ON. Move the shift lever back in the P position, and make sure it locks with Shift Lock Solenoid: OFF.
4. Check that the shift lock releases when the shift lock release is pushed, and check that it locks when the shift lock release is released.
5. If the shift lock solenoid does not work properly, do the shift lock system circuit troubleshooting (see **SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING**).

SHIFT LOCK SOLENOID REPLACEMENT

1. Remove the center lower cover (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the shift lever console trim (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
3. Shift the shift lever into the R position.
4. Remove the shift cable insulator (A) from the shift cable (B).

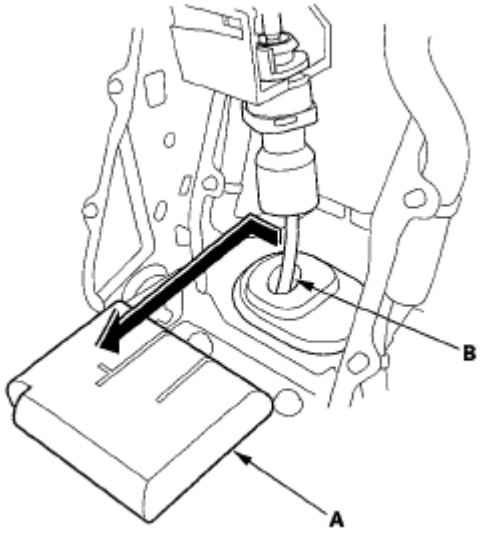


Fig. 379: Identifying Shift Cable Insulator And Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Slide the lock tab (A) down on the shift cable end holder (B).

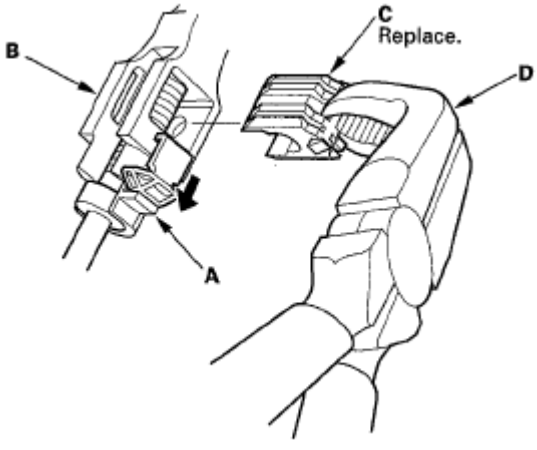


Fig. 380: Sliding Lock Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Grasp the shift cable lock (C) in the middle with angle-jaw needle-nose pliers (D), and remove it from the

shift cable end and shift cable end holder. Do not pry the shift cable lock with a screwdriver, it may damage the shift cable end holder.

7. Separate the shift cable end (A) from the shift cable end holder (B).

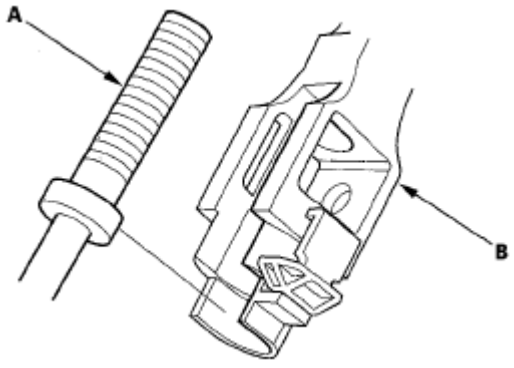


Fig. 381: Identifying Shift Cable From Shift Cable Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Rotate the socket holder (A) on the shift cable (B) a quarter turn; the tab (C) on the socket holder will be in the opening (D) of the shift cable bracket (E). Then slide the holder to remove the shift cable from the shift cable bracket. Do not remove the shift cable by twisting the shift cable guide (F) and damper (G).

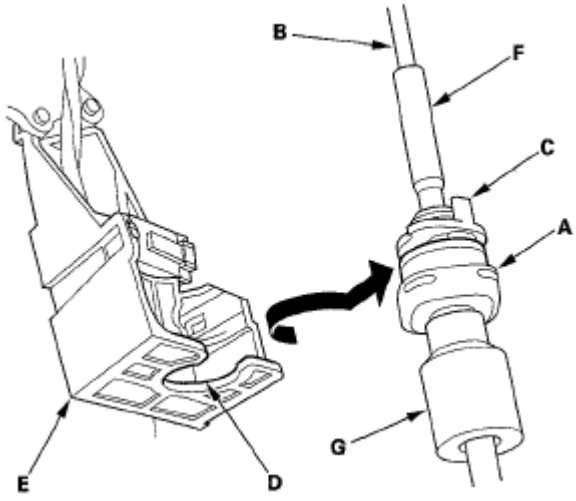


Fig. 382: Rotating Socket Holder On Shift Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the shift lever mounting bolts.

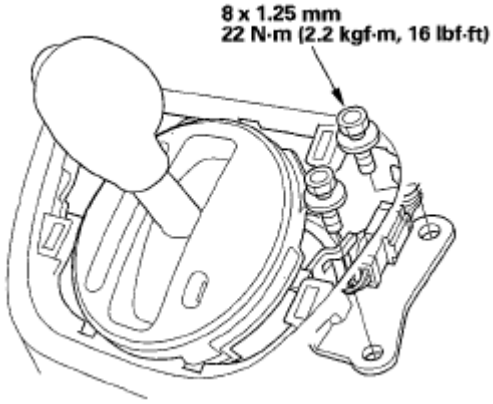


Fig. 383: Identifying Shift Lever Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the shift lever mounting bolt (A), and remove the shift cable bracket (B).

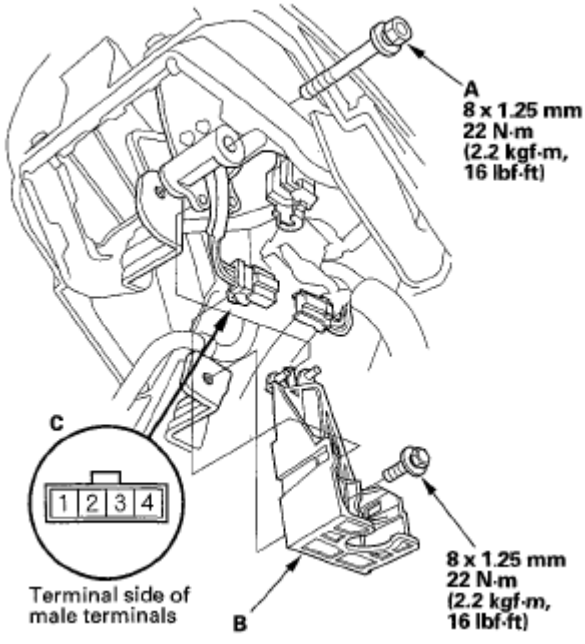


Fig. 384: Identifying Shift Lever Mounting Bolt And Shift Cable Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the D3 switch/shift lock solenoid connector (C), then disconnect the connector.
12. Remove the shift lever assembly.
13. Pry out the D3 switch cover (A), and remove it.

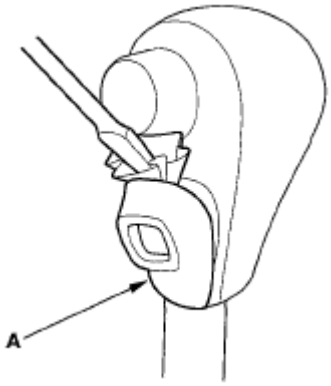


Fig. 385: Prying Out D3 Switch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the D3 switch (A) by expanding its locks, and remove the screws (B), shift lever button (C), spring (D), and shift lever knob (E).

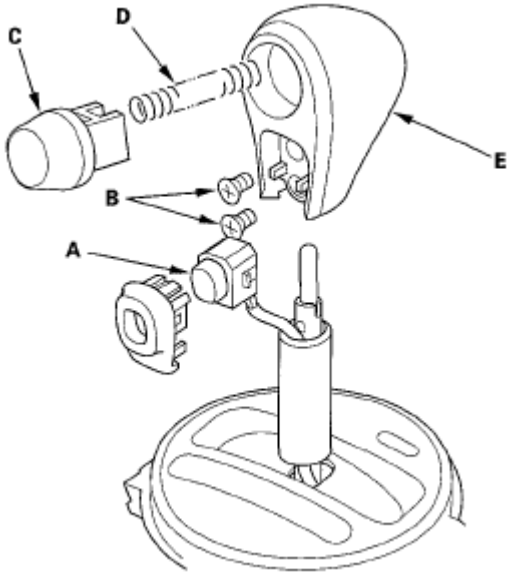


Fig. 386: Identifying Screws, Shift Lever Button, Spring And Shift Lever Knob
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the A/T gear position indicator panel light socket (A), then separate the A/T gear position indicator panel (B) from the shift lever bracket (C).

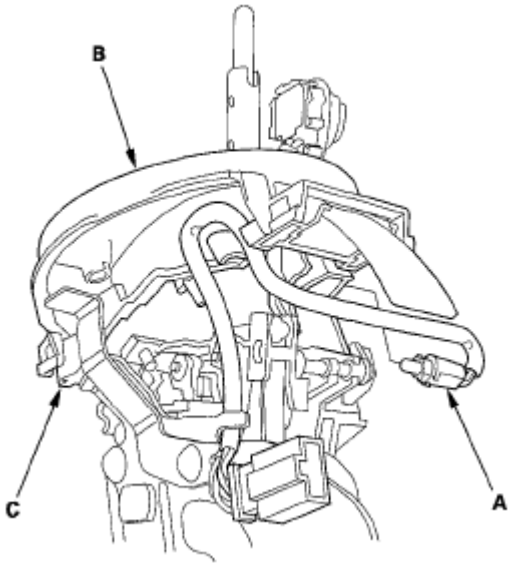


Fig. 387: Identifying A/T Gear Position Indicator Panel And Shift Lever Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Pry the lock tabs on the back of the D3 switch/shift lock solenoid connector (A), and remove the back cover (B).

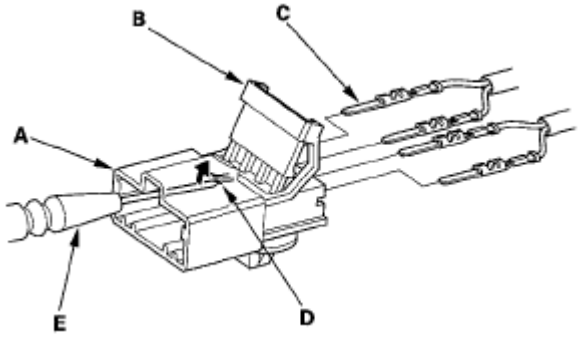


Fig. 388: Prying Lock Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the terminal (C) from the connector by pushing the lock tab (D) up in the connector using a thin blade screwdriver (E). Remove all four terminals.
18. Remove the shift lock solenoid harness clamp from the shift lever bracket, and remove the shift lock solenoid.
19. Replace the shift lock solenoid.
20. Install the new shift lock solenoid (A) on the shift lever/bracket assembly (B) with aligning the shift lock solenoid plunger (C) with the tip of the shift lock stop (D).

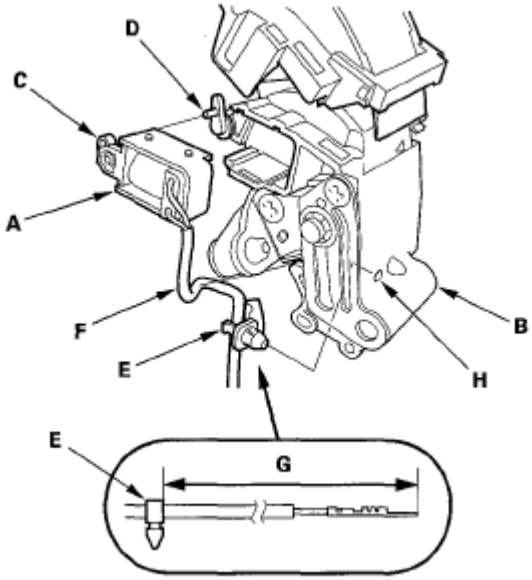


Fig. 389: Identifying Harness Clamp On Shift Lock Solenoid Harness And Harness Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the harness clamp (E) on the shift lock solenoid harness (F) at 128-138 mm (5.0-5.4 in.) (G) from the harness terminal end.
22. Install the clamp in the hole (H) of the shift lever bracket.
23. Install the A/T gear position indicator panel (A) on the shift lever bracket. Apply silicone grease to the shift lever button (B), spring (C), and push rod (D) of the shift lever (E), and install the spring, shift lever button, and shift lever knob (F). Apply non-hardening thread lock sealant to screws (G), and secure the shift lever knob to the shift lever.

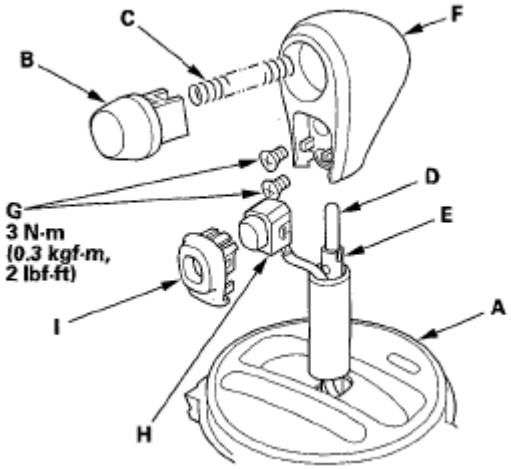


Fig. 390: Identifying D3 Switch And D3 Switch Cover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the D3 switch (H) and the D3 switch cover (I).

25. Install the A/T gear position indicator panel light socket.

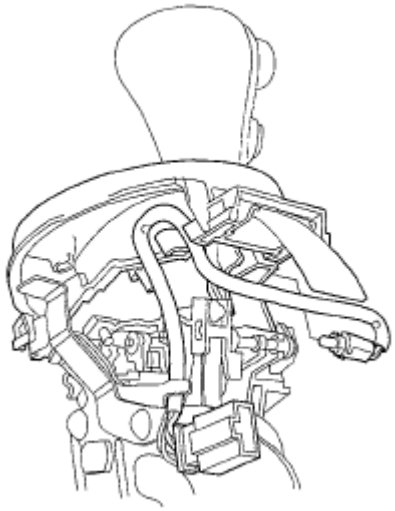


Fig. 391: Identifying A/T Gear Position Indicator Panel Light Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Install the BLU/RED harness terminal (A) of the shift lock solenoid in the No. 3 cavity, and BLK harness terminal (B) in the No. 4 cavity.

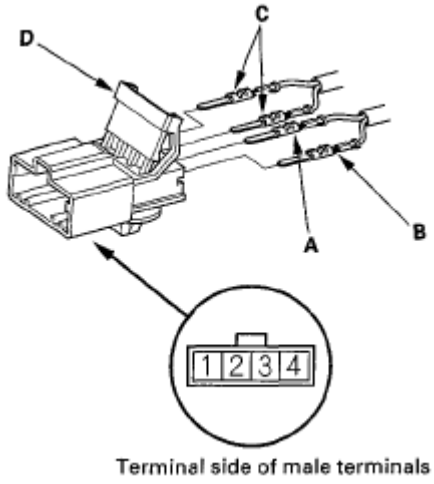


Fig. 392: Identifying BLU/RED Harness Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Install the D3 switch harness terminals (C) in the No. 1 and No. 2 cavities. Either D3 switch harness terminal can be installed in No. 1 and No. 2 cavities.
28. Make sure that all four terminals lock securely, then install the back cover (D) securely in place.
29. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

PARK PIN SWITCH TEST

1. Remove the shift lever console trim (see **CENTER LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the shift lever mounting bolts.

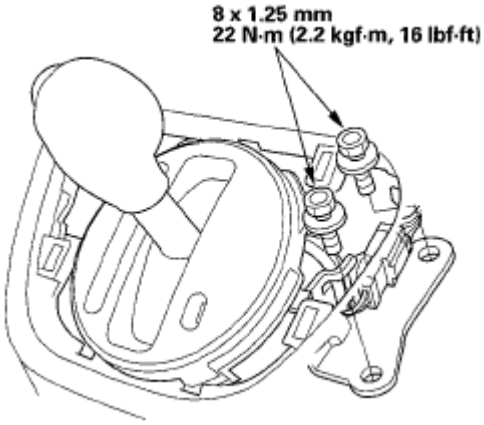


Fig. 393: Identifying Shift Lever Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the park pin switch connector.

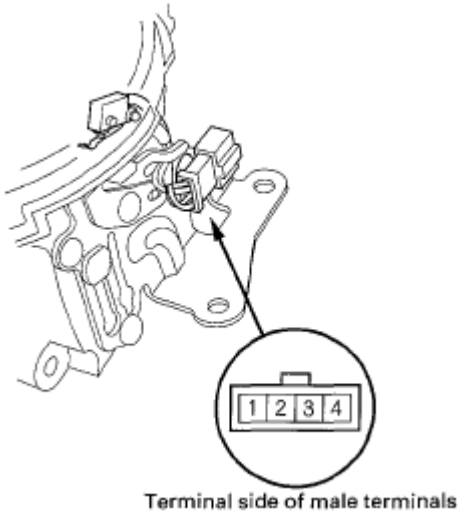


Fig. 394: Identifying Park Pin Switch Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Shift the shift lever into the P position and release the shift lever button, then check for continuity between connector terminals No. 1 and No. 2. There should be no continuity.
5. Shift out of the P position or press the shift lever button while in the P position, and check for continuity between connector terminals No. 1 and No. 2. There should be continuity.

6. If the park pin switch is faulty, replace it.

PARK PIN SWITCH REPLACEMENT

1. Remove the shift lever assembly (see **SHIFT LEVER REMOVAL**).
2. Remove the A/T gear position indicator panel light socket (A).

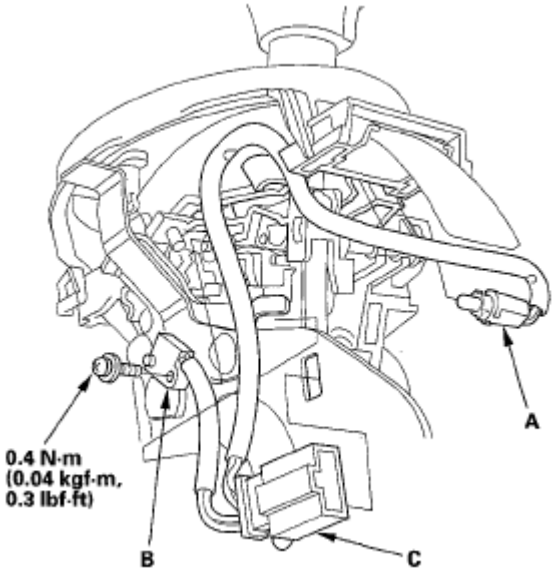


Fig. 395: Identifying Park Pin Switch And Switch Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the park pin switch (B) and the switch connector (C).
4. Pry the lock tabs on the back of the park pin switch connector (A), and remove the back cover (B).

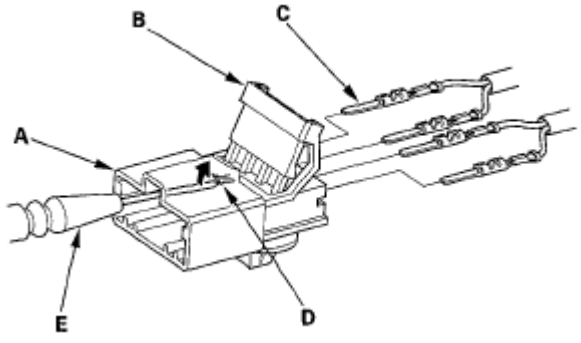


Fig. 396: Prying Lock Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the terminal (C) from the connector by pushing the lock tab (D) up in the connector using a thin blade screwdriver (E). Remove all four terminals.

6. Replace the park pin switch with the new one.
7. Install the GRIM harness terminals (A) of the park pin switch in the No. 1 and No. 2 cavities. Either park pin switch harness terminal can be installed in No. 1 and No. 2.

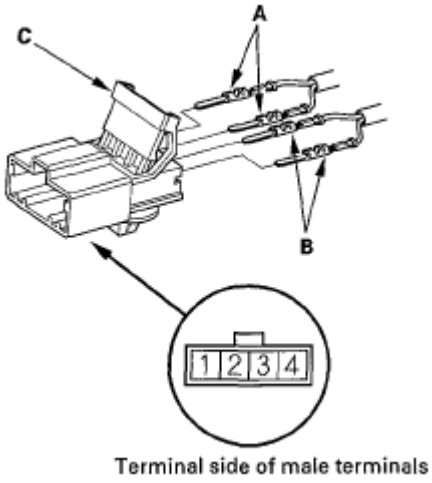


Fig. 397: Identifying GRIM Harness Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the RED/BLK harness terminals (B) in the No. 3 and No. 4 cavities. Either A/T gear position indicator panel light harness terminal can be installed in No. 3 and No. 4 cavities.
9. Make sure that all four terminals lock securely, then install the back cover (C) securely in place.
10. Install the park pin switch. Apply non-hardening thread lock sealant to screw threads, and secure the switch with the screw.
11. Install the A/T gear position indicator panel light socket, and install the connector.
12. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

END COVER REMOVAL

Special Tools Required

Main shaft holder 07GAB-PF50101 or 07GAB-PF50100

NOTE: The illustration shows the 4WD transmission; the 2WD transmission is similar.

1. Remove the line bolt (A) and sealing washers (B), and remove the ATF cooler inlet line (C).

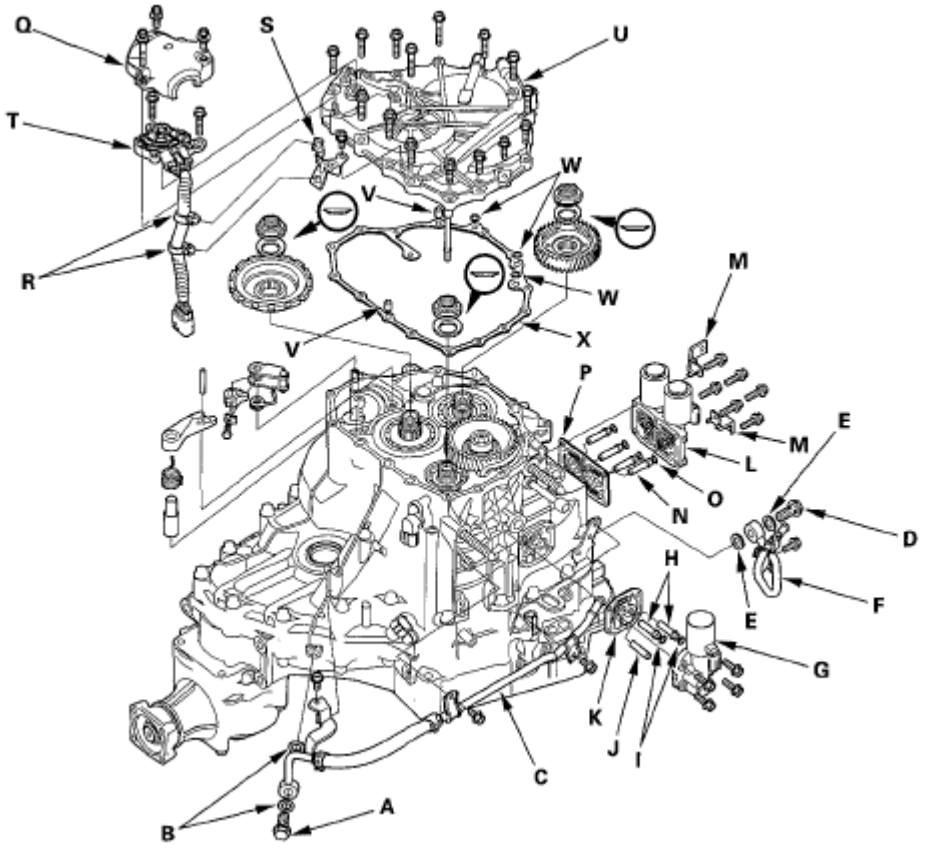


Fig. 398: Disassembled View Of Transmission Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the line bolt (D) and sealing washers (E), and remove the ATF cooler outlet line (F).
3. Remove A/T clutch pressure control solenoid valve A (G), ATF joint pipes (H), O-rings (I), ATF pipe (J), and gasket (K).
4. Remove A/T clutch pressure control solenoid valves B and C (L), harness clamp brackets (M), ATF joint pipes (N), O-rings (0), and gasket (P).
5. Remove the transmission range switch cover (Q).
6. Remove the transmission range switch harness clamps (R) from the clamp bracket (S), and remove the transmission range switch (T).
7. Remove the harness clamp bracket from the end cover (U).
8. Remove the end cover, dowel pins (V), O-rings (W), and end cover gasket (X).
9. Slip the mainshaft holder onto the mainshaft.

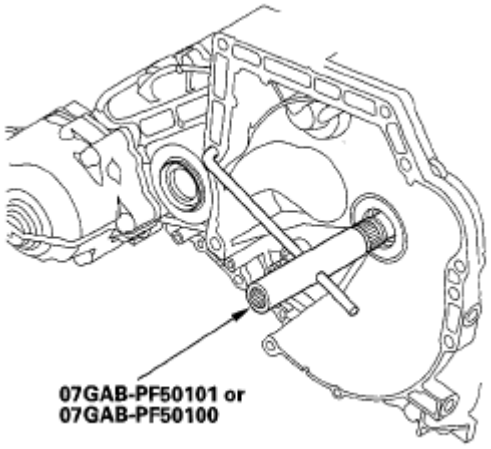


Fig. 399: Identifying Tool (07GAB-PF50101 And 07GAB-PF50100)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Engage the park pawl with the park gear.
11. Cut the lock tab (A) of the each shaft locknut(B) using a chisel (C). Then remove the locknuts and conical spring washers from each shaft.

NOTE:

- **Countershaft and secondary shaft locknuts have left-hand threads.**
- **Keep all of the chiseled particles out of the transmission.**
- **Clean the old mainshaft and countershaft locknuts; they are used to install the press fit idler gear on the mainshaft, and park gear on the countershaft.**

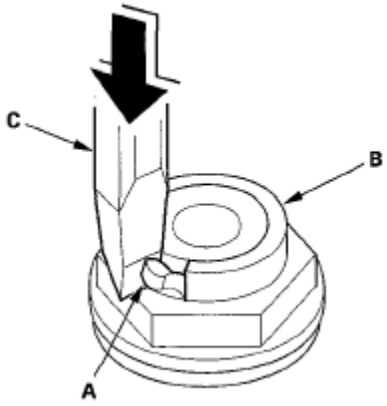


Fig. 400: Tapping Lock Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the mainshaft holder from the mainshaft.
13. Set a two-jaw (or three-jaw) puller (A) on the countershaft (B) by putting a spacer (C) between the puller and countershaft, then remove the park gear(D).

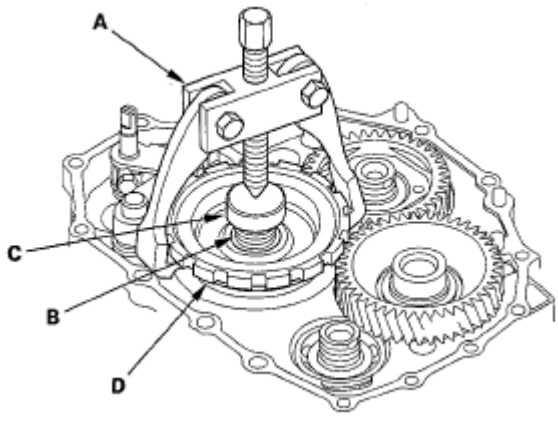


Fig. 401: Setting Two-Jaw Puller On Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install 6x 1.0 mm bolts (A) on the mainshaft idler gear (B). Set a puller (C) on the mainshaft (D) with a spacer (E) between the puller and mainshaft, then remove the mainshaft idler gear.

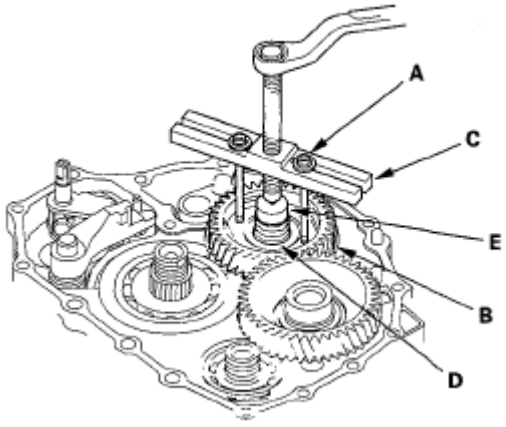


Fig. 402: Setting Puller On Mainshaft With Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the park pawl, park pawl spring, park pawl shaft, and stop shaft.
16. Remove the park lever from the control shaft.

PARK LEVER STOP INSPECTION AND ADJUSTMENT

1. Set the park lever in the P position.
2. Measure the distance (A) between the park pawl shaft (B) and the park lever roller pin (C).

Standard: 57.7-58.7 mm (2.27-2.31 in.)

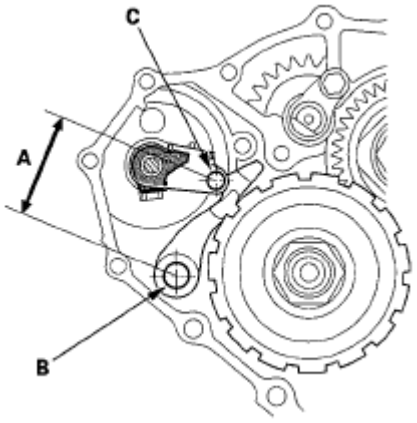


Fig. 403: Measuring Distance Between Park Pawl Shaft And Park Lever Roller Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the measurement is out of standard, select and install the appropriate park lever stop (A) from the table.

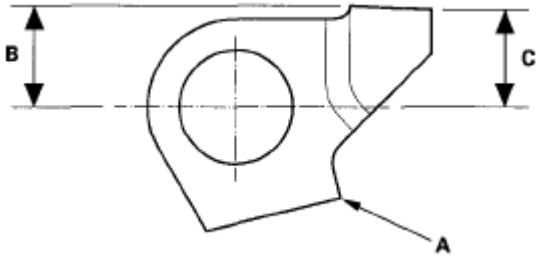


Fig. 404: Measuring Park Lever Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARK LEVER STOP

PARK LEVER STOP

Mark	Part Number	B	C
1	24537-PA9-003	11.00 mm (0.433 in.)	11.00 mm (0.433 in.)
2	24538-PA9-003	10.80 mm (0.425 in.)	10.65 mm (0.419 in.)
3	24539-PA9-003	10.60 mm (0.417 in.)	10.30 mm (0.406 in.)

4. After replacing the park lever stop, make sure the distance is within tolerance.

IDLER GEAR SHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A
- Driver 07749-0010000

- Attachment, 52 x 55 mm 07746-0010400

1. Remove the idler gear shaft bearing (A) from the end cover (B) with the adjustable bearing puller and a commercially available 3/8 "-16 slide hammer (C).

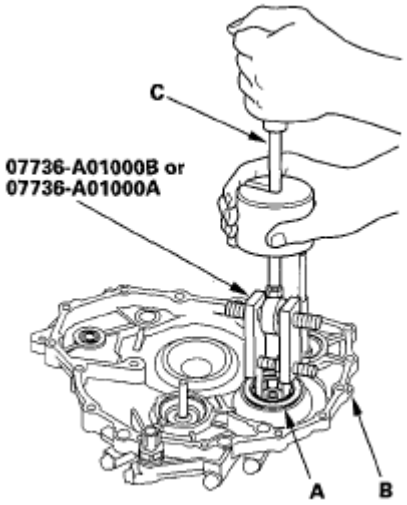


Fig. 405: Identifying Bearing Puller On Idler Gear Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing in the end cover with the driver and 52 x 55 mm attachment.

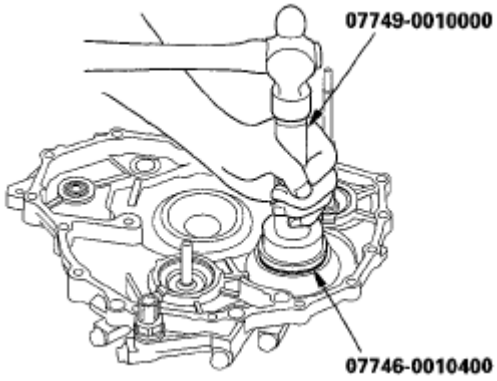


Fig. 406: Tapping Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECTOR CONTROL SHAFT OIL SEAL REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 22 x 24 mm 07746-0010800

1. Remove the oil seal (A) from the end cover (B).

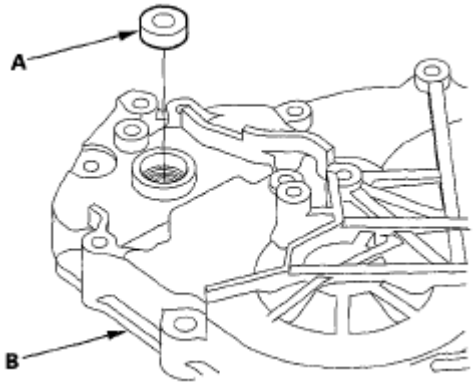


Fig. 407: Identifying Oil Seal And End Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new oil seal flush to the end cover with the driver and 22 x 24 mm attachment.

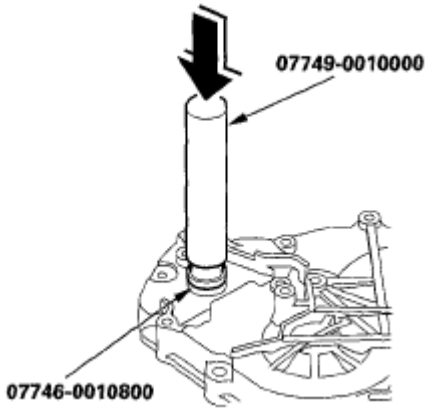


Fig. 408: Identifying Oil Seal And Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECTOR CONTROL SHAFT BEARING REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 22 x 24 mm 07746-0010800

1. Remove the oil seal from the end cover, then remove the bearing.

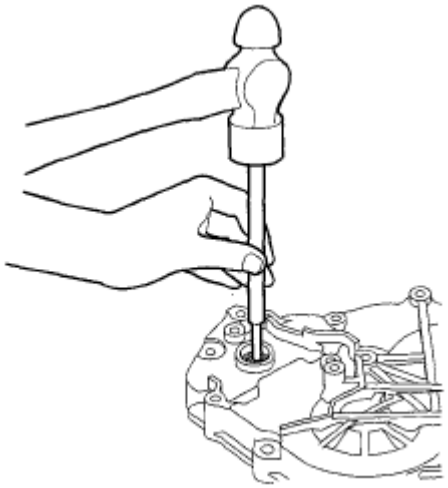


Fig. 409: Tapping Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing flush to the end cover with the driver and 22 x 24 mm attachment.

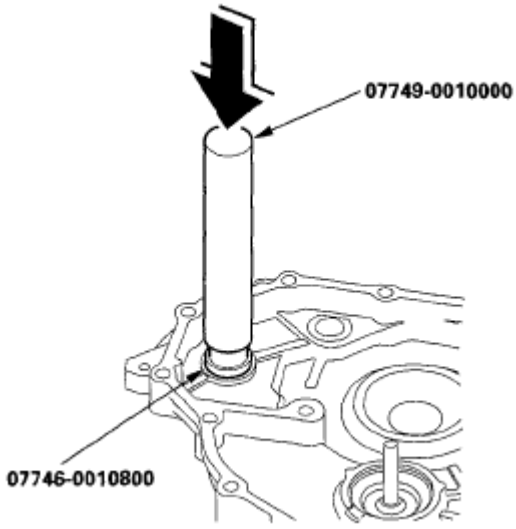


Fig. 410: Identifying Bearing And Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal.

ATF FEED PIPE REPLACEMENT

1. Remove the snap rings (A), ATF feed pipes (B), and feed pipe flanges (C) from the end cover (D).

NOTE: Replace the end cover, if the 1st clutch ATF feed pipe (E) replacement is required.

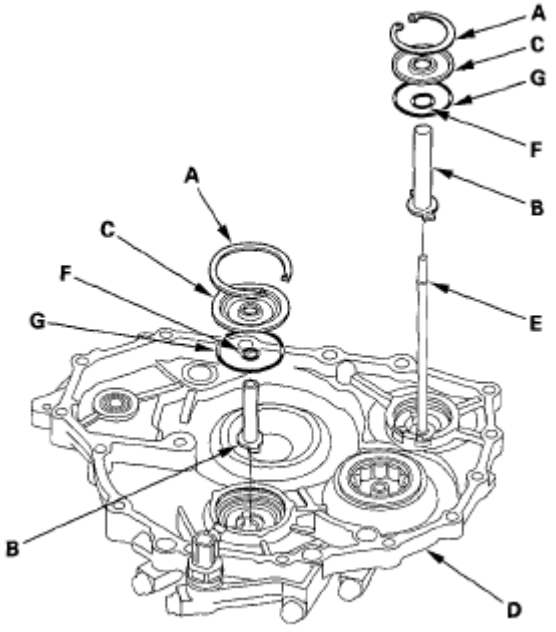


Fig. 411: Identifying Snap Rings, ATF Feed Pipes And Feed Pipe Flanges And End Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install new O-rings (F) over the ATF feed pipes.
3. Install the ATF feed pipes in the end cover by aligning the feed pipe tabs with the indentations in the end cover.
4. Install new O-rings (G) in the end cover, then install the feed pipe flanges over the ATF feed pipes.
5. Secure the ATF feed pipes and feed pipe flanges with the snap rings.

HOUSING AND SHAFT ASSEMBLY REMOVAL

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer mechanism.

1. Remove the ATF feed pipe (A) from the idler gear shaft, and the ATF lubrication pipe (B) from the transmission housing.

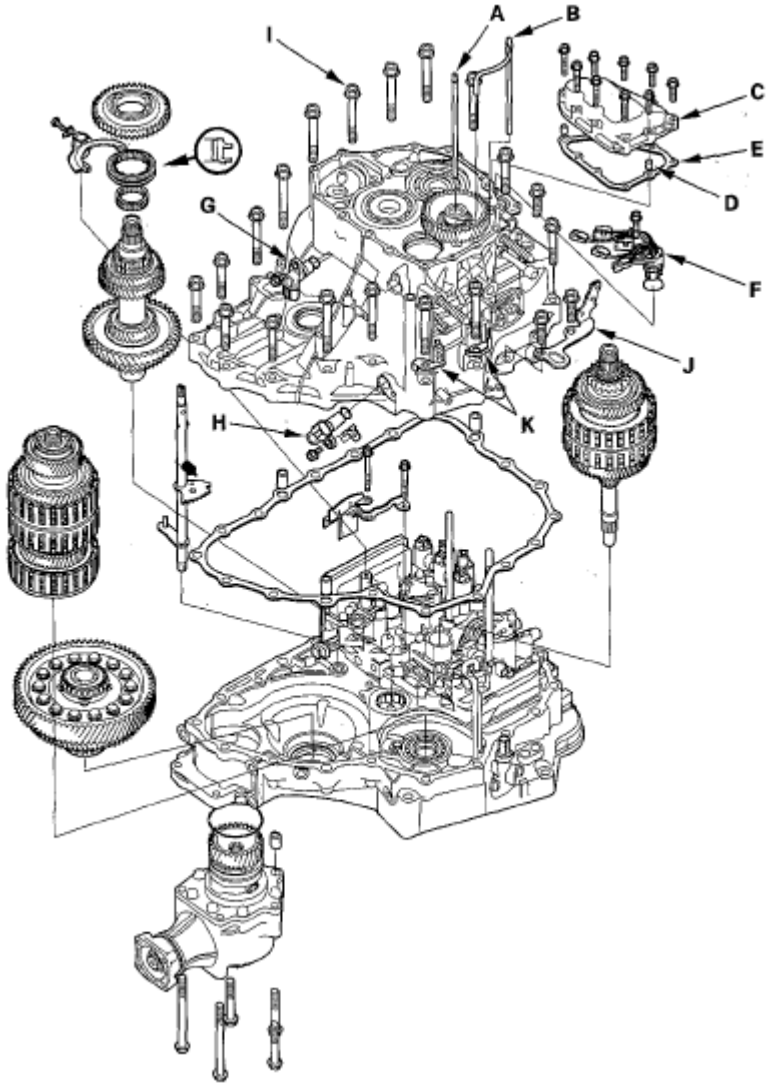


Fig. 412: Identifying Transmission Housing Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the shift solenoid cover (C), dowel pins (D), and gasket (E).
3. Disconnect the connectors from the shift solenoid valves, and remove the solenoid harness connector (F).
4. Remove the input shaft (mainshaft) speed sensor (G) and output shaft (countershaft) speed sensor (H).
5. Remove the transmission housing mounting bolts (I) (20 bolts), transmission hanger (J), and harness clamp brackets (K).
6. Align the spring pin (A) on the selector control shaft (B) with the transmission housing groove (C) by turning the control shaft with the control lever.

NOTE: Do not squeeze the end of the control shaft tips together when turning the shaft.

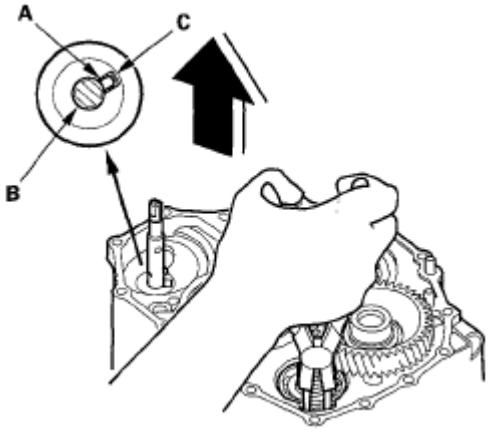


Fig. 413: Aligning Spring Pin On Selector Control Shaft With Transmission Housing Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. While expanding the snap ring of the secondary shaft bearing using the snap ring pliers, lift the transmission housing. Release the snap ring pliers and remove the transmission housing.
8. Remove the countershaft reverse gear and needle bearing.
9. Remove the lock bolt securing the shift fork, then remove the shift fork with the reverse selector together.
10. Remove the selector control lever from the selector control shaft.
11. Unlock the detent spring (A) from the detent arm (B).

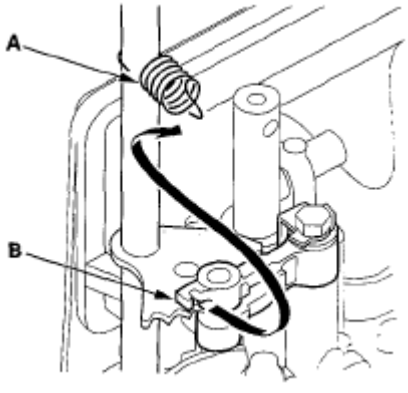


Fig. 414: Identifying Detent Spring From Detent Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the selector control shaft (A) from the torque converter housing.

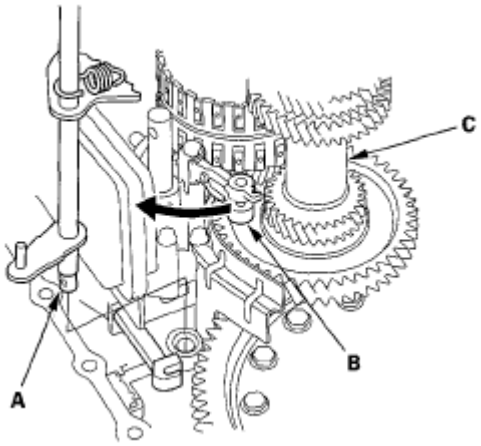


Fig. 415: Identifying Selector Control Shaft And Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Turn the detent arm (B) away from the countershaft (C).
14. Remove the main shaft sub assembly (A), countershaft subassembly (B), and secondary shaft subassembly (C) together. Do not bump the countershaft on the baffle plate (D).

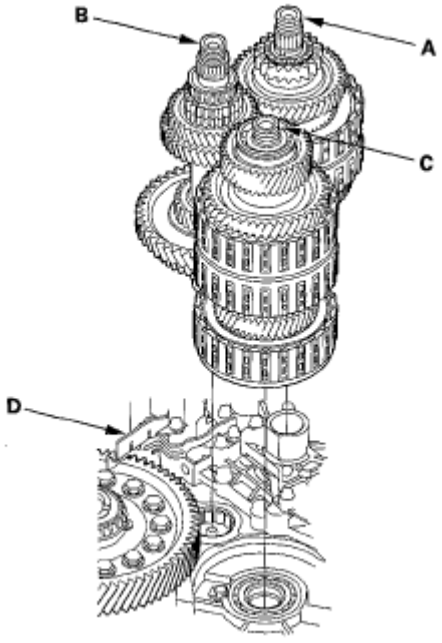


Fig. 416: Identifying Main Shaft Sub Assembly, Countershaft Subassembly And Secondary Shaft Subassembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the baffle plate.
16. Remove the differential assembly.
17. 4WD: Remove the transfer assembly.

BEARING REMOVAL

Special Tools Required

- Attachment, 78 x 90 mm 07GAD-SD40101
- Driver 07749-0010000
- Attachment, 42 x 47 mm 07746-0010300

1. Remove the idler gear shaft when removing the mainshaft bearing and idler gear shaft bearing.

NOTE: If you are only removing the countershaft bearing, idler gear shaft removal is not needed.

2. To remove the mainshaft bearing (A) and countershaft bearing (B) from the transmission housing, expand each snap ring with the snap ring pliers, then push the bearing out with the driver and the 78 x 90 mm attachment.

NOTE: Do not remove the snap ring unless it's necessary to clean the grooves in the housing.

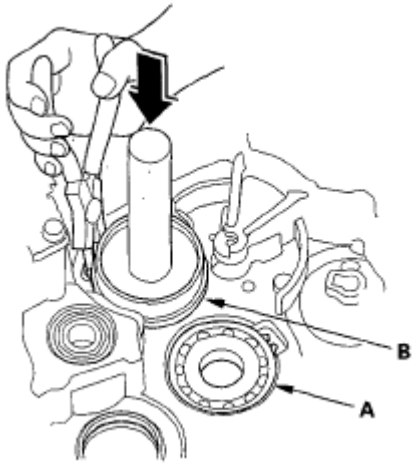


Fig. 417: Identifying Mainshaft Bearing And Countershaft Bearing And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Expand the snap ring of the idler gear shaft bearing with the snap ring pliers, then push the bearing out with the driver and the 42 x 47 mm attachment.

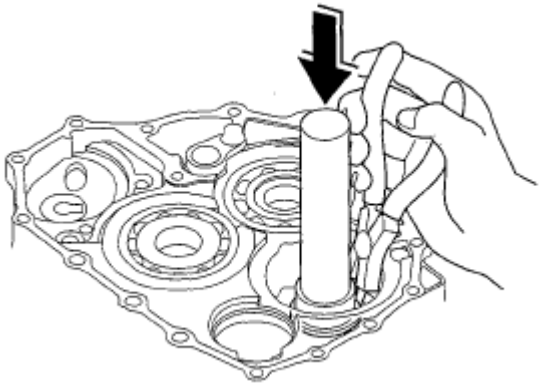


Fig. 418: Expanding Snap Ring Of Idler Gear Shaft Bearing With Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BEARING INSTALLATION

Special Tools Required

- Attachment, 78 x 90 mm 07GAD-SD40101
- Driver 07749-0010000
- Attachment, 42 x 47 mm 07746-0010300

1. Install the bearings in the direction shown.
2. Expand each snap ring with the snap ring pliers, and install the mainshaft bearing (A) and countershaft bearing (B) with the driver and the 78 x 90 mm attachment part-way into the housing.

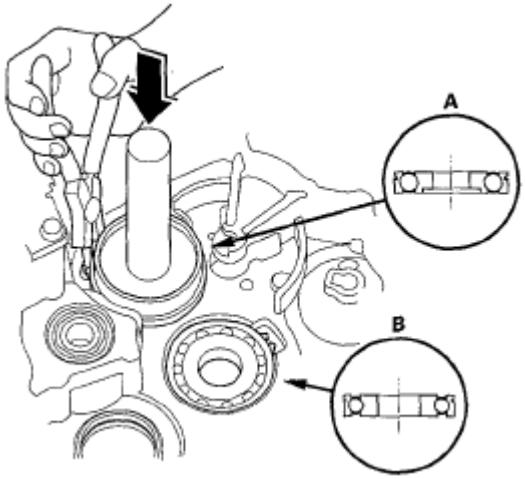


Fig. 419: Expanding Snap Ring With Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the pliers, then push the bearing down into the housing until the snap ring snaps in place around it.

4. Expand the snap ring of the idler gear shaft (A) with the snap ring pliers, and install the bearing with the driver and the 42 x 47 mm attachment part-way into the housing.

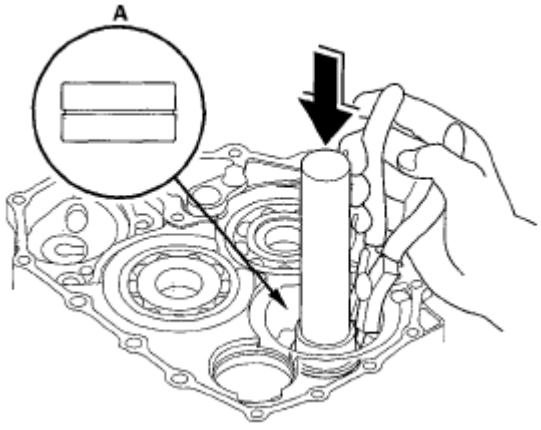


Fig. 420: Expanding Snap Ring Of Idler Gear Shaft With Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the pliers, then push the bearing down into the housing until the snap ring snaps in place around it.
6. After installing the bearings check that the snap rings (A) are seated in the bearing and housing grooves, and that the ring end gaps (B) are correct.

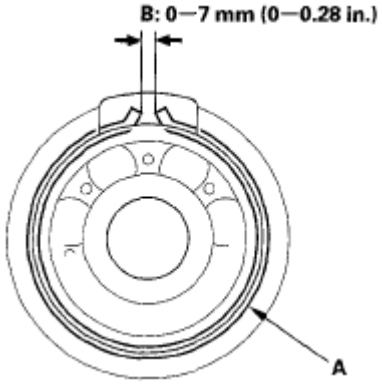


Fig. 421: Checking Snap Rings Seated In Bearing And Housing Grooves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the idler shaft.

REVERSE IDLER GEAR REMOVAL AND INSTALLATION

REMOVAL

1. Remove the bolt (A) securing the reverse idler gear shaft holder.

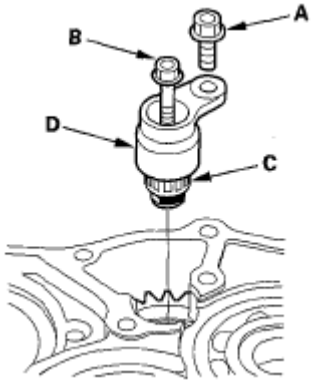


Fig. 422: Identifying Reverse Idler Gear Shaft And Gear Shaft Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a 5 x 0.8 mm bolt (B) in the reverse idler gear shaft, and pull it to remove the reverse idler gear shaft (C) and gear shaft holder (D) together.
3. Remove the reverse idler gear.

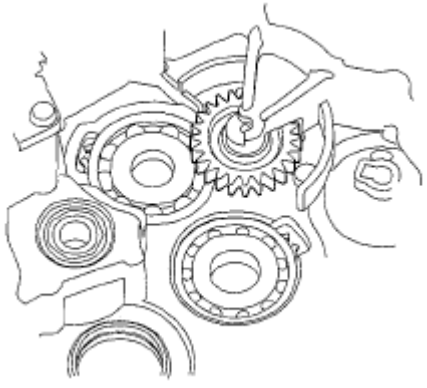


Fig. 423: Identifying Reverse Idler Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the reverse idler gear in the transmission housing.
2. Lightly coat the reverse idler gear shaft (A), needle bearing (B), and new O-rings (C) with lithium grease.

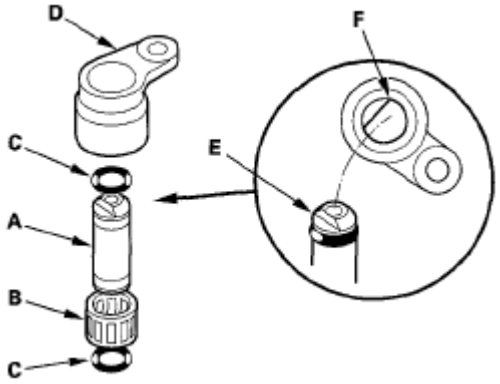


Fig. 424: Identifying Reverse Idler Gear Shaft, Needle Bearing And O-Rings With Lithium Grease
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Assemble the new O-rings and needle bearing on the reverse idler gear shaft, then install the reverse idler gear shaft in the reverse idler gear shaft holder (D). Align the D-shaped cut out (E) of the shaft with the D-shaped area (F) of the holder.
4. Install the reverse idler gear shaft/holder assembly on the transmission housing.

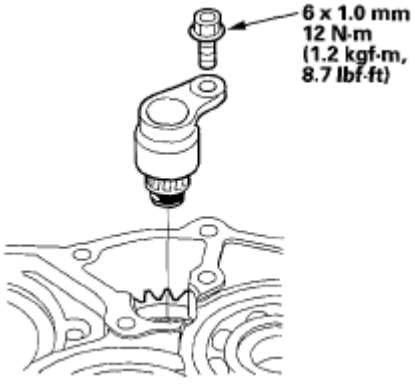


Fig. 425: Identifying Reverse Idler Gear Shaft/Holder Assembly And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE BODY AND ATF STRAINER REMOVAL

NOTE: The illustration shows the 4WD transmission; the 2WD transmission is similar.

1. Remove the ATF feed pipes (A) and ATF joint pipes (B).

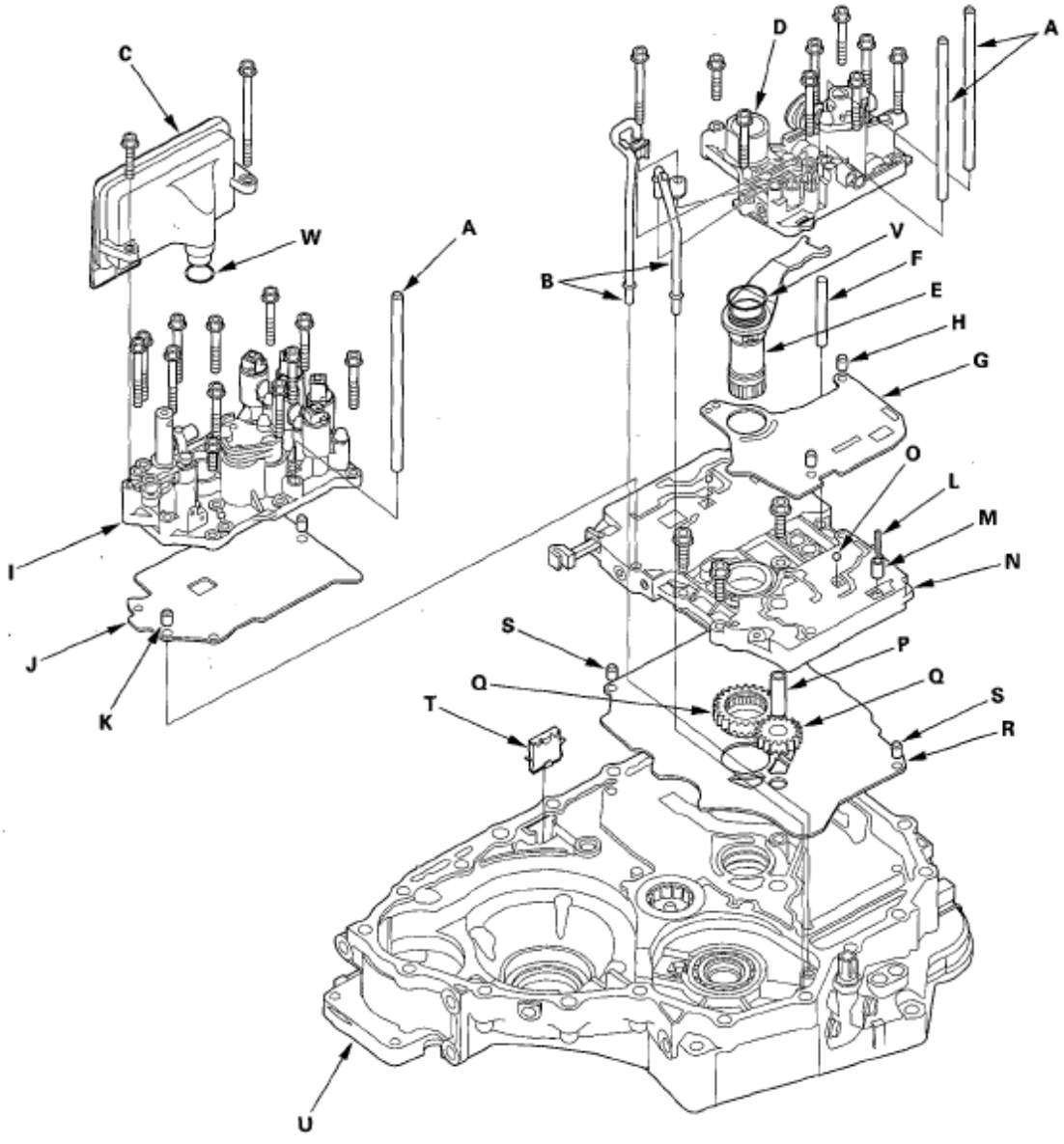


Fig. 426: Exploded View Of Valve Body And ATF Strainer Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the ATF strainer (C) (two bolts).
3. Remove the regulator valve body (D) (eight bolts).
4. Remove the stator shaft (E) and stator shaft stop (F), then remove the regulator separator plate (G) and two dowel pins (H).
5. Remove the servo body (I) (11 bolts), then remove the separator plate (J) and two dowel pins (K).
6. Remove the cooler check valve spring (L) and valve (M), then remove the main valve body (N) (three bolts). Do not let the check balls (O) fall out.
7. Remove the ATF pump driven gear shaft (P), then remove the ATF pump gears (Q).
8. Remove the main separator plate (R) and two dowel pins (S).

9. Remove the ATF magnet (T), clean and reinstall it in the torque converter housing (U).
10. Clean the inlet opening (A) of the ATF strainer (B) thoroughly with compressed air, then check that it is in good condition and that the inlet opening is not clogged.

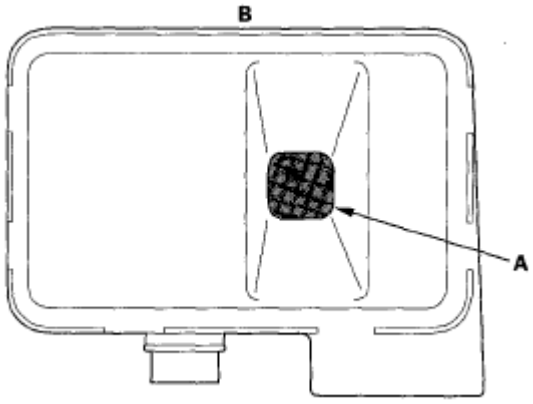


Fig. 427: Identifying Inlet Opening Of ATF Strainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Test the ATF strainer by pouring clean ATF through the inlet opening, and replace it if it is clogged or damaged.
12. Remove the O-rings (V) (W) from the stator shaft and ATF strainer. Install the new ones when installing the valve bodies.

VALVE BODY REPAIR

NOTE: This repair is only necessary if one or more of the valves in a valve body do not slide smoothly in their bores. Use this procedure to free the valves.

1. Soak a sheet of # 600 abrasive paper in ATF for about 30 minutes.
2. Carefully tap the valve body so the sticking valve drops out of its bore. It may be necessary to use a small screwdriver to pry the valve free. Be careful not to scratch the bore with the screwdriver.
3. Inspect the valve for any scuff marks. Use the ATF-soaked # 600 paper to polish off any burrs that are on the valve, then wash the valve in solvent and dry it with compressed air.
4. Roll up half a sheet of ATF-soaked #600 paper and insert it in the valve bore of the sticking valve. Twist the paper slightly, so that it unrolls and fits the bore tightly, then polish the bore by twisting the paper as you push it in and out.

NOTE: The valve body is aluminum and does not require much polishing to remove any burrs.

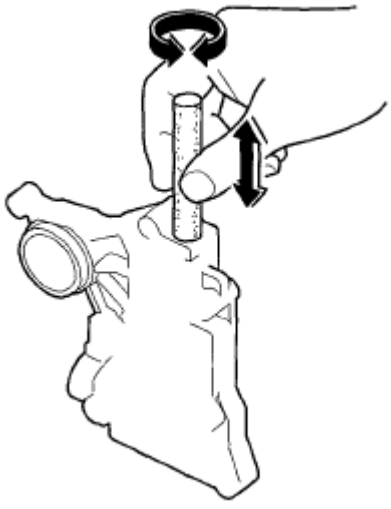


Fig. 428: Inserting Valve Bore Of Sticking Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the #600 paper. Thoroughly wash the entire valve body in solvent, then dry it with compressed air.
6. Coat the valve with ATF, then drop it into its bore. It should drop to the bottom of the bore under its own weight. If not, repeat step 4, then retest. If the valve still sticks, replace the valve body.

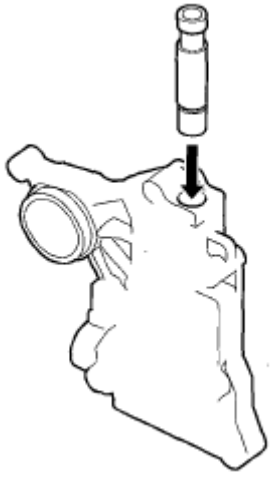


Fig. 429: Coating Valve With ATF Drop Into Bore
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve, and thoroughly clean it and the valve body with solvent. Dry all parts with compressed air, then reassemble using ATF as a lubricant.

VALVE BODY VALVE INSTALLATION

1. Coat all parts with ATF before assembly.

2. Install the valves and springs in the sequence shown for the main valve body (see **MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), regulator valve body (see **REGULATOR VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), and servo body (see **SERVO BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**). Refer to the following valve cap illustrations, and install each valve cap so the end shown facing up will be facing the outside of the valve body.

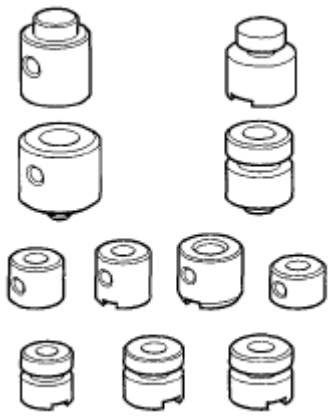


Fig. 430: Identifying Valves And Springs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install all the springs and seats. Insert the spring (A) in the valve, then install the valve in the valve body (B). Push the spring in with a screwdriver, then install the spring seat (C).

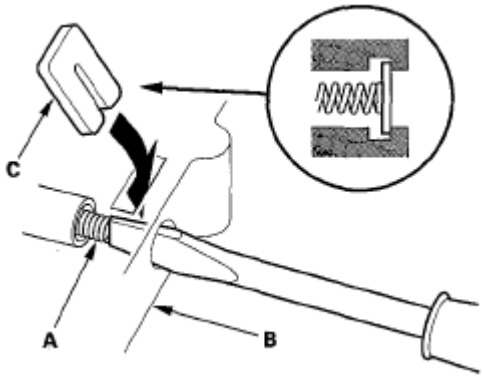


Fig. 431: Pushing Spring In With Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Clean all parts thoroughly in solvent, and dry them with compressed air. Blow out all passages.
2. Do not use a magnet to remove the check balls, it may magnetize the balls.
3. Inspect the valve body for scoring and damage.
4. Check all valves for free movement. If any fail to slide freely, refer to valve body repair (see **VALVE**

BODY REPAIR).

5. Coat all parts with ATF during assembly.

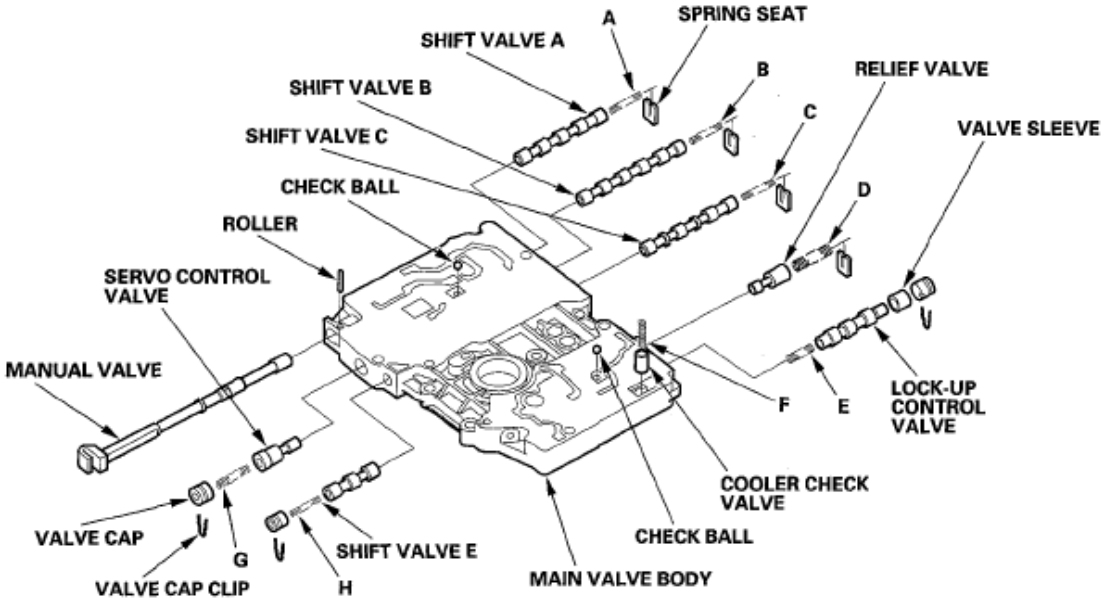


Fig. 432: Disassembled View Of Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SPRING SPECIFICATIONS

SPRING SPECIFICATIONS

Springs		Standard (New)-Unit: mm (in.)			
		Wire Diameter	O.D.	Free Length	No. of Coils
A	Shift valve A spring	0.8(0.031)	5.6 (0.220)	28.1 (1.106)	15.9
B	Shift valve B spring	0.8(0.031)	5.6 (0.220)	28.1 (1.106)	15.9
C	Shift valve C spring	0.8(0.031)	5.6 (0.220)	28.1(1.106)	15.9
D	Relief valve spring	1.0(0.039)	9.6 (0.378)	34.1 (1.343)	10.2
E	Lock-up control valve spring	0.65 (0.026)	7.1 (0.280)	23.1 (0.909)	12.7
F	Cooler check valve spring	0.85 (0.033)	6.6 (0.260)	27.0(1.063)	11.3
G	Servo control valve spring	0.7 (0.028)	6.6 (0.260)	35.7(1.406)	17.2
H	Shift valve E spring	0.8(0.031)	5.6 (0.220)	28.1(1.106)	15.9

ATF PUMP INSPECTION

1. Install the ATF pump drive gear (A), driven gear (B), and ATF pump driven gear shaft (C) in the main valve body (D). Lubricate all parts with ATF, and install the ATF pump driven gear with its grooved and chamfered side facing up.

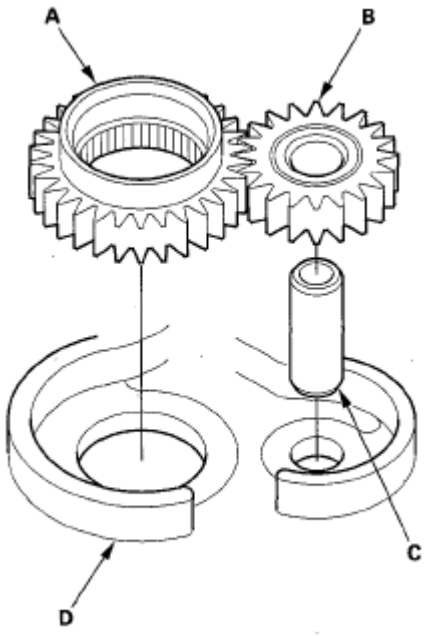


Fig. 433: Identifying ATF Pump Drive Gear Driven Gear And ATF Pump Driven Gear Shaft In Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the side clearance of the ATF pump drive gear (A) and driven gear (B).

   ATF Pump Gears Side (Radial) Clearance:

   Standard (New):

   ATF Pump Drive Gear:

   0.210-0.265 mm (0.0083-0.0104 in.)

   ATF Pump Driven Gear:

   0.070-0.125 mm (0.0028-0.0049 in.)

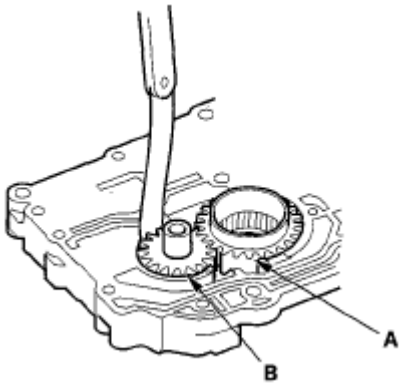


Fig. 434: Measuring Side Clearance Of ATF Pump Drive Gear And Driven Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the ATF pump driven gear shaft. Measure the thrust clearance between the ATF pump driven gear (A) and the valve body (B) with a straight edge (C) and a feeler gauge (D).

   ATF Pump Drive/Driven Gear Thrust (Axial)

   Clearance:

   Standard (New): 0.03-0.06 mm (0.001-0.002 in.)

   Service Limit: 0.07 mm (0.003 in.)

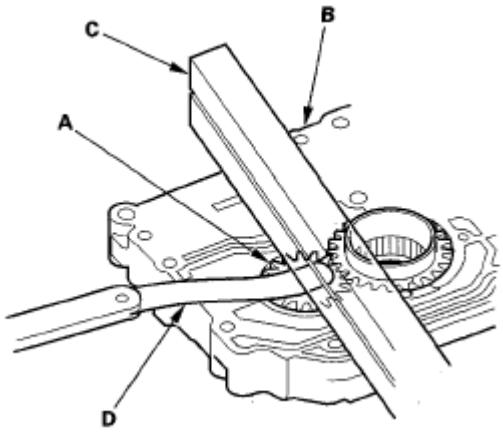


Fig. 435: Measuring Thrust Clearance Between ATF Pump Driven Gear And Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REGULATOR VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Clean all parts thoroughly insolvent, and dry them with compressed air. Blowout all passages.
2. Inspect the valve body for scoring and damage.

3. Check all valves for free movement. If any fail to slide freely, refer to valve body repair (see **VALVE BODY REPAIR**).
4. Hold the regulator spring cap in place while removing the stop bolt. The regulator spring cap is spring loaded.
5. Coat all parts with ATF during assembly.
6. When reassembling the valve body, align the hole in the regulator spring cap with the hole in the valve body, then press the spring cap into the valve body, and tighten the stop bolt.

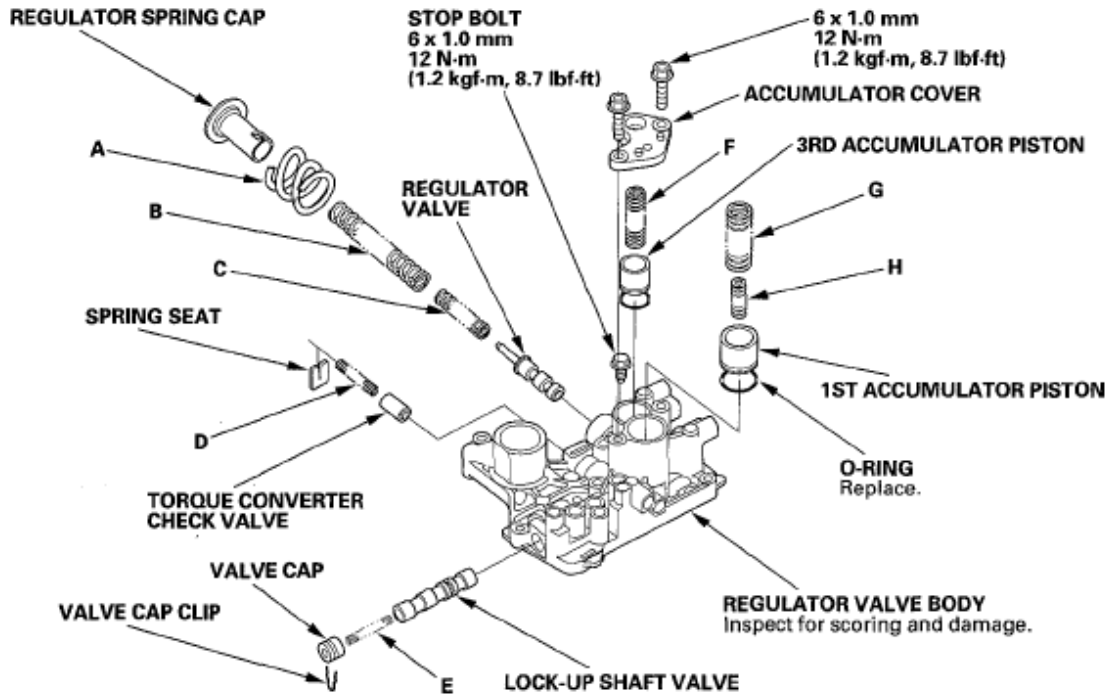


Fig. 436: Disassembled View Of Regulator Valve Body With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SPRING SPECIFICATIONS

SPRING SPECIFICATIONS

Springs		Standard (New)-Unit: mm (in.)			
		Wire Diameter	O.D.	Free Length	No. of Coils
A	Stator reaction spring	4.5(0.177)	35.4(1.394)	30.3(1.193)	1.92
B	Regulator valve spring A	1.9(0.075)	14.7 (0.579)	80.6(3.173)	16.1
C	Regulator valve spring B	1.6(0.063)	9.2 (0.362)	44.0(1.732)	12.5
D	Torque converter check valve spring	1.2(0.047)	8.6 (0.339)	33.8(1.331)	12.2

E	Lock-up shift valve spring	1.0(0.039)	6.6 (0.260)	35.5(1.398)	18.2
F	3rd accumulator spring	2.5 (0.098)	14.6(0.575)	29.9(1.177)	4.9
G	1st accumulator spring A	2.4 (0.094)	18.6(0.732)	49.0(1.929)	7.1
H	1st accumulator spring B	2.3(0.091)	12.2 (0.480)	31.5(1.240)	6.6

SERVO BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Clean all parts thoroughly in solvent, and dry them with compressed air. Blowout all passages.
2. Inspect the valve body for scoring and damage.
3. Check shift valve D for free movement. If any fail to slide freely, refer to valve body repair (see **VALVE BODY REPAIR**).
4. When removing and installing the shift solenoid valves, refer to shift solenoid valves removal and installation (see **SHIFT SOLENOID VALVE REMOVAL AND INSTALLATION**).
5. Coat all parts with ATF during assembly.
6. Replace the O-rings with new ones.

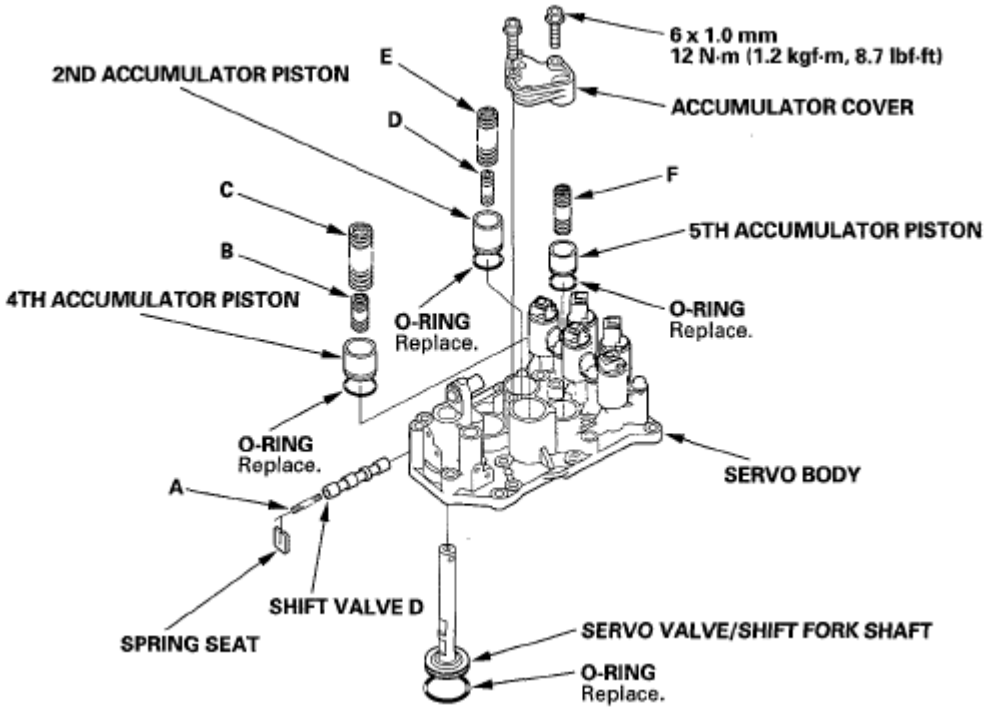


Fig. 437: Disassembled View Of Servo Body With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SPRING SPECIFICATIONS

SPRING SPECIFICATIONS

Springs		Standard (New)-Unit: mm (in.)			
		Wire Diameter	O.D.	Free Length	No. of Coils
A	Shift valve D spring	0.8 (0.031)	5.6 (0.220)	28.1 (1.106)	15.9
B	4th accumulator spring B	2.3 (0.091)	12.2 (0.480)	31.5 (1.240)	6.6
C	4th accumulator spring A	2.4 (0.094)	18.6 (0.732)	49.0 (1.929)	7.1
D	2nd accumulator spring B	2.0 (0.079)	10.6 (0.417)	34.0 (1.339)	8.0
E	2nd accumulator spring A	2.2 (0.087)	16.6 (0.654)	48.02 (1.898)	8.5
F	5th accumulator spring	2.5 (0.098)	14.6 (0.575)	29.9 (1.177)	4.9

SHIFT SOLENOID VALVE REMOVAL AND INSTALLATION

NOTE:

- **Do not hold the shift solenoid connector to remove and to install the shift solenoid valves. Hold the shift solenoid valve body.**
- **Do not install shift solenoid valve A before installing shift solenoid valve D, and do not install shift solenoid valve B before solenoid valve E. If solenoid valves A and B are installed before solenoid valves D and E, it may damage the hydraulic control system.**

1. Remove the shift solenoid valves by holding the solenoid valve body.
2. Install new O-rings (F) on each shift solenoid valves.

NOTE: **New shift solenoid valve comes with new O-rings. If you install a new shift solenoid valve, use the O-rings provided on it.**

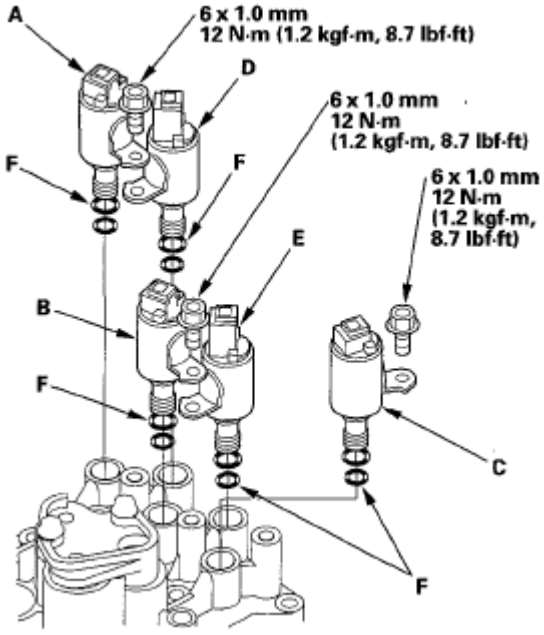


Fig. 438: Identifying Shift Solenoid Valve Remove / Install Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install shift solenoid valve D by holding the shift solenoid valve body; be sure to install mounting bracket contacts the servo body.
4. Install shift solenoid valve A by holding the shift solenoid valve body; be sure to install mounting bracket contacts the bracket on shift solenoid valve D.
5. Install shift solenoid valve E by holding the shift solenoid valve body; be sure to install mounting bracket contacts the servo body.
6. Install shift solenoid valve B by holding the shift solenoid valve body; be sure to install mounting bracket contacts the bracket on shift solenoid valve E.
7. Install shift solenoid valve C by holding the shift solenoid valve body; be sure to install mounting bracket contacts the servo body.

MAINSHAFT BEARING AND OIL SEAL REPLACEMENT

Special Tools Required

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A
- Driver 07749-0010000
- Attachment, 62 x 68 mm 07746-0010500
- Attachment, 72 x 75 mm 07746-0010600

1. Remove the mainshaft bearing and oil seal with the adjustable bearing puller and a commercially available 3/8 "-16 slide hammer (A).

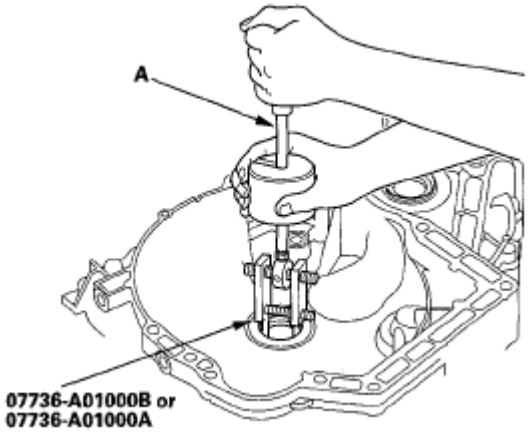


Fig. 439: Identifying Mainshaft Bearing And Oil Seal With Adjustable Bearing Puller
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new mainshaft bearing until it bottoms in the torque converter housing with the driver and 62 x 68 mm attachment.

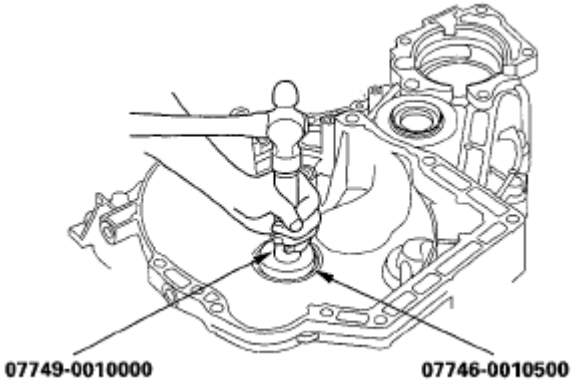


Fig. 440: Tapping Mainshaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal flush with the housing with the driver and 72 x 75 mm attachment.

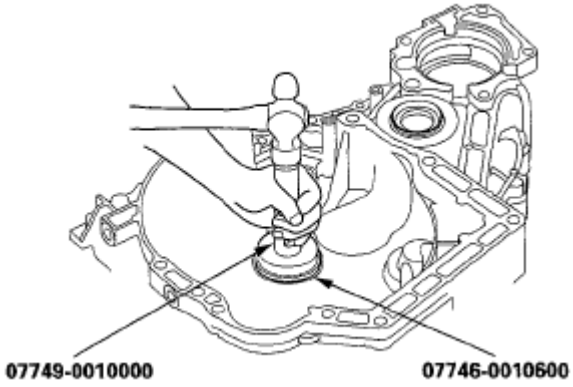


Fig. 441: Tapping Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A
- Driver 07749-0010000
- Attachment, 62 x 68 mm 07746-0010500

1. Remove the countershaft bearing with the adjustable bearing puller and a commercially available 3/8 "-16 slide hammer (A).

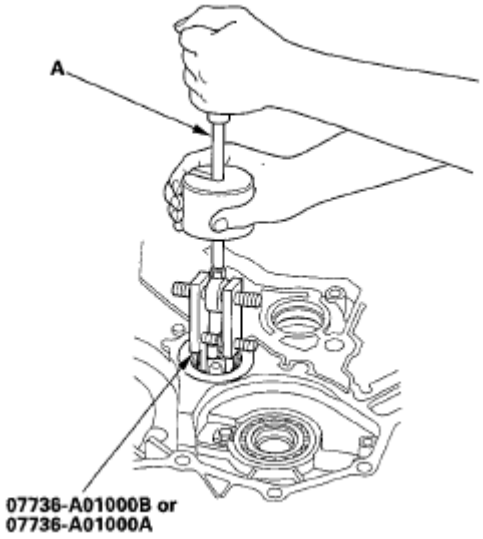


Fig. 442: Identifying Countershaft Bearing With Adjustable Bearing Puller
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the ATF guide plate (A), and check it for wear and damage. If the guide plate is worn or damaged, replace it.

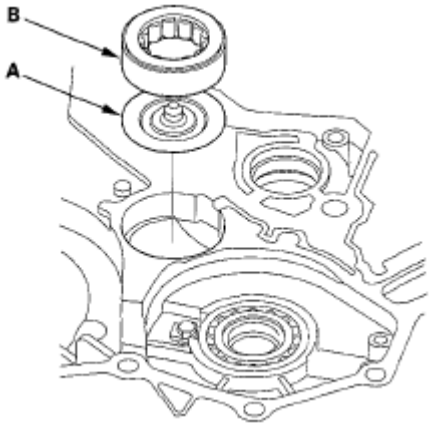


Fig. 443: Identifying ATF Guide Plate And Countershaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the ATF guide plate in the housing, and install the new countershaft bearing (B).
4. Install the new countershaft bearing securely in the housing with the driver and the 62 x 68 mm attachment.

attachment.

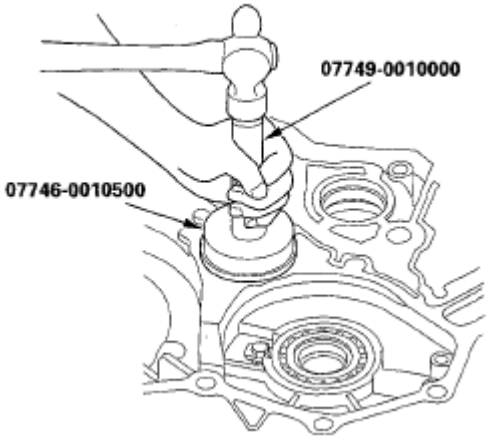


Fig. 444: Tapping Countershaft Bearing In Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make sure that the bearing outer race notch-cut (A) is installed at a height of 0-0.05 mm (0-0.002 in.) (B) above the housing surface (C). Do not install the bearing higher than 0.05 mm (0.002 in.) above the housing surface.

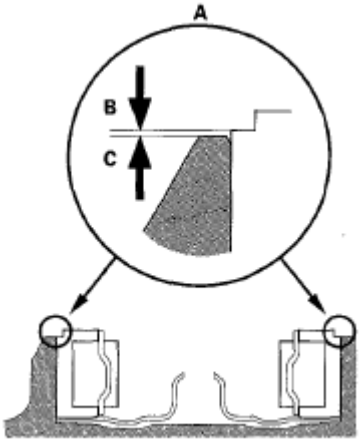


Fig. 445: Identifying Bearing Outer Race Notch-Cut Installation Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT BEARING REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 62 x 68 mm 07746-0010500

1. Remove the bolt, then remove the lock washer (A) and bearing set plate (B).

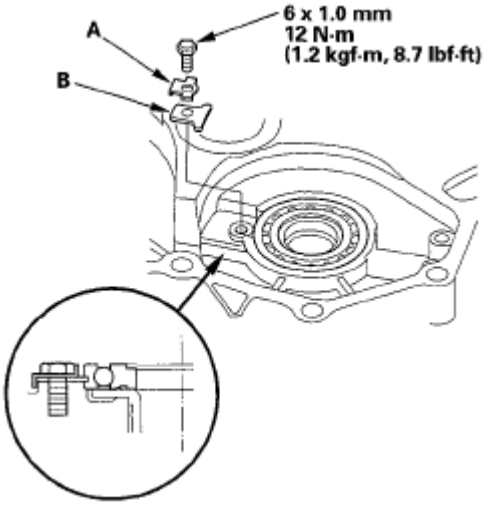


Fig. 446: Identifying Lock Washer And Bearing Set Plate With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the secondary shaft bearing (A) by heating the housing to about 212°F (100°C) with a heat gun (B). Do not heat the housing more than 212°F (100°C).

NOTE: Let the housing cool to normal temperature before installing the bearing.

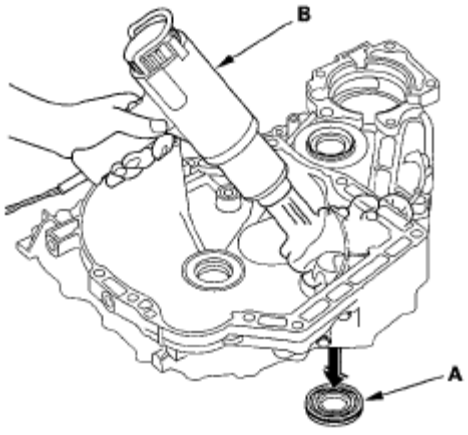


Fig. 447: Identifying Secondary Shaft Bearing Heating Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new O-rings (A) on the ATF guide collar (B), then install the ATF guide collar in the housing.

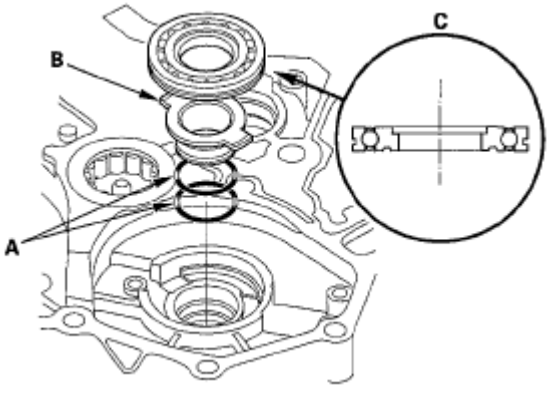


Fig. 448: Identifying O-Rings On ATF Guide Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the new secondary shaft bearing (C) in the direction shown.
5. Install the new secondary shaft bearing with the driver and 62 x 68 mm attachment securely in the housing.

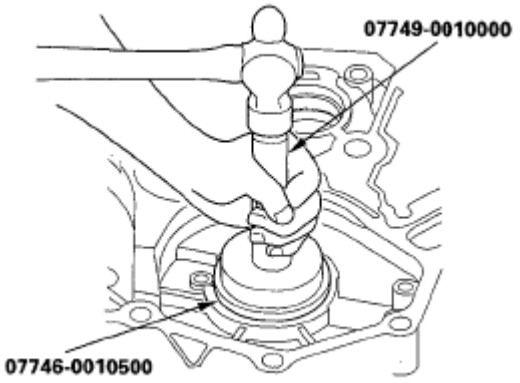


Fig. 449: Tapping Secondary Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check that the bearing groove aligns with the housing surface, then install the bearing set plate aligned with the bearing groove.
7. Install the new lock washer and bolt, then bend the lock tab of the lock washer against the bolt head.

SELECTOR CONTROL SHAFT OIL SEAL REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Oil seal driver attachment 07947-ZV00100

1. Remove the oil seal (A) from the torque converter housing (B).

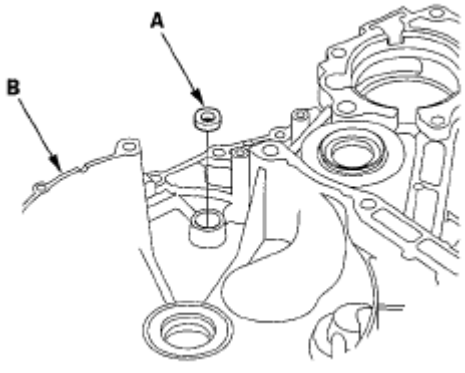


Fig. 450: Identifying Oil Seal And Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new oil seal (A) in the torque converter housing to a depth (B) of 0.5-1.5 mm (0.02-0.06 in.) below the housing surface with the driver and oil seal driver attachment.

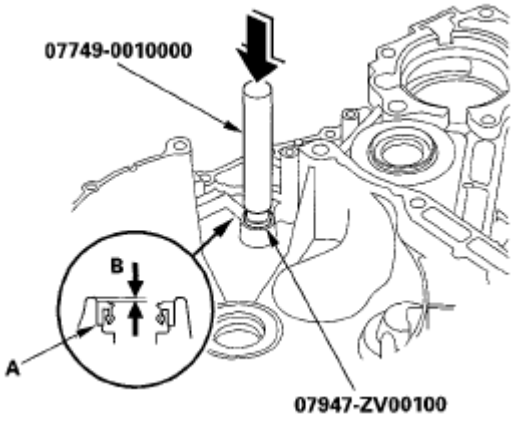


Fig. 451: Identifying Oil Seal In Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Inspect the thrust needle bearing and the needle bearing for galling and rough movement.

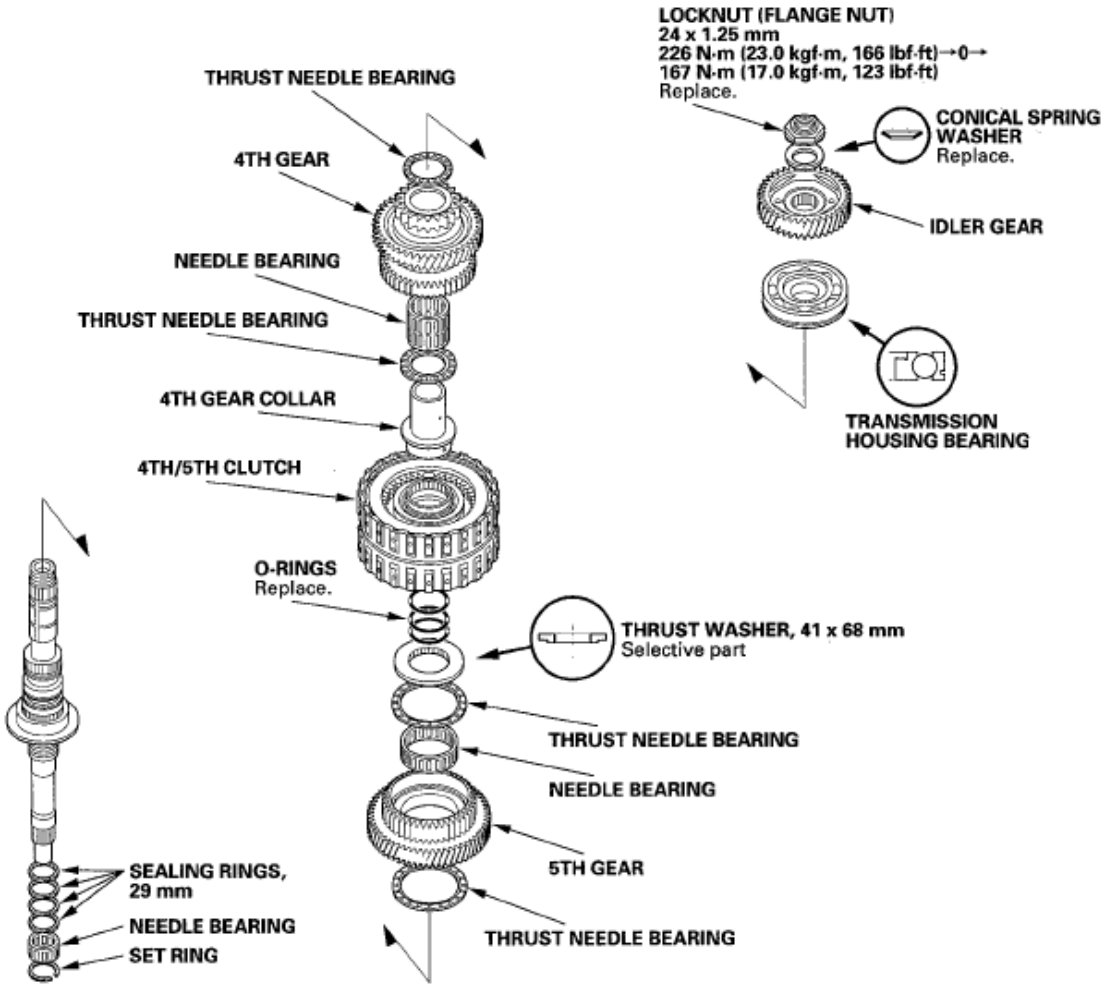


Fig. 452: Disassembled View Of Mainshaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the splines for excessive wear and damage.
3. Check shaft bearing surface for scoring and excessive wear.
4. Before installing the O-rings, wrap the shaft splines with tape to prevent O-ring damage.
5. Lubricate all parts with ATF during assembly.
6. Install the conical spring washer, 41 x 68 mm thrust washer in the direction shown.
7. Replace the locknut and conical spring washer with new ones when assembling the transmission.
8. Check the clearance of 5th gear (see **MAINSHAFT 5TH GEAR AXIAL CLEARANCE INSPECTION**).

MAINSHAFT 5TH GEAR AXIAL CLEARANCE INSPECTION

1. Remove the mainshaft transmission housing bearing (see **BEARING REMOVAL**).
2. Install the thrust needle bearing (A), 5th gear (B), needle bearing (C), thrust needle bearing (D), 41 x 68 mm thrust washer (E), 4th/5th clutch (F), 4th gear collar (G), and transmission housing bearing (H) on the

mainshaft (I). Do not install the O-rings during inspection.

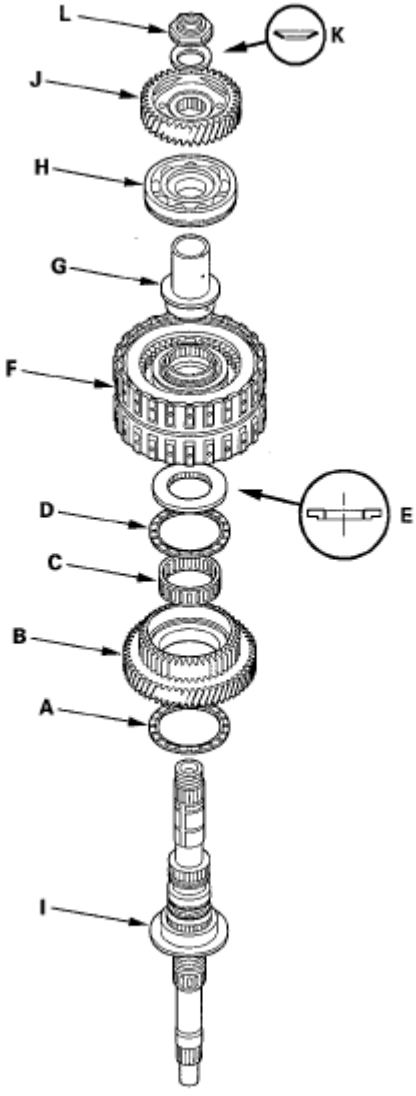


Fig. 453: Disassembled View Of Mainshaft 5th Gear Axial
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the idler gear (J) on the mainshaft by a press, then install the conical spring washer (K) and locknut (L).
4. Tighten the locknut to 29 N.m (3.0 kgf.m, 22 lbf.ft).
5. Set the dial indicator (A) on the 5th gear (B).

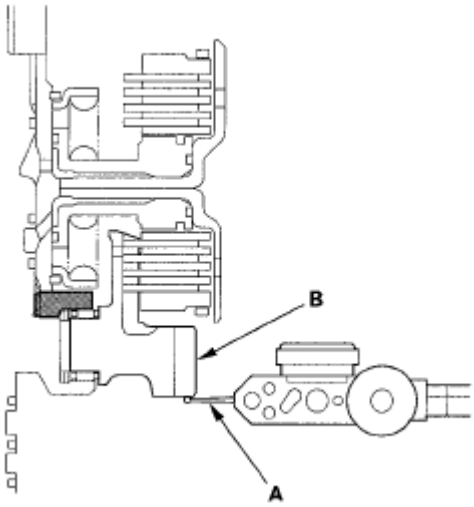


Fig. 454: Setting Dial Indicator On 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Lift the 5th gear (A) up while holding the mainshaft, and use the dial indicator (B) to read the 5th gear axial clearance.

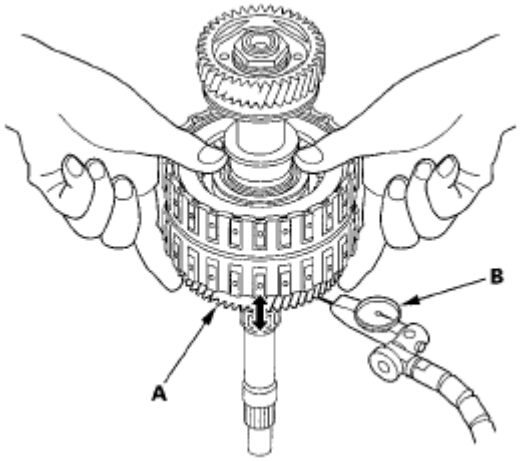


Fig. 455: Measuring 5th Gear Axial Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the 5th gear axial clearance in at least three places while moving the 5th gear. Use the average as the actual clearance.

   Standard: 0.04-0.10 mm (0.002-0.004 in.)

8. If the clearance is out of standard, remove the 41 x 68 mm thrust washer and measure its thickness (A).

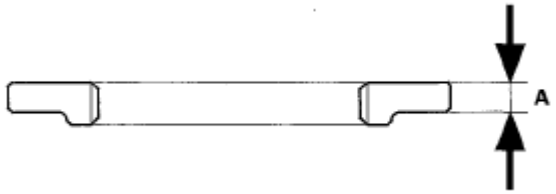


Fig. 456: Measuring Thrust Washer Thickness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Select and install a new thrust washer, then recheck.

THRUST WASHER, 41 x 68 mm

THRUST WASHER THICKNESS SPECIFICATIONS

No.	Part Number	Thickness
1	90414-RCT-000	4.450 mm (0.1752 in.)
2	90415-RCT-000	4.475 mm (0.1762 in.)
3	90416-RCT-000	4.500 mm (0.1772 in.)
4	90417-RCT-000	4.525 mm (0.1781 in.)
5	90418-RCT-000	4.550 mm (0.1791 in.)
6	90419-RCT-000	4.575 mm (0.1801 in.)
7	90420-RCT-000	4.600 mm (0.1811 in.)
8	90421-RCT-000	4.625 mm (0.1821 in.)
9	90422-RCT-000	4.650 mm (0.1831 in.)
10	90423-RCT-000	4.675 mm (0.1841 in.)
11	90424-RCT-000	4.700 mm (0.1850 in.)
12	90425-RCT-000	4.725 mm (0.1860 in.)
13	90426-RCT-000	4.750 mm (0.1870 in.)
14	90427-RCT-000	4.775 mm (0.1880 in.)
15	90428-RCT-000	4.800 mm (0.1890 in.)

10. After replacing the thrust washer, make sure the clearance is within the standard.
11. Disassemble the installed parts from the mainshaft.
12. Reinstall the bearing in the transmission housing (see **BEARING INSTALLATION**).

COUNTERSHAFT DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Inspect the thrust needle bearing and the needle bearing for galling and rough movement.

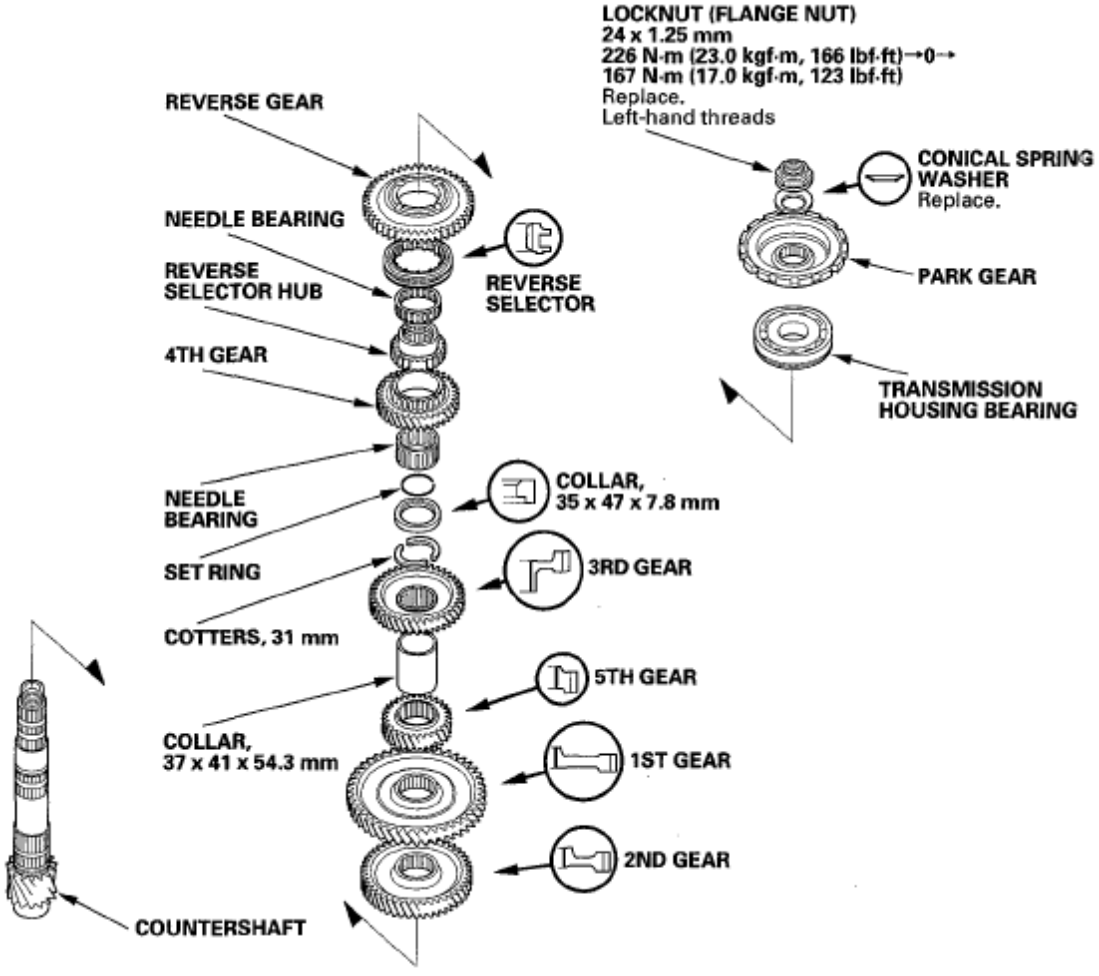


Fig. 457: Disassembled View Of Countershaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the splines for excessive wear and damage.
3. Check shaft bearing surface for scoring and excessive wear.
4. Lubricate all parts with ATF during assembly.
5. Install the conical spring washer, reverse selector, 35 x 47 x 7.8 mm collar, and all gears in the direction shown.
6. Replace the locknut and conical spring washer with new ones when assembling the transmission. The countershaft locknut has left-hand threads.
7. Some reverse selector hubs and 3rd gear are press-fitted to the countershaft; special tools are needed to remove them (see **COUNTERSHAFT REVERSE SELECTOR HUB AND 3RD GEAR REMOVAL**) and to install them (see **COUNTERSHAFT 3RD GEAR AND REVERSE SELECTOR HUB INSTALLATION**).

COUNTERSHAFT REVERSE SELECTOR HUB AND 3RD GEAR REMOVAL

1. Install the bearing separator on 4th gear (A). Set the press on the countershaft (B) with a spacer (C)

between the press and countershaft, and remove the reverse selector hub (D).

NOTE: Some reverse selector hubs are not press-fitted, and can be removed without using the bearing separator and a press.

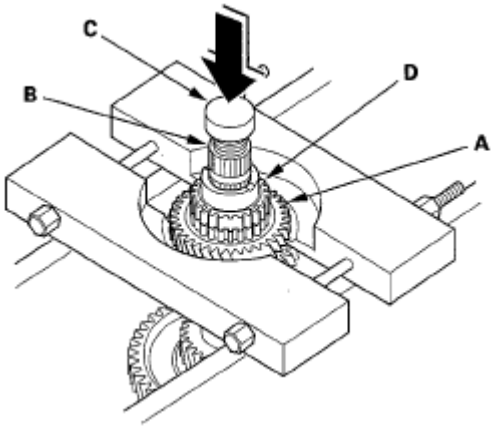


Fig. 458: Pressing Countershaft With Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the needle bearing, set ring, 35 x 47 x 7.8 mm collar, and cotters.
3. Set the press on the countershaft (A) with a spacer (B) between the press and countershaft, and remove 3rd gear (C).

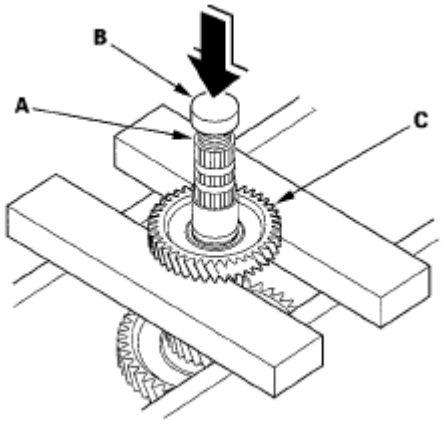


Fig. 459: Pressing Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the 37 x 41 x 54.3 mm collar, 5th gear, 1st gear, and 2nd gear.

COUNTERSHAFT 3RD GEAR AND REVERSE SELECTOR HUB INSTALLATION

Special Tools Required

Driver, 40 mm I.D. 07746-0030100

1. Install 2nd gear, 1st gear, 5th gear, and 37 x 41 x 54.3 mm collar on the countershaft.
2. Slide 3rd gear (A) over the countershaft, and press it in place with the driver and a press.

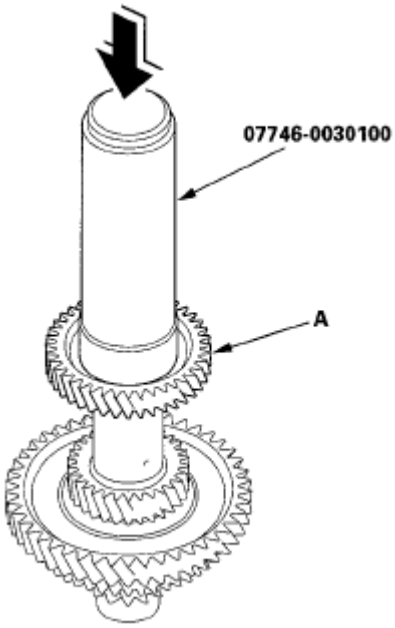


Fig. 460: Pressing 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the cotters, 35 x 47 x 7.8 mm collar, set ring, needle bearing, and 4th gear.
4. Slide the reverse selector hub (A) over the countershaft, then press it in place with the driver and a press.

NOTE: Some reverse selector hubs are not press-fitted, and can be installed without using the driver and a press.

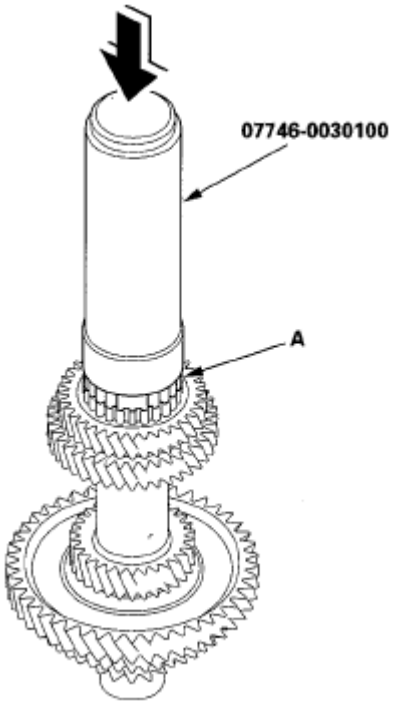


Fig. 461: Pressing Reverse Selector Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Inspect the thrust needle bearing and the needle bearing for galling and rough movement.

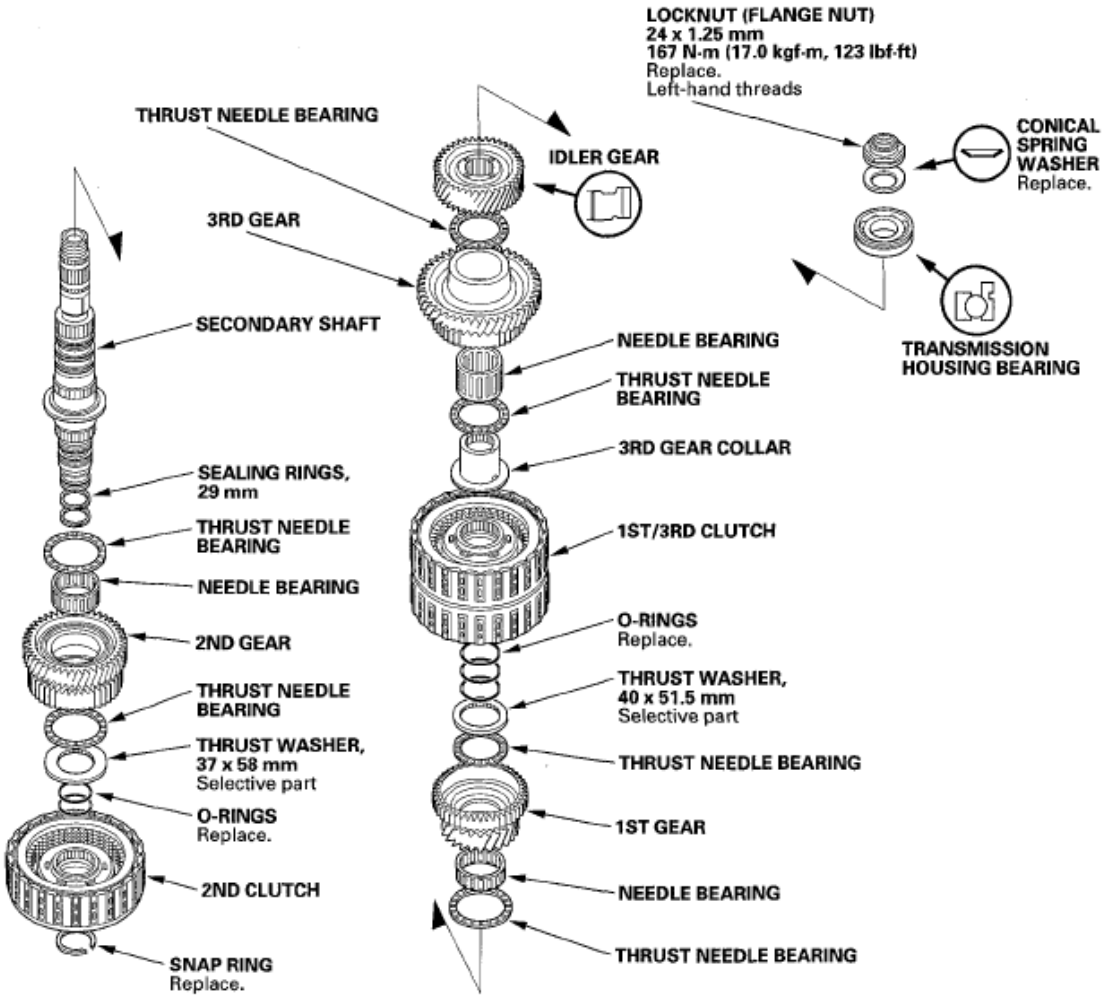


Fig. 462: Disassembled View Of Secondary Shaft With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the splines for excessive wear and damage.
3. Check shaft bearing surface for scoring and excessive wear.
4. Before installing the O-rings, wrap the shaft splines with tape to prevent O-ring damage.
5. Lubricate all parts with ATF during assembly.
6. Install the conical spring washer, idler gear in the direction shown.
7. Replace the locknut and conical spring washer with new ones when assembling the transmission. The locknut has left-hand threads.
8. Check the clearance of 2nd gear (see **SECONDARY SHAFT 2ND GEAR AXIAL CLEARANCE INSPECTION**) and 1st gear (see **SECONDARY SHAFT 1ST GEAR AXIAL CLEARANCE INSPECTION**).

SECONDARY SHAFT BALL BEARING, IDLER GEAR REMOVAL AND INSTALLATION

Special Tools Required

Attachment, 42 mm I.D. 07QAD-P0A0100

REMOVAL

Place a shaft protector (A) on the secondary shaft (B), and set the puller (C) under the idler gear (D), then remove the idler gear and ball bearing (E).

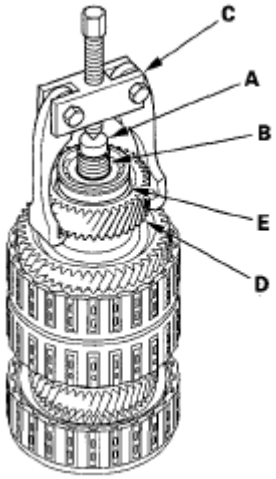


Fig. 463: Identifying Idler Gear And Ball Bearing With Puller
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

Install the idler gear (A) on the secondary shaft (B), and install the ball bearing (C) over the idler gear with the 42 mm attachment and a press.

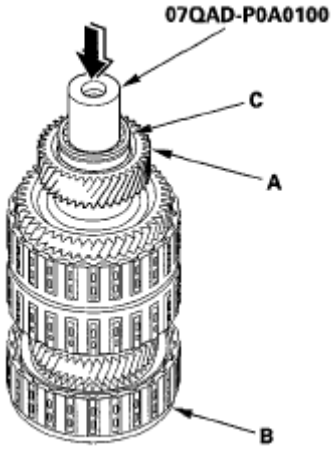


Fig. 464: Identifying Idler Gear On Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT 2ND GEAR AXIAL CLEARANCE INSPECTION

1. Install the thrust needle bearing (A), needle bearing (B), 2nd gear (C), thrust needle bearing (D), 37 x 58 mm thrust washer (E), and 2nd clutch (F) on the secondary shaft (G), then secure them with the snap ring (H). Do not install the O-rings during inspection.

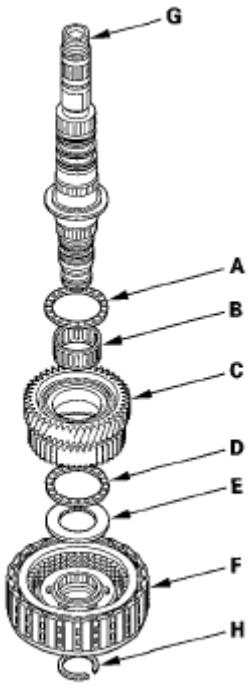
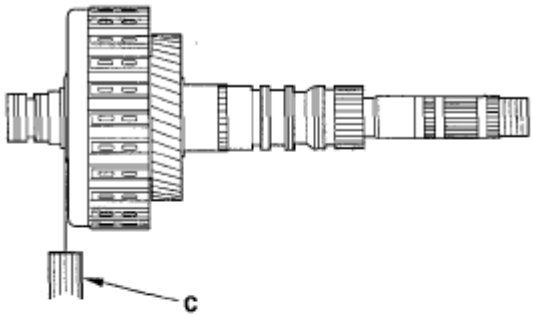


Fig. 465: Identifying Thrust Needle Bearing, Needle Bearing, 2nd Gear And Thrust Needle Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the clearance between the snap ring (A) and the 2nd clutch guide (B) with a feeler gauge (C), in at least three places. Use the average as the actual clearance.

   Standard: 0.04-0.12 mm (0.002-0.005 in.)



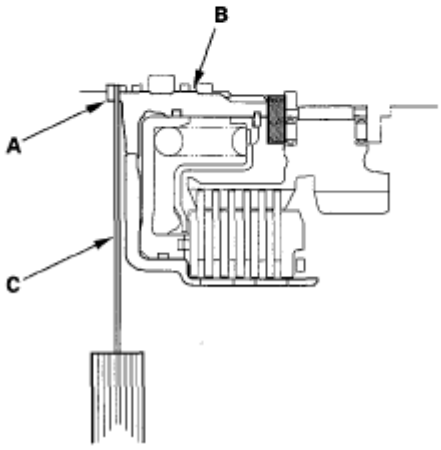


Fig. 466: Measuring Clearance Between Snap Ring And 2nd Clutch Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the clearance is out of standard, remove the 37 x 58 mm thrust washer and measure its thickness.
4. Select and install a new thrust washer, then recheck.

THRUST WASHER, 37 x 58 mm

THRUST WASHER THICKNESS SPECIFICATIONS

No.	Part Number	Thickness
1	90511-PRP-010	3.900 mm (0.154 in.)
2	90512-PRP-010	3.925 mm (0.155 in.)
3	90513-PRP-010	3.950 mm (0.156 in.)
4	90514-PRP-010	3.975 mm (0.156 in.)
5	90515-PRP-010	4.000 mm (0.157 in.)
6	90516-PRP-010	4.025 mm (0.158 in.)
7	90517-PRP-010	4.050 mm (0.159 in.)
8	90518-PRP-010	4.075 mm (0.160 in.)
9	90519-PRP-010	4.100 mm (0.161 in.)
10	90520-PRP-010	4.125 mm (0.162 in.)

11	90521-PRP-010	4.150 mm (0.163 in.)
12	90522-PRP-010	4.175 mm (0.164 in.)
13	90523-PRP-000	4.200 mm (0.165 in.)
14	90524-PRP-000	4.225 mm (0.166 in.)
15	90525-PRP-000	4.250 mm (0.167 in.)
16	90526-PRP-000	4.275 mm (0.168 in.)
17	90527-PRP-000	4.300 mm (0.169 in.)
18	90528-PRP-000	4.325 mm (0.170 in.)
19	90529-PRP-000	4.350 mm (0.171 in.)
20	90530-PRP-000	4.375 mm (0.172 in.)

5. After replacing the thrust washer, make sure the clearance is within standard.
6. Disassemble the shaft and gears.

SECONDARY SHAFT 1ST GEAR AXIAL CLEARANCE INSPECTION

Special Tools Required

Attachment, 42 mm I.D. 07QAD-P0A0100

1. Install the thrust needle bearing (A), needle bearing (B), 1st gear (C), thrust needle bearing (D), 40x51.5 mm thrust washer (E), 1st/3rd clutch (F), and 3rd gear collar (G) on the secondary shaft (H). Do not install the O-rings during inspection.

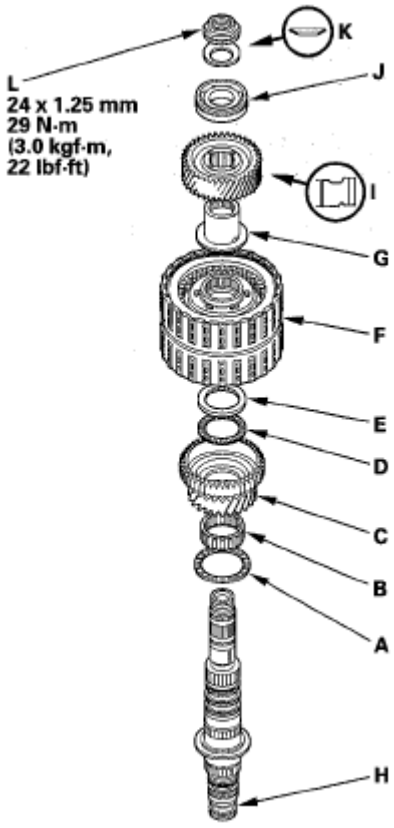


Fig. 467: Identifying Thrust Needle Bearing, Needle Bearing, 1st Gear And Thrust Needle Bearing With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

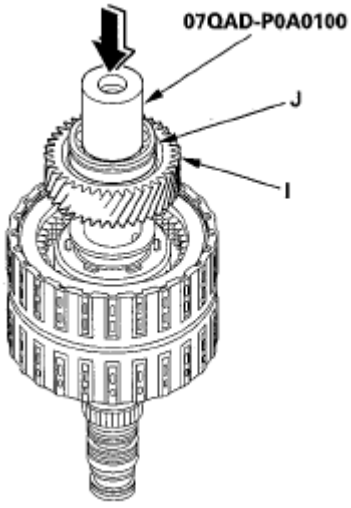


Fig. 468: Identifying Ball Bearing On Idler Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the idler gear (I), then install the ball bearing (J) on the idler gear with the 42 mm attachment and a

press.

3. Install the conical spring washer (K) and locknut (L), then tighten the locknut to 29 N.m (3.0 kgf.m, 22 lbf.ft).
4. Turn the secondary shaft assembly upside down, and set the dial indicator (A) on the 1st gear (B).

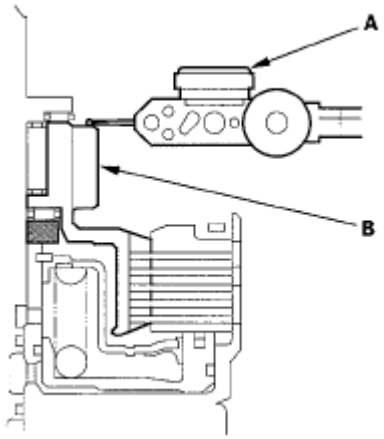


Fig. 469: Setting Dial Indicator On 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Lift 1st gear (A) up while holding the secondary shaft, and use the dial indicator (B) to read the 1st gear axial clearance.

Standard: 0.04-0.12 mm (0.002-0.005 in.)

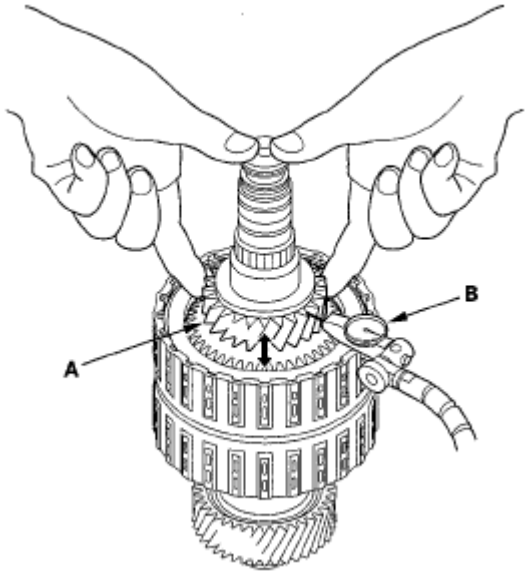


Fig. 470: Measuring 1st Gear Axial Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the 1st gear axial clearance in at least three places while moving 1st gear. Use the average as the actual clearance.
7. If the clearance is out of standard, remove the 40 x 51.5 mm thrust washer and measure its thickness.
8. Select and install a new thrust washer, then recheck.

THRUST WASHER, 40 x 51.5 mm

THRUST WASHER THICKNESS SPECIFICATIONS

No.	Part Number	Thickness
1	90503-RCT-000	4.80 mm (0.189 in.)
2	90504-RCT-000	4.85 mm (0.191 in.)
3	90505-RCT-000	4.90 mm (0.193 in.)
4	90506-RCT-000	4.95 mm (0.195 in.)
5	90507-RCT-000	5.00 mm (0.197 in.)
6	90508-RCT-000	5.05 mm (0.199 in.)

9. After replacing the thrust washer, make sure the clearance is within standard.
10. Disassemble the shaft and gears.

IDLER GEAR SHAFT REMOVAL AND INSTALLATION

1. Remove the snap ring (A), cotter retainer (B), and cotters (C). Do not distort the snap ring.

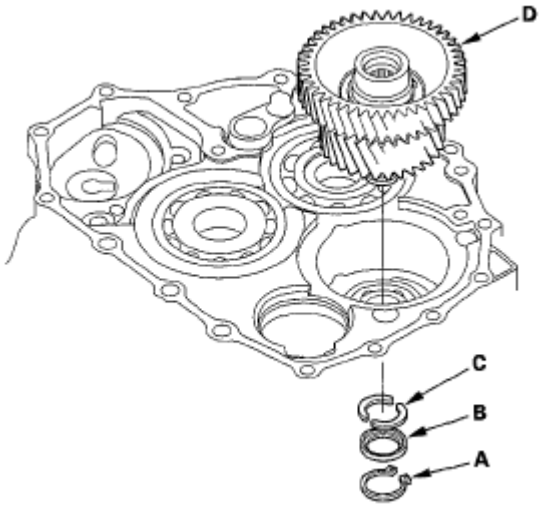


Fig. 471: Identifying Snap Ring, Cotter Retainer And Cotters
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the idler gear shaft/idler gear assembly (D) from the transmission housing.
3. Check the snap ring and cotter retainer for wear and damage. Replace them if they are worn, distorted, or damaged.

4. Install the idler gear and shaft in the reverse order of removal.

IDLER GEAR/IDLER GEAR SHAFT REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 32 x 35 mm 07746-0010100

1. Remove the snap ring from the idler gear/idler shaft assembly.

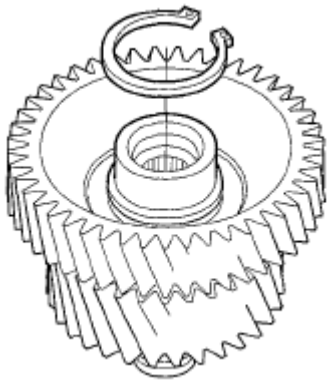


Fig. 472: Identifying Snap Ring And Idler Gear/Idler Shaft Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the idler gear shaft (A) from the idler gear (B) with the driver, 32 x 35 mm attachment, and a press.

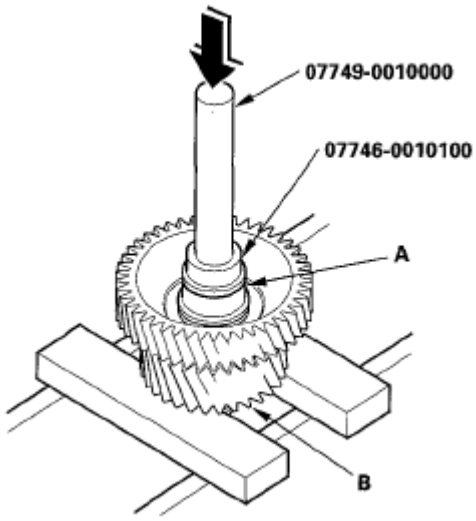


Fig. 473: Identifying Idler Gear Shaft And Idler Gear With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Replace the idler gear or idler gear shaft, and attach the idler gear shaft to the idler gear.

Fig. 474: Identifying Idler Gear Shaft And Idler Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the idler gear shaft (A) in the idler gear (B) with the driver, 32 x 35 mm attachment, and a press.

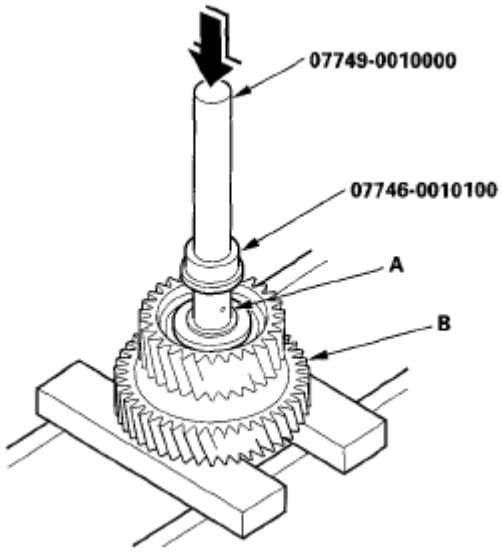


Fig. 475: Identifying Idler Gear Shaft In Idler Gear With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the snap ring.

CLUTCH DISASSEMBLY

Special Tools Required

- Clutch spring compressor attachment 07LAE-PX40100 or 07HAE-PL50101
- Clutch spring compressor bolt assembly 07GAE-PG40200 or 07GAE-PG4020A

1. Remove the snap ring with a screwdriver.

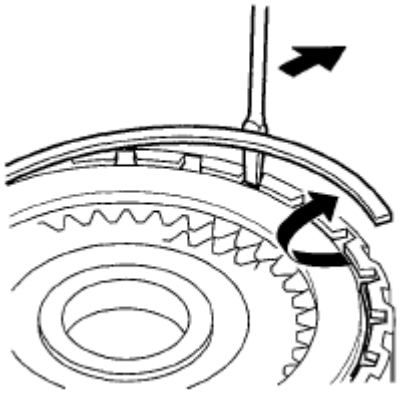


Fig. 476: Removing Snap Ring With Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the clutch end-plate (A), clutch discs (B) (5), clutch wave-plates (C) (4), clutch flat-plate (D) and waved spring (E) from the 1st clutch drum (F).

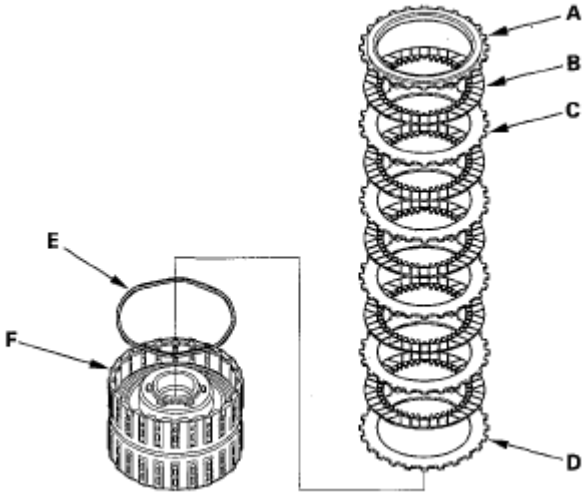


Fig. 477: Disassembled View Of 1st Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make reference mark on the clutch flat-plate.
4. Remove the clutch end-plate (A), clutch discs (B) (6), clutch wave-plates (C) (5), flat-plate (D), and waved spring (E) from the 2nd clutch drum (F).

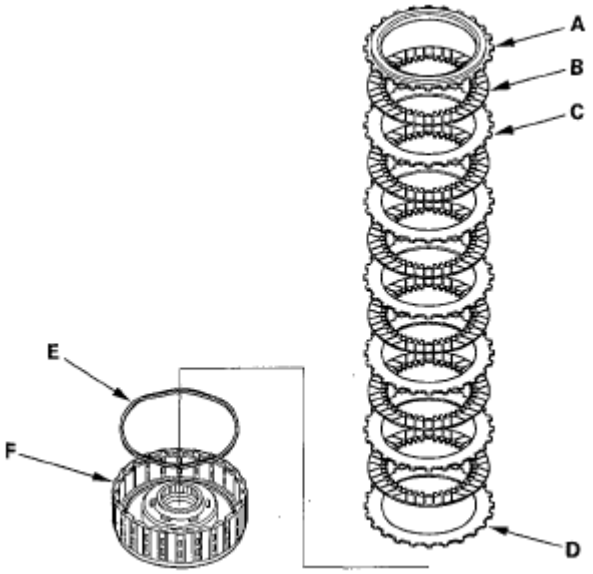


Fig. 478: Disassembled View Of 2nd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make a reference mark on the flat-plate.
6. Remove the clutch end-plate (A), clutch discs (B) (6), clutch wave-plates (C) (5), clutch flat-plate (D), and waved spring (E) from the 3rd clutch drum (F).

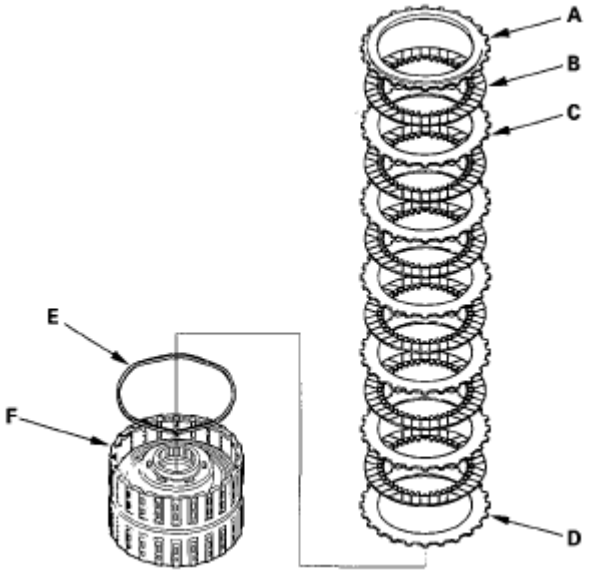


Fig. 479: Disassembled View Of 3rd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Make reference marks on the clutch flat-plate.
8. Remove the clutch end-plate (A), clutch discs (B) (4), clutch wave-plates (C) (4), and waved spring (D) from the 4th clutch drum (E).

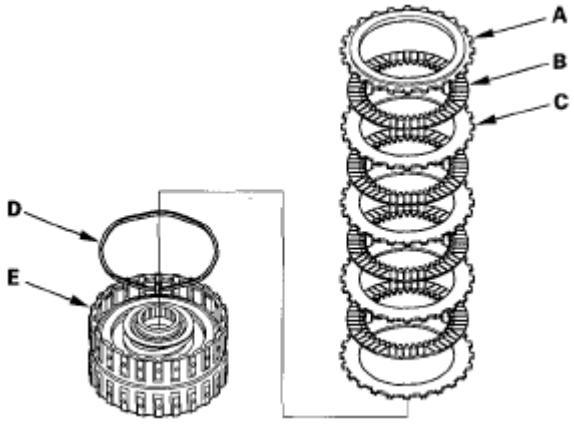


Fig. 480: Disassembled View Of 4th Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the clutch end-plate (A), clutch discs (B) (4), clutch wave-plates (C) (4), and waved spring (D) from the 5th clutch drum (E).

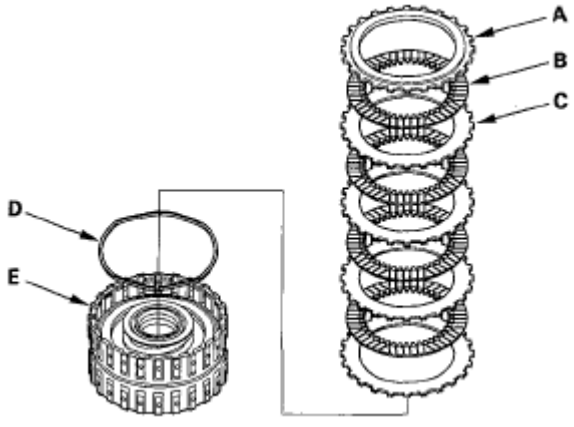


Fig. 481: Disassembled View Of 5th Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the clutch spring compressor attachment and clutch spring compressor bolt assembly.

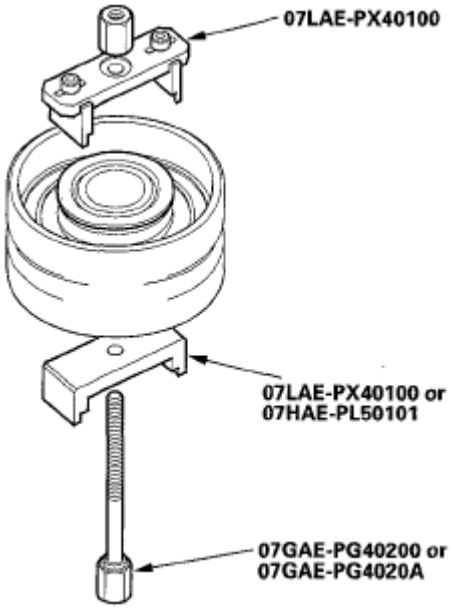


Fig. 482: Identifying Clutch Spring Compressor Attachment And Clutch Spring Compressor Bolt Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Be sure the clutch spring compressor attachment (A) is adjusted to have full contact with the spring retainer (B) on the 4th and 5th clutches.

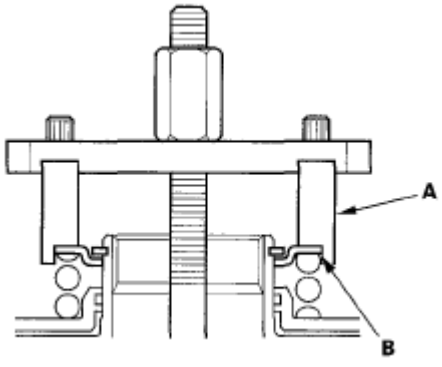


Fig. 483: Contacting With Spring Retainer On 4th And 5th Clutches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Set the clutch spring compressor attachment (A) on the spring retainer (B) of the 1st, 2nd, and 3rd clutches in such a way that the clutch spring compressor attachment works on the clutch return spring (C).

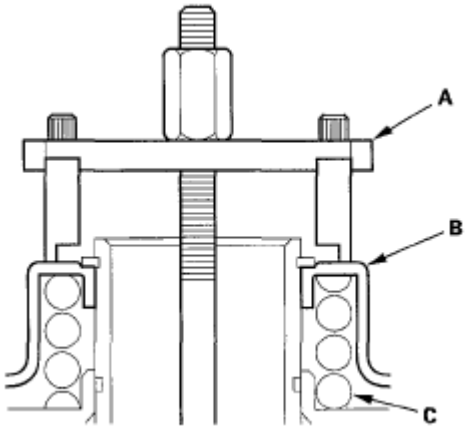


Fig. 484: Setting Clutch Spring Compressor Attachment On Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. If either end of the clutch spring compressor attachment is set over an area of the spring retainer which is unsupported by the return spring, the retainer may be damaged.

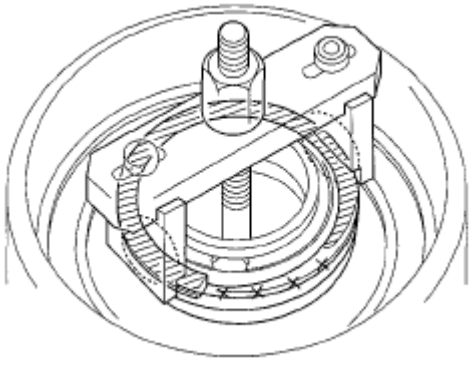


Fig. 485: Identifying Clutch Spring Compressor Attachment Set Area Of Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Compress the return spring until the snap ring can be removed.

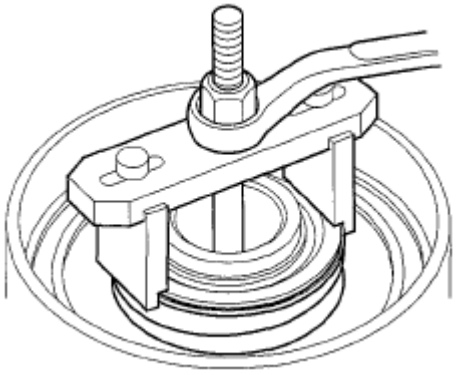


Fig. 486: Compressing Return Spring Until Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the snap ring with snap ring pliers.

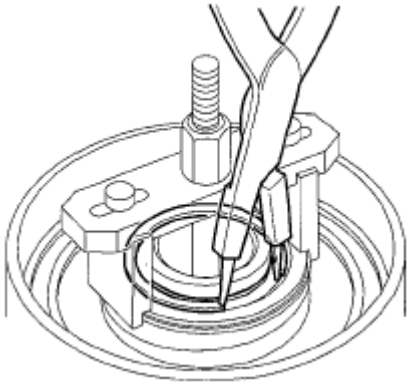


Fig. 487: Identifying Snap Ring With Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the clutch spring compressor attachment and clutch spring compressor bolt assembly.
17. Remove the snap ring (A), spring retainer (B), and return spring (C).

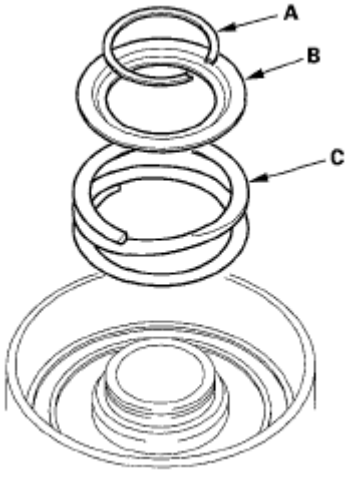


Fig. 488: Identifying Snap Ring, Spring Retainer And Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Wrap a shop rag around the clutch drum (A), and apply air pressure to the fluid passage to remove the piston (B). Place a finger tip on the other passage while applying air pressure.

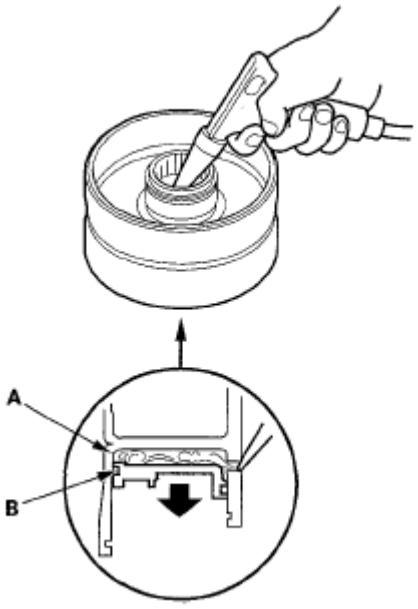


Fig. 489: Applying Air Pressure To Fluid Passage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the piston, then remove the O-rings from the 4th and 5th clutch pistons.

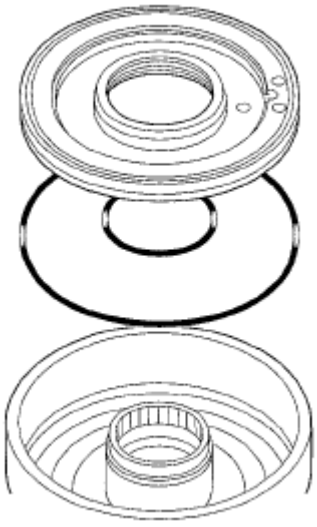


Fig. 490: Identifying O-Rings And 4th And 5th Clutch Pistons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the piston, then remove the O-ring from the 1st, 2nd, and 3rd clutch drum, and remove the O-ring from each clutch piston.

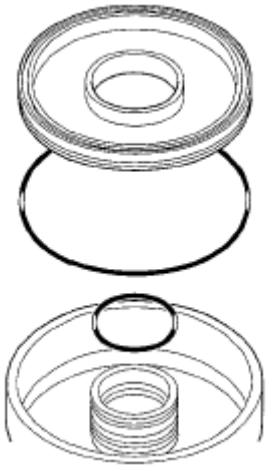


Fig. 491: Identifying O-Ring From 1st, 2nd, And 3rd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH INSPECTION

1. Inspect the 4th and 5th clutch pistons and clutch piston check valves (A).

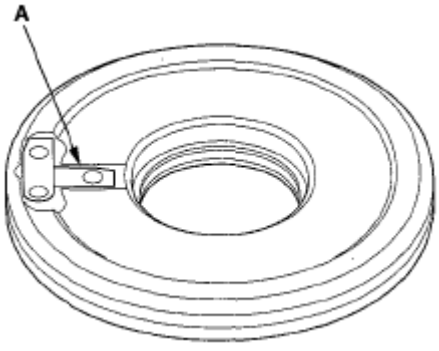


Fig. 492: Identifying Clutch Piston Check Valves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the clutch piston check valve is loose or damaged, replace the clutch piston.
3. Check the spring retainer for wear and damage.
4. Check the oil seal (A) on the spring retainer of the 1st, 2nd, and 3rd clutches for wear, damage, and peeling.

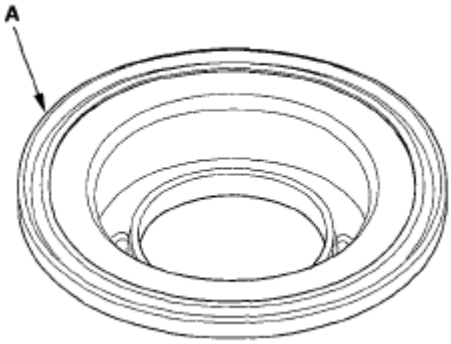


Fig. 493: Identifying Oil Seal On Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the oil seal is worn, damaged, or peeling, replace the spring retainer.
6. Inspect the clutch discs, clutch plates, and clutch end-plate for wear, damage, and discoloration.

   Standard Thickness

   Clutch Discs: 1.94 mm (0.076 in.)

   Clutch Plate:

   1st Clutch: Wave-plate: 1.6 mm (0.063 in.)

   Flat-plate: 1.6 mm (0.063 in.)

   2nd Clutch: Wave-plate: 2.0 mm (0.079 in.)

   Flat-plate: 2.0 mm (0.079 in.)

   3rd Clutch: Wave-plate: 1.6 mm (0.063 in.)

   Flat-plate: 1.6 mm (0.063 in.)

   4th Clutch (Wave-plate): 2.0 mm (0.079 in.)

   5th Clutch (Wave-plate): 2.0 mm (0.079 in.)

7. If the clutch discs are worn or damaged, replace them as a set. If the clutch discs are replaced, inspect the clearance between the clutch end-plate and the top disc.
8. If any plate is worn, damaged, or discolored, replace the damaged plate with the new plate, and inspect the other wave-plates for a phase difference. If the clutch plate is replaced, inspect the clearance between the clutch end-plate and the top disc.
9. If the clutch end-plate is worn, damaged, or discolored, inspect the clearance between the clutch end-plate and the top disc, then replace the clutch end-plate.

CLUTCH WAVE-PLATE PHASE DIFFERENCE INSPECTION

1. Place the clutch wave-plate (A) on a surface plate, and set a dial indicator (B) on the wave-plate.

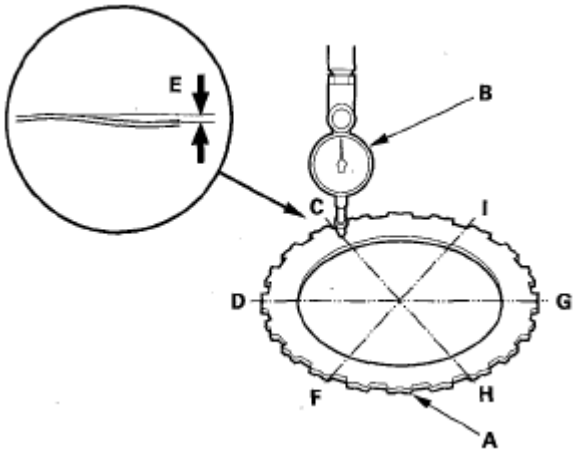


Fig. 494: Setting Dial Indicator On Wave-Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Find the bottom (C) of a phase difference of the wave-plate, zero the dial indicator and make a reference mark on the bottom of the wave-plate.
3. Rotate the wave-plate about 60 degrees apart from the bottom while holding the wave-plate by its circumference. The dial indicator should be at the top (D) of a phase difference. Do not rotate the wave-plate while holding its surface, always rotate it with holding its circumference.
4. Read the dial indicator. The dial indicator reads the phase difference (E) of the wave-plate between bottom and top.

   Standard Phase Difference:

   1st Clutch: 0.15-0.25 mm (0.006-0.010 in.)

   2nd Clutch: 0.10-0.20 mm (0.004-0.008 in.)

   3rd Clutch: 0.10-0.20 mm (0.004-0.008 in.)

   4th Clutch: 0.10-0.20 mm (0.004-0.008 in.)

   5th Clutch: 0.10-0.20 mm (0.004-0.008 in.)

5. Rotate the wave-plate about 60 degrees. The dial indicator should be at the bottom of a phase difference (F and G), and zero the dial indicator.
6. Measure the phase difference at the other two tops (H and I) of the wave-plate by following steps 3 through 5.
7. If the two values of the three measurements are within the standard, the wave-plate is OK. If the two

values of the three measurements are out of the standard, replace the wave-plate.

CLUTCH CLEARANCE INSPECTION

Special Tools Required

Clutch compressor attachment 07ZAE-PRP0100

1. Inspect the clutch piston, discs, plates, and end-plate for wear and damage (see **CLUTCH INSPECTION**), and inspect clutch wave-plate phase difference (see **CLUTCH WAVE-PLATE PHASE DIFFERENCE INSPECTION**), if necessary.
2. Install the clutch piston in the clutch drum. Do not install the O-rings during inspection.

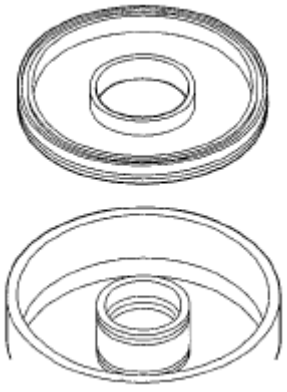


Fig. 495: Identifying Clutch Piston In Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the waved spring (A) in the 1st clutch drum (B). Install the clutch flat-plate (C), then starting with the clutch disc, alternately install the clutch discs (D) (5) and clutch wave-plates (E) (4), then install the clutch end-plate (F) with the flat side toward the disc.

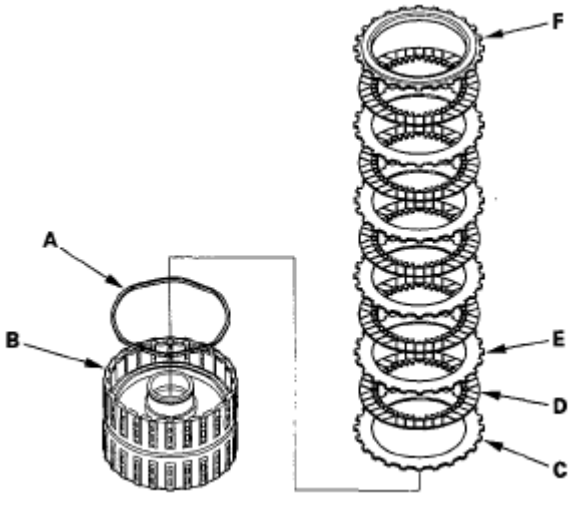


Fig. 496: Disassembled View Of 1st Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the waved spring (A) in the 2nd clutch drum (B). Install the flat-plate (C), then starting with the clutch disc, alternately install the clutch discs (D) (6) and wave-plates (E) (5), then install the clutch end-plate (F) with the flat side toward the disc.

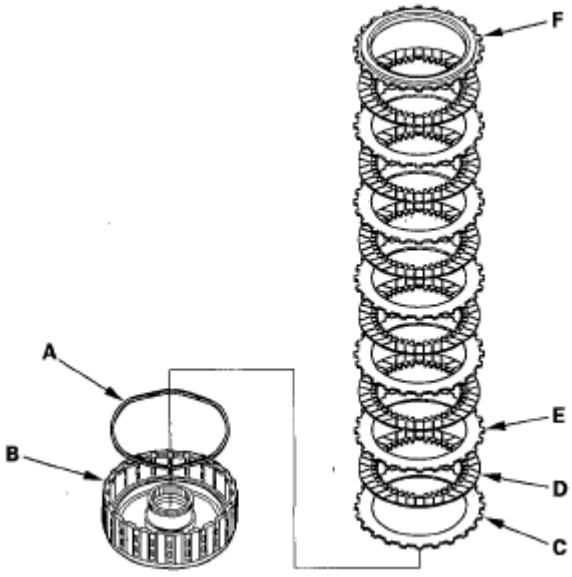


Fig. 497: Disassembled View Of 2nd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the waved spring (A) in the 3rd clutch drum (B). Install the clutch flat-plate (C), then starting with the clutch disc, alternately install the clutch discs (D) (6) and clutch wave-plates (E) (5), then install the clutch end-plate (F) with the flat side toward the disc.

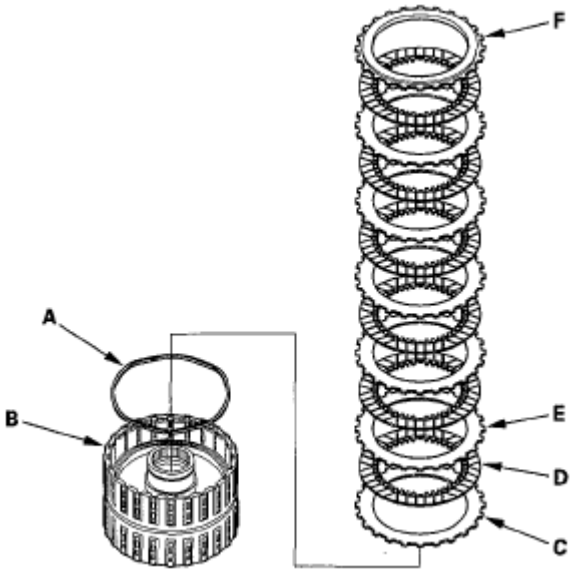


Fig. 498: Disassembled View Of 3rd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the waved spring (A) in the 4th clutch drum (B). Starting with the clutch wave-plate, alternately install the clutch wave-plates (C) (4) and clutch discs (D) (4), then install the clutch end-plate (E) with the flat side toward the disc.

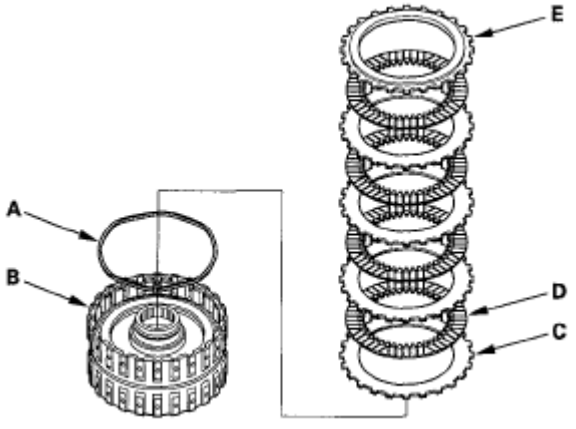


Fig. 499: Disassembled View Of 4th Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the waved spring (A) in the 5th clutch drum (B). Starting with the clutch wave-plate, alternately install the clutch wave-plates (C) (4) and clutch discs (D) (4), then install the clutch end-plate (E) with the flat side toward the disc.

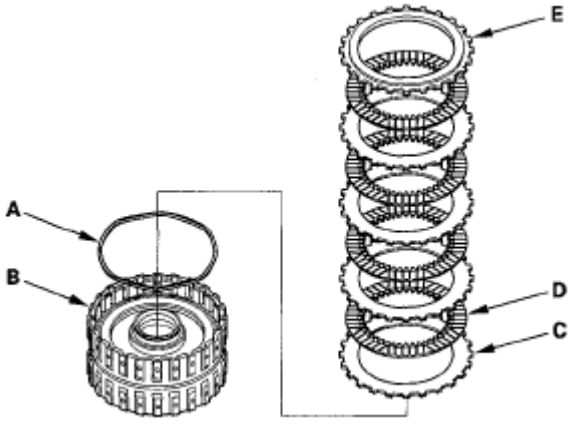


Fig. 500: Disassembled View Of 5th Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the snap ring with a screwdriver.

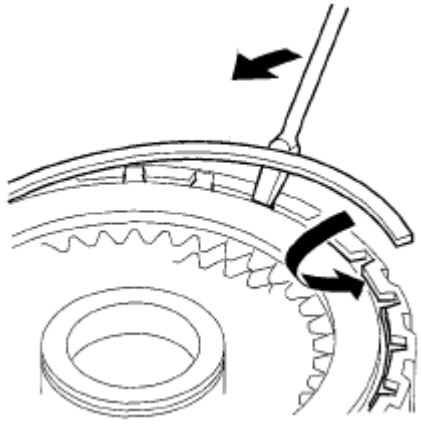


Fig. 501: Installing Snap Ring With Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Set a dial indicator (A) on the clutch end-plate (B).

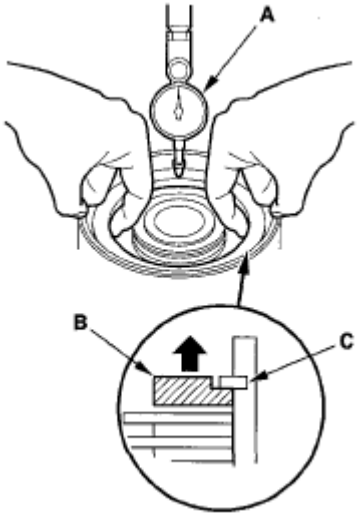


Fig. 502: Setting Dial Indicator On Clutch End-Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Zero the dial indicator with the clutch end-plate lifted up to the snap ring (C).
11. Release the clutch end-plate to lower the clutch end-plate, then put the clutch spring compressor attachment on the end-plate (A).

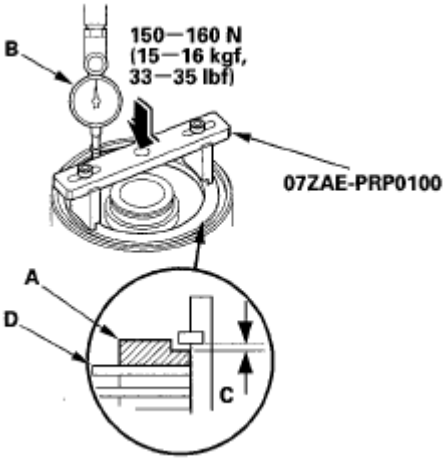


Fig. 503: Pressing Clutch Spring Compressor Attachment Down With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Press the clutch spring compressor attachment down with 150-160 N (15-16 kgf, 33-35 lbf) using a force gauge, and read the dial indicator (B). The dial indicator reads the clearance (C) between the clutch end-plate and the top disc (D). Take measurements in at least three places, and use the average as the actual clearance.

Clearance between the Clutch End-plate and the Top Disc:

Service Limit:

1st Clutch: 1.38-1.58 mm (0.054-0.062 in.)

2nd Clutch: 1.14-1.34 mm (0.045-0.053 in.)

3rd Clutch: 1.23-1.43 mm (0.048-0.056 in.)

4th Clutch: 0.93-1.13 mm (0.037-0.044 in.)

5th Clutch: 0.93-1.13 mm (0.037-0.044 in.)

13. If the clearance is out of the service limit, select a new clutch end-plate from the following table.

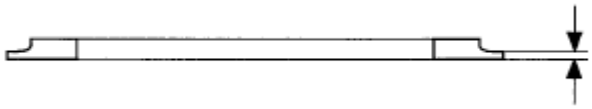


Fig. 504: Identifying Clearance Between Clutch End-Plate And Top Disc
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1ST CLUTCH END-PLATES

1ST CLUTCH END-PLATES THICKNESS SPECIFICATION

Mark	Part Number	Thickness
1	22571-RCL-A01 or 22571-RZH-003 or 22571-RZK-003	2.6 mm (0.102 in.)
2	22572-RCL-A01 or 22572-RZH-003 or 22572-RZK-003	2.7 mm (0.106 in.)
3	22573-RCL-A01 or 22573-RZH-003 or 22573-RZK-003	2.8 mm (0.110 in.)
4	22574-RCL-A01 or 22574-RZH-003 or 22574-RZK-003	2.9 mm (0.114 in.)
5	22575-RCL-A01 or 22575-RZH-003 or 22575-RZK-003	3.0 mm (0.118 in.)
6	22576-RCL-A01 or 22576-RZH-003 or 22576-RZK-003	3.1 mm (0.122 in.)
7	22577-RCL-A01 or 22577-RZH-003 or 22577-RZK-003	3.2 mm (0.126 in.)
8	22578-RCL-A01 or 22578-RZH-003 or 22578-RZK-003	3.3 mm (0.130 in.)
9	22579-RCL-A01 or 22579-RZH-003 or 22579-RZK-003	3.4 mm (0.134 in.)

2ND CLUTCH END-PLATES

2ND CLUTCH END-PLATES THICKNESS SPECIFICATION

Mark	Part Number	Thickness
10	22569-RCL-A01 or 22569-RZH-003 or 22569-RZK-003	2.4 mm (0.094 in.)
11	22570-RCL-A01 or 22570-RZH-003 or 22570-RZK-003	2.5 mm (0.098 in.)
1	22571-RCL-A01 or 22571-RZH-003 or 22571-RZK-003	2.6 mm (0.102 in.)
2	22572-RCL-A01 or 22572-RZH-003 or 22572-RZK-003	2.7 mm (0.106 in.)
3	22573-RCL-A01 or 22573-RZH-003 or 22573-RZK-003	2.8 mm (0.110 in.)
4	22574-RCL-A01 or 22574-RZH-003 or 22574-RZK-003	2.9 mm (0.114 in.)
5	22575-RCL-A01 or 22575-RZH-003 or 22575-RZK-003	3.0 mm (0.118 in.)
6	22576-RCL-A01 or 22576-RZH-003 or 22576-RZK-003	3.1 mm (0.122 in.)
7	22577-RCL-A01 or 22577-RZH-003 or 22577-RZK-003	3.2 mm (0.126 in.)

3RD CLUTCH END-PLATES

3ND CLUTCH END-PLATES THICKNESS SPECIFICATION

Mark	Part Number	Thickness
1	22551-RCL-A01 or 22551-RZH-003 or 22551-RZK-003	2.1 mm (0.083 in.)
2	22552-RCL-A01 or 22552-RZH-003 or 22552-RZK-003	2.2 mm (0.087 in.)
3	22553-RCL-A01 or 22553-RZH-003 or 22553-RZK-003	2.3 mm (0.091 in.)
4	22554-RCL-A01 or 22554-RZH-003 or 22554-RZK-003	2.4 mm (0.094 in.)
5	22555-RCL-A01 or 22555-RZH-003 or 22555-RZK-003	2.5 mm (0.098 in.)
6	22556-RCL-A01 or 22556-RZH-003 or 22556-RZK-003	2.6 mm (0.102 in.)
7	22557-RCL-A01 or 22557-RZH-003 or 22557-RZK-003	2.7 mm (0.106 in.)
8	22558-RCL-A01 or 22558-RZH-003 or 22558-RZK-003	2.8 mm (0.110 in.)
9	22559-RCL-A01 or 22559-RZH-003 or 22559-RZK-003	2.9 mm (0.114 in.)

4TH and 5TH CLUTCH END-PLATES

4TH AND 5TH CLUTCH END-PLATES THICKNESS SPECIFICATION

Mark	Part Number	Thickness
1	22581 -RCL-003 or 22581 -RZH-003 or 22581 -RZK-003	2.1 mm (0.083 in.)
2	22582-RCL-003 or 22582-RZH-003 or 22582-RZK-003	2.2 mm (0.087 in.)
3	22583-RCL-003 or 22583-RZH-003 or 22583-RZK-003	2.3 mm (0.091 in.)
4	22584-RCL-003 or 22584-RZH-003 or 22584-RZK-003	2.4 mm (0.094 in.)
5	22585-RCL-003 or 22585-RZH-003 or 22585-RZK-003	2.5 mm (0.098 in.)
6	22586-RCL-003 or 22586-RZH-003 or 22586-RZK-003	2.6 mm (0.102 in.)
7	22587-RCL-003 or 22587-RZH-003 or 22587-RZK-003	2.7 mm (0.106 in.)
8	22588-RCL-003 or 22588-RZH-003 or 22588-RZK-003	2.8 mm (0.110 in.)
9	22589-RCL-003 or 22589-RZH-003 or 22589-RZK-003	2.9 mm (0.114 in.)

14. Install the new clutch end-plate, then recheck the clearance.

NOTE: If the thickest clutch end-plate is installed, but the clearance is still over the service limit, replace the clutch discs and plates.

CLUTCH REASSEMBLY

Special Tools Required

- Clutch spring compressor attachment 07LAE-PX40100 or 07HAE-PL50101
- Clutch spring compressor bolt assembly 07GAE-PG40200 or 07GAE-PG4020A

1. Soak the clutch discs thoroughly in ATF for a minimum of 30 minutes.
2. Install new O-rings (A) on the 4th and 5th clutch piston (B).

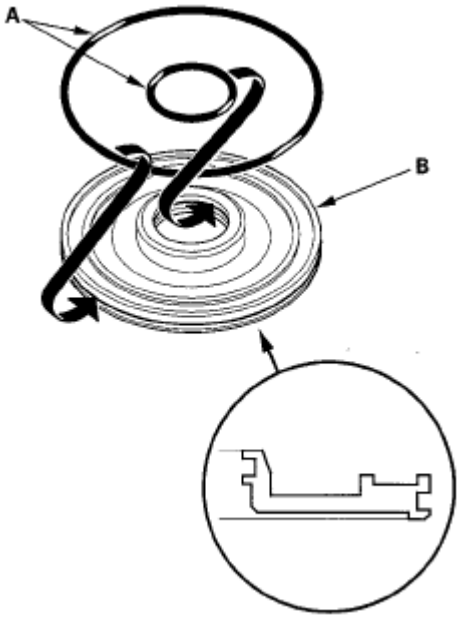


Fig. 505: Installing O-Rings On 4th And 5th Clutch Piston
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new O-ring (A) in the 1st, 2nd, and 3rd clutch pistons (B), and install a new O-ring (C) on the clutch drums (D).

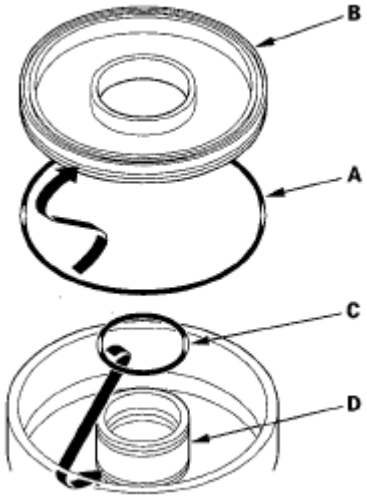


Fig. 506: Installing O-Ring In 1st, 2nd, And 3rd Clutch Pistons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the clutch piston (A) in the clutch drum (B). Apply pressure and rotate to ensure proper seating. Lubricate the piston O-ring with ATF before installing. Do not pinch the O-ring by installing the piston with too much force.

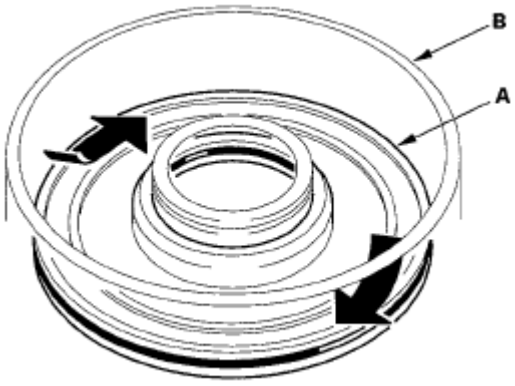


Fig. 507: Identifying Clutch Piston In Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the return spring (A) and spring retainer (B), and position the snap ring (C) on the retainer.

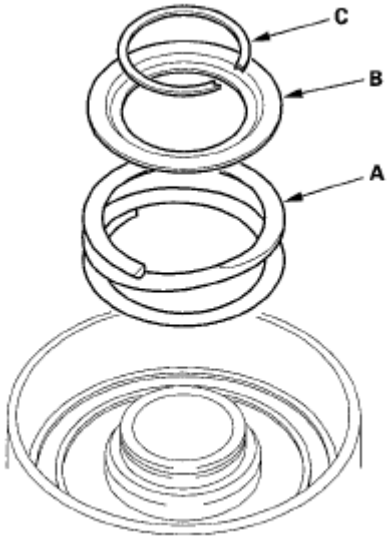


Fig. 508: Identifying Return Spring And Spring Retainer And Position Snap Ring On Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the clutch spring compressor attachment and clutch spring compressor bolt assembly.

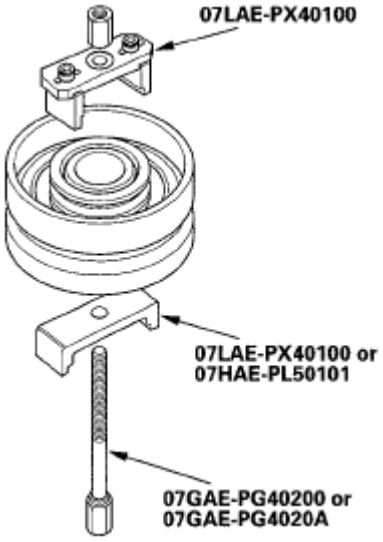


Fig. 509: Identifying Clutch Spring Compressor Attachment And Clutch Spring Compressor Bolt Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Be sure the clutch spring compressor attachment (A) is adjusted to have full contact with the spring retainer (B) on the 4th and 5th clutches.

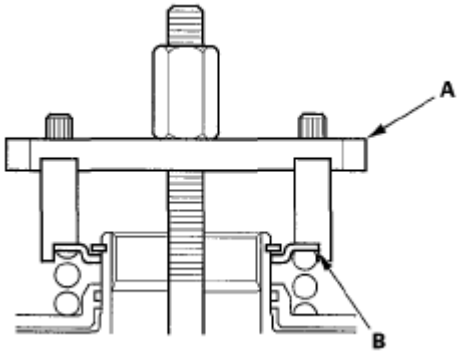


Fig. 510: Identifying Clutch Spring Compressor Attachment And Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Set the clutch spring compressor attachment (A) on the spring retainer (B) of the 1st, 2nd, and 3rd clutches in such a way that it compresses the clutch return spring (C).

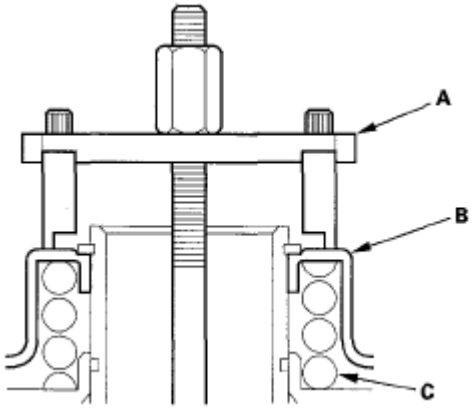


Fig. 511: Identifying Clutch Spring Compressor Attachment, Spring Retainer And Clutch Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If either end of the clutch spring compressor attachment is set over an area of the spring retainer which is unsupported by the return spring, the retainer may be damaged.

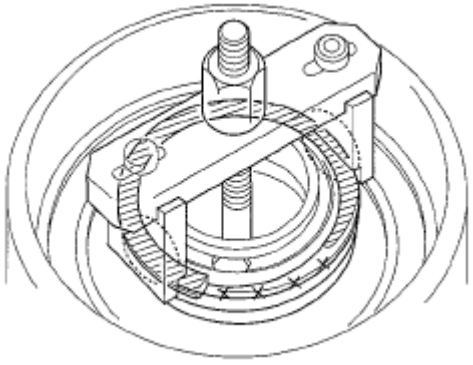


Fig. 512: Identifying Clutch Spring Compressor Attachment On Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Compress the return spring.

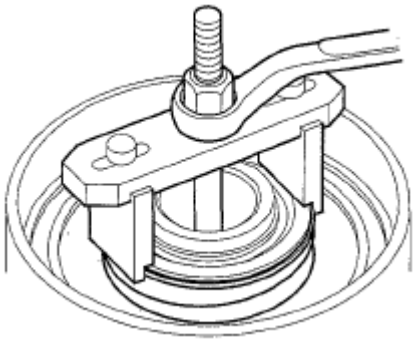


Fig. 513: Compressing Return Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the snap ring with snap ring pliers.

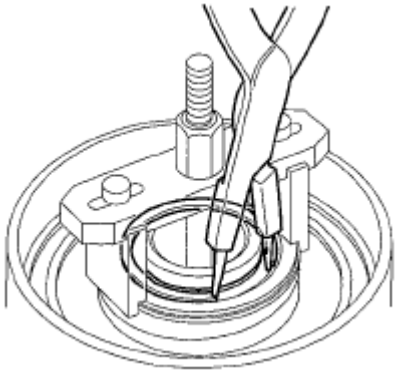


Fig. 514: Installing Snap Ring With Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the clutch spring compressor attachment and clutch spring compressor bolt assembly.
13. Install the waved spring (A) in the 1st clutch drum (B). Install the clutch flat-plate (C), then starting with the clutch disc, alternately install the clutch discs (D) (5) and clutch wave-plates (E) (4), then install the clutch end-plate (F) with the flat side toward the disc.

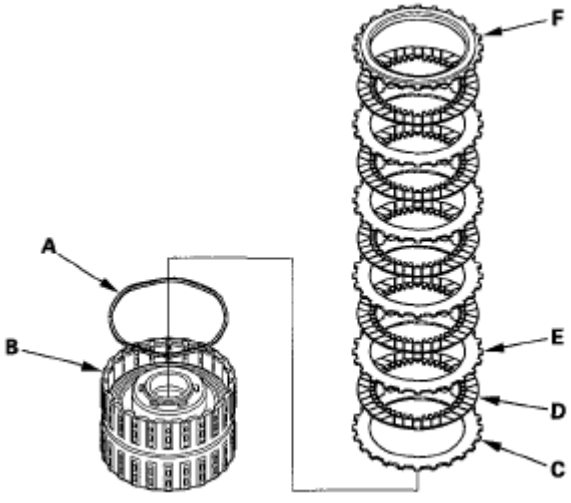


Fig. 515: Disassembled View Of 1st Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the waved spring (A) in the 2nd clutch drum (B). Install the flat-plate (C), then starting with the clutch disc, alternately install the clutch discs (D) (6) and wave-plates (E) (5), then install the clutch end-plate (F) with the flat side toward the disc.

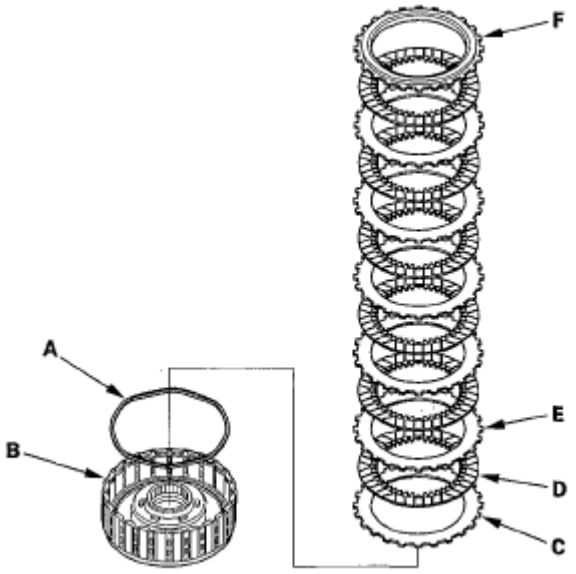


Fig. 516: Disassembled View Of 2nd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the waved spring (A) in the 3rd clutch drum (B). Install the clutch flat-plate (C), then starting with the clutch disc, alternately install the clutch discs (D) (6) and clutch wave-plates (E) (5), then install the clutch end-plate (F) with the flat side toward the disc.

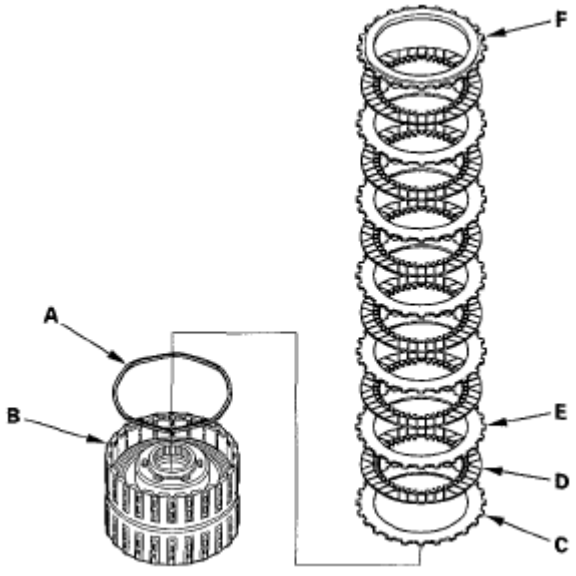


Fig. 517: Disassembled View Of 3rd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the waved spring (A) in the 4th clutch drum (B). Starting with the clutch wave-plate, alternately install the clutch wave-plates (C) (4) and clutch discs (D) (4), then install the clutch end-plate (E) with the flat side toward the disc.

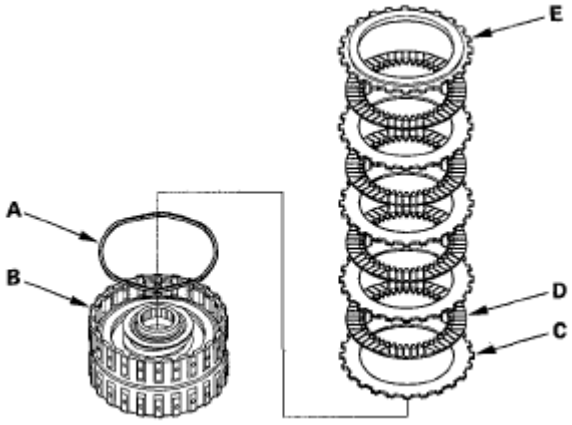


Fig. 518: Disassembled View Of 4th Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the waved spring (A) in the 5th clutch drum (B). Starting with the clutch wave-plate, alternately install the clutch wave-plates (C) (4) and clutch discs (D) (4), then install the clutch end-plate (E) with the flat side toward the disc.

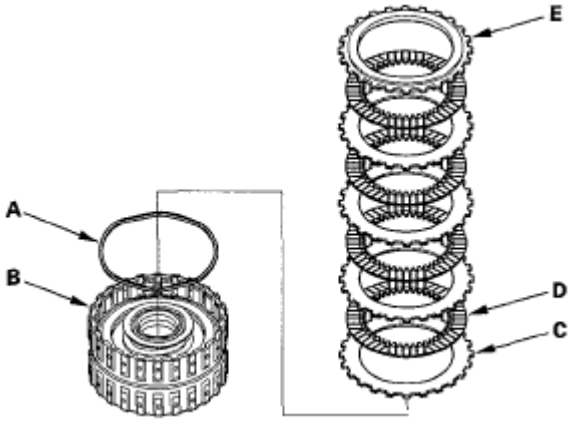


Fig. 519: Disassembled View Of 5th Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the snap ring with a screwdriver.

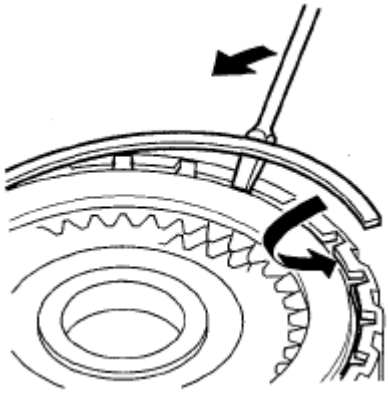


Fig. 520: Installing Snap Ring With Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check that the clutch piston moves by applying air pressure into fluid passage.

VALVE BODY AND ATF STRAINER INSTALLATION

NOTE: The illustration shows the 4WD transmission; the 2WD transmission is similar.

1. Make sure that the ATF magnet is cleaned and installed in the torque converter housing.

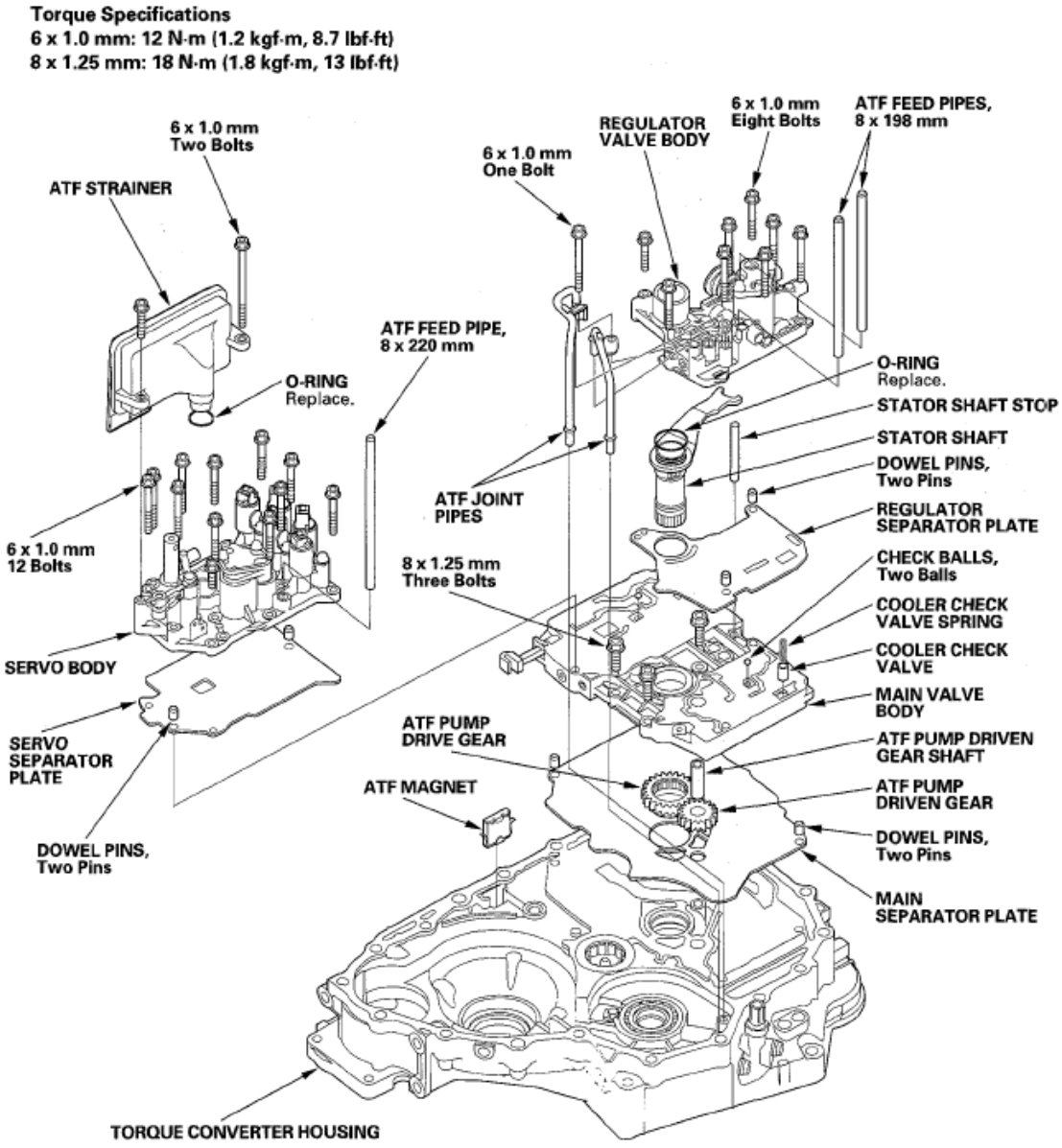


Fig. 521: Disassembled View Of Valve Body And ATF Strainer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the main separator plate (A) and two dowel pins on the torque converter housing. Then install the ATF pump drive gear (B), driven gear (C), and ATF pump driven gear shaft (D). Install the ATF pump driven gear with its grooved and chamfered side facing down.

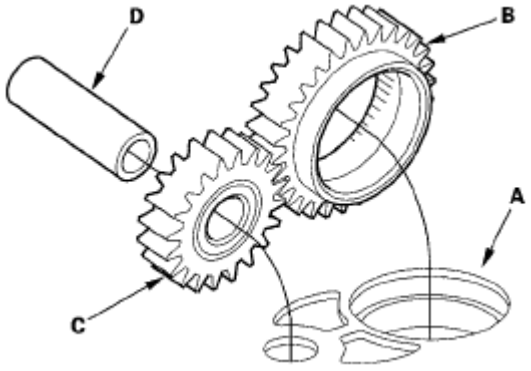


Fig. 522: Identifying ATF Pump Drive Gear, Driven Gear And ATF Pump Driven Gear Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the main valve body.
4. Make sure the ATF pump drive gear (A) rotates smoothly in the normal operating direction, and the ATF pump driven gear shaft (B) moves smoothly in the axial and normal operating direction.

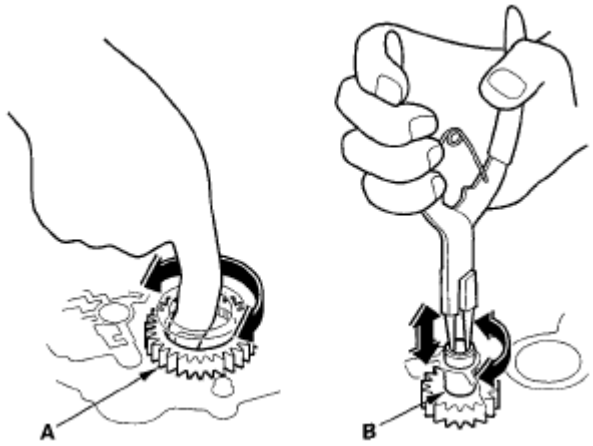


Fig. 523: Rotating ATF Pump Drive Gear Smoothly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the ATF pump drive gear and ATF pump driven gear shaft do not move smoothly, loosen the main valve body bolts. Realign the ATF pump driven gear shaft, and retighten the bolts to the specified torque, then recheck. Failure to align the ATF pump driven gear shaft correctly will result in a seized ATF pump drive gear or ATF pump driven gear shaft.
6. Make sure that the two check balls and the cooler check valve are in the main valve body, then install the cooler check valve spring in the cooler check valve.
7. Install the servo separator plate and two dowel pins on the main valve body.
8. Install the servo body (12 bolts). Install the ATF strainer with the two bolts in the bolt holes (A) in step 12, and install the baffle plate with the two bolts in the bolt holes (B) (see step 2).

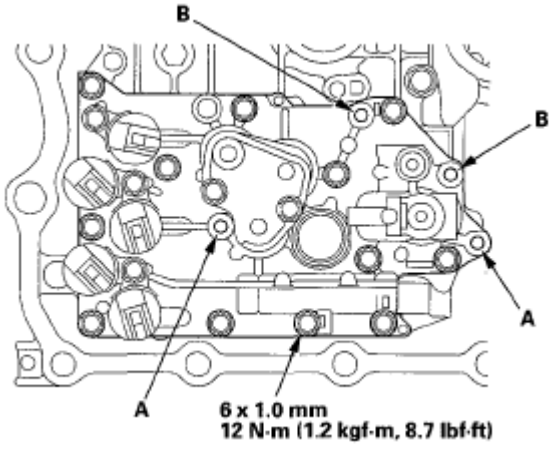


Fig. 524: Identifying Baffle Plate With Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the regulator separator plate and two dowel pins on the main valve body.
10. Install a new O-ring on the stator shaft, and install the stator shaft and stator shaft stop.
11. Install the regulator valve body (eight bolts).
12. Install a new O-ring on the ATF strainer, and install the ATF strainer (two bolts).
13. Install the ATF joint pipes (one bolt).
14. Install the ATF feed pipes in the regulator valve body and servo body.

SHAFT ASSEMBLY AND HOUSING INSTALLATION

NOTE: The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer assembly.

1. Install the differential assembly in the torque converter housing.

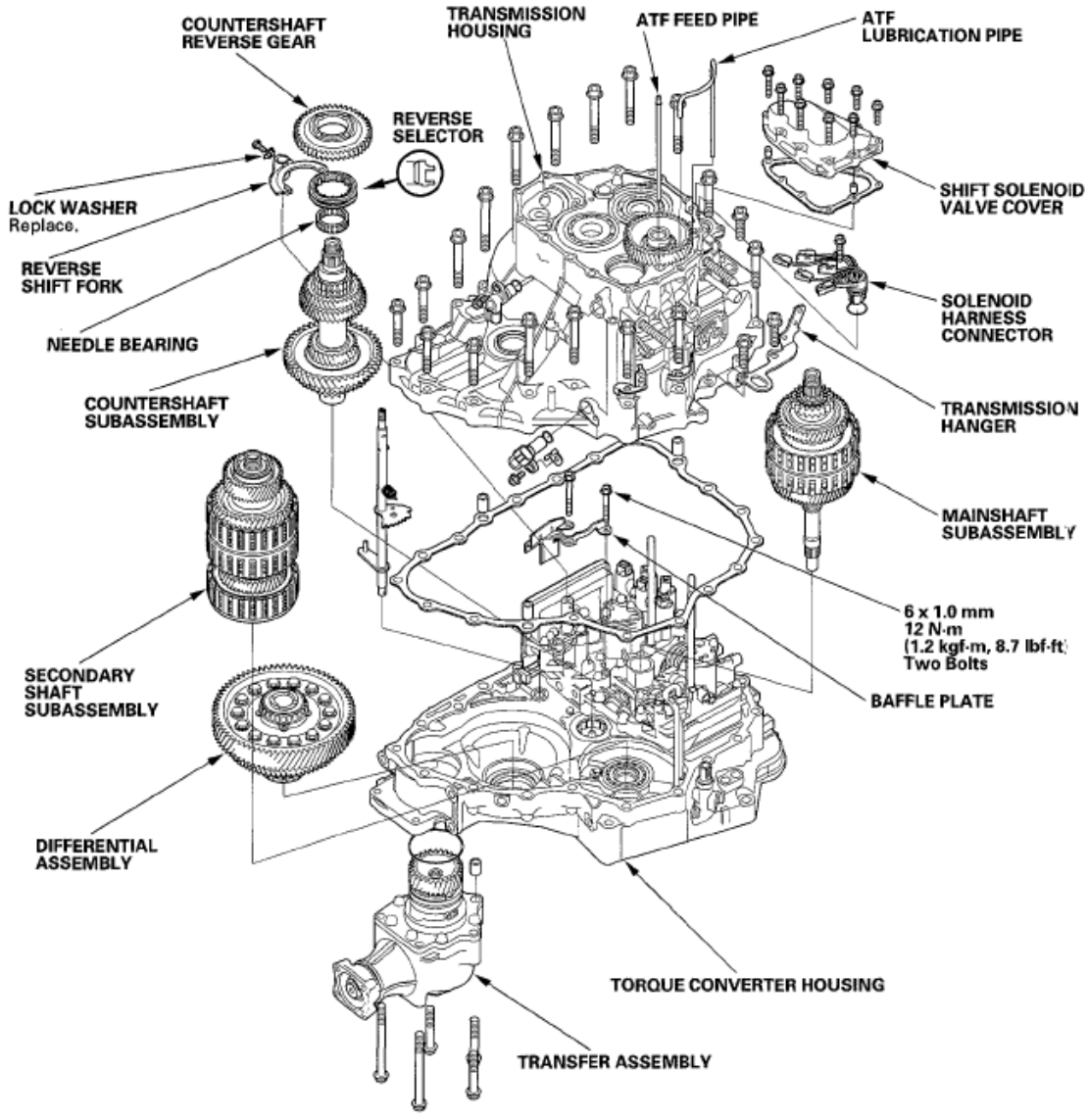


Fig. 525: Disassembled View Of Transmission Housing With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the baffle plate on the servo body.
3. Assemble the mainshaft, countershaft, and secondary shaft.
4. Join the mainshaft subassembly (A), countershaft subassembly (B), and secondary shaft subassembly (C) together, and install them in the torque converter housing. Do not bump the countershaft on the baffle plate (D).

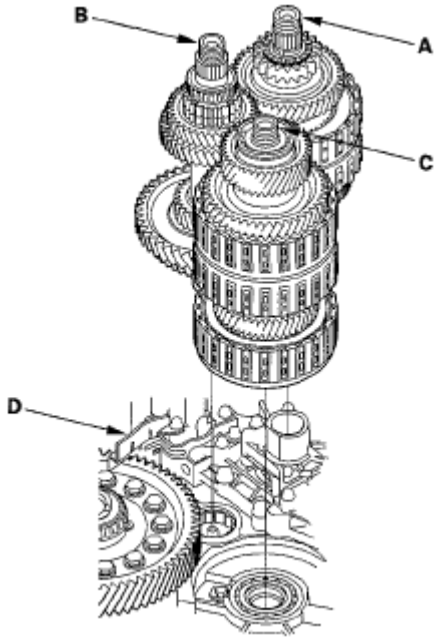


Fig. 526: Identifying Mainshaft Subassembly, Countershaft Subassembly And Secondary Shaft Subassembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make sure the countershaft and differential are clear of the baffle plate (D).
6. If the detent arm was removed, install the detent arm (A) with arm collar (B) on the servo body (C), and install the new lock washer (D) by aligning its cutout (E) with the projection (F) of the servo body. Install and tighten the bolt, then bend the lock tab of the lock washer against the bolt head.

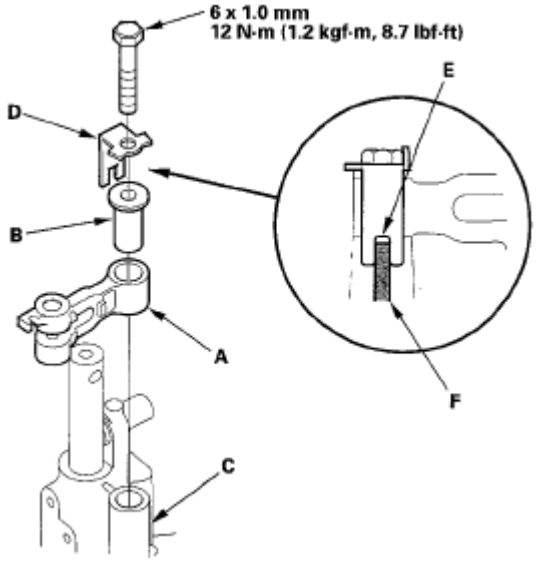


Fig. 527: Identifying Detent Arm With Arm Collar On Servo Body With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the control shaft (A) in the torque converter housing aligning the manual valve lever pin (B) on the control shaft with the guide of the manual valve (C). Pull the manual valve gently when aligning the manual valve with the control shaft.

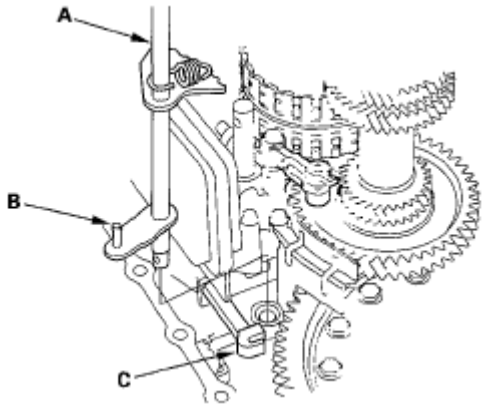


Fig. 528: Identifying Control Shaft In Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Hook the detent spring (A) to the detent arm (B).

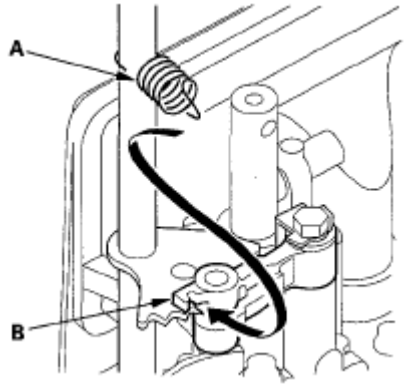


Fig. 529: Hooking Detent Spring To Detent Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Turn the shift fork shaft (A) so the large chamfered hole (B) is facing the fork bolt hole (C) of the shift fork (D).

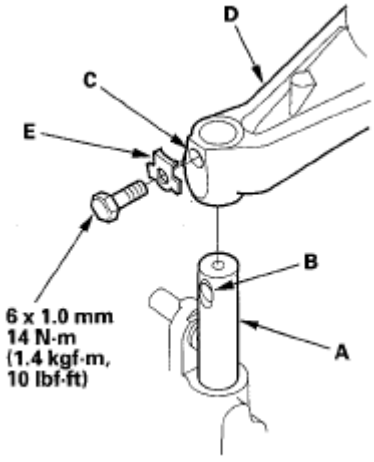


Fig. 530: Identifying Shift Fork Shaft, Large Chamfered Hole And Lock Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the shift fork and reverse selector together on the shift fork shaft and countershaft. Secure the shift fork to the shift fork shaft with the lock bolt and a new lock washer (E), then bend the lock tab of the lock washer against the bolt head.
11. Install the needle bearing and countershaft reverse gear on the countershaft.
12. Install the reverse idler gear in the transmission housing (see **REVERSE IDLER GEAR REMOVAL AND INSTALLATION**).
13. Install the idler gear shaft (see **IDLER GEAR SHAFT REMOVAL AND INSTALLATION**), if it was removed.
14. Install the transmission housing on the torque converter housing.

    -1 Install the three dowel pins (A) and a new gasket (B) on the torque converter housing (C).

    -2 Align the spring pin (D) of the control shaft (E) with the transmission housing groove (F) by turning the control shaft. Do not squeeze the end of the control shaft tips together when turning the shaft. If the tips are squeezed together, it will cause a faulty shift position signal or position due to the play between the control shaft and the transmission range switch.

    -3 Place the transmission housing (G) on the torque converter housing. Do not install the input shaft (mainshaft) speed sensor and output shaft (countershaft) speed sensor before installing the transmission housing on the torque converter housing.

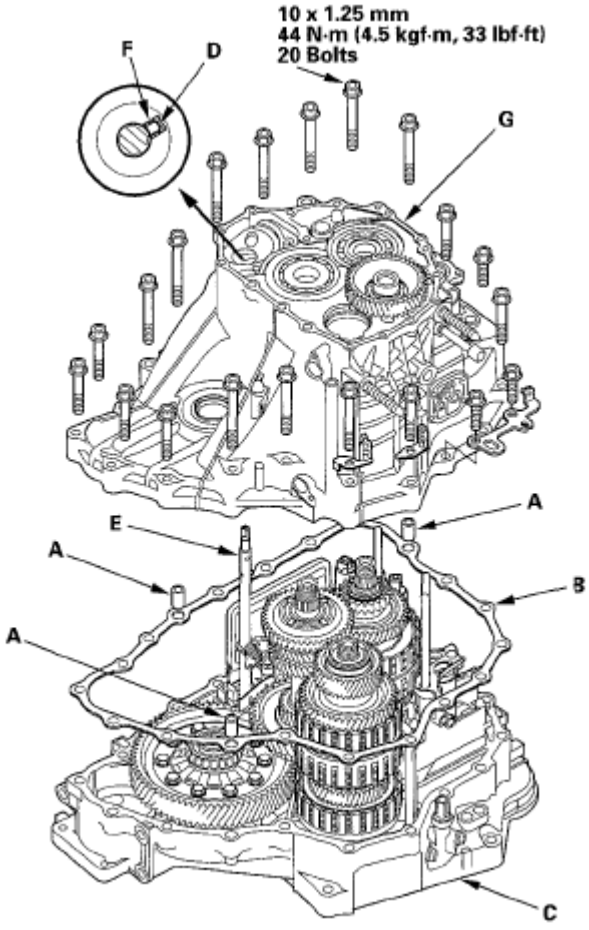


Fig. 531: Disassembled View Of Transmission Housing With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. While expanding the snap ring of the secondary shaft bearing using the snap ring pliers, push the transmission housing down to start the secondary shaft bearing through the snap ring. Then release the pliers. While rotating the reverse idler gear with a screwdriver, push down the housing until it bottoms and the snap ring snaps in place in the secondary shaft bearing snap ring groove.

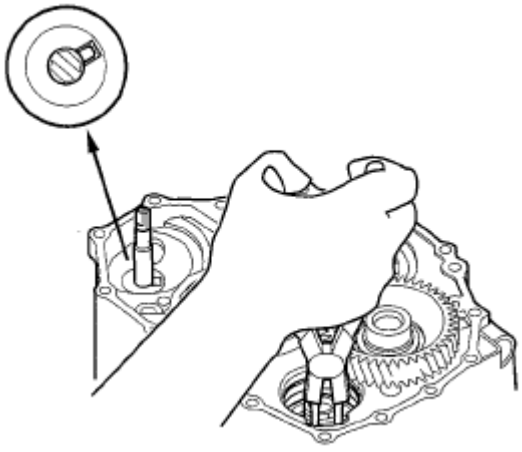


Fig. 532: Expanding Snap Ring Of Secondary Shaft Bearing With Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check that the secondary shaft bearing snap ring (A) is seated in the bearing and housing groove, and check that the ring end gap (B) is 0-7 mm (0-0.28 in.).

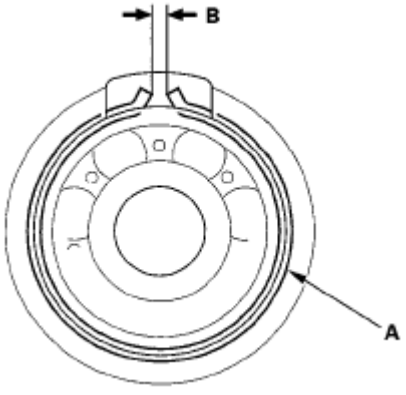


Fig. 533: Identifying Snap Ring End Gap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the transmission housing mounting bolts (20 bolts) along with the transmission hanger and harness clamp brackets.
18. Tighten the transmission housing mounting bolts to 44 N.m (4.5 kgf.m, 33 lbf.ft) in two or more steps in a crisscross pattern.
19. Install the input shaft (mainshaft) speed sensor (A) and output shaft (countershaft) speed sensor (B) and washer (C) with new O-rings (D).

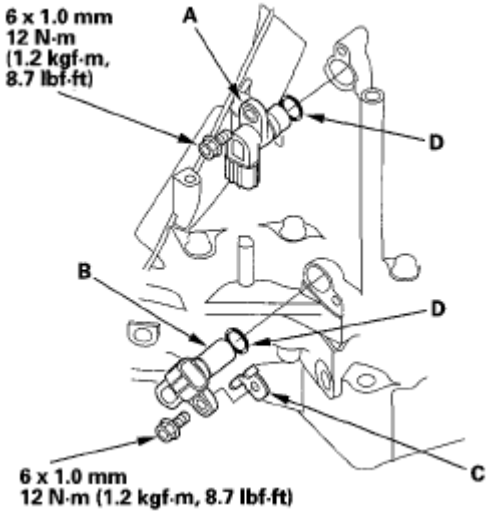


Fig. 534: Identifying Input Shaft (Mainshaft) Speed Sensor And Output Shaft (Countershaft) Speed Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the shift solenoid harness connector (F) in the transmission housing with a new O-ring (G).

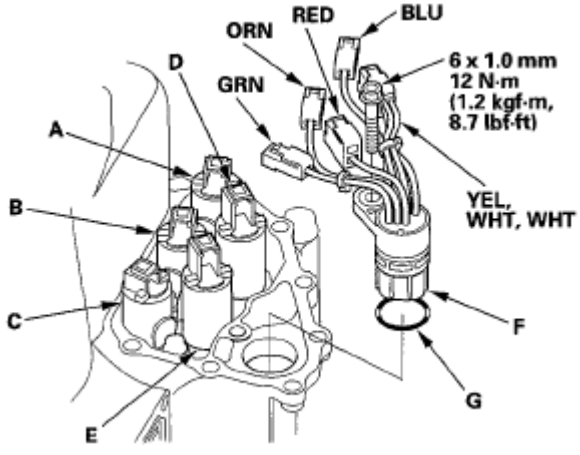


Fig. 535: Identifying Shift Solenoid Harness Connector And Transmission Housing With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Connect the connector (YEL, WHT, and WHT wires) to shift solenoid valve D.
22. Connect the connectors to the respective valves:
    - BLU wire to shift solenoid valve A.
    - ORN wire to shift solenoid valve B.
    - GRN wire to shift solenoid valve C.
    - RED wire to shift solenoid valve E.
23. Install the shift solenoid valve cover (A) with the two dowel pins (B) and a new gasket (C), and secure

the cover with the nine bolts.

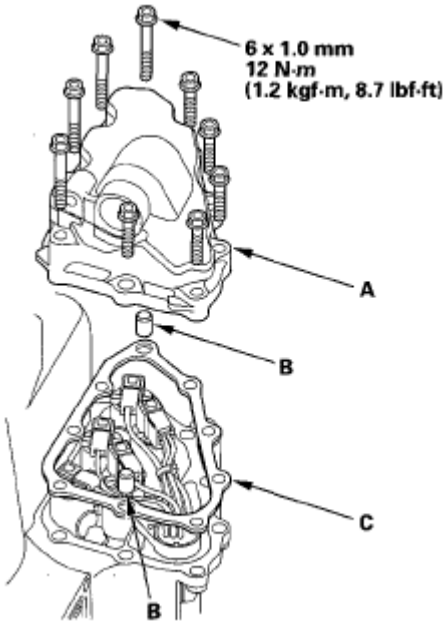


Fig. 536: Identifying Shift Solenoid Valve Cover With Dowel Pins And Gasket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

END COVER INSTALLATION

Special Tool Required

Mainshaft holder 07GAB-PF50101 or 07GAB-PF50100

1. Install the mainshaft holder onto the mainshaft.

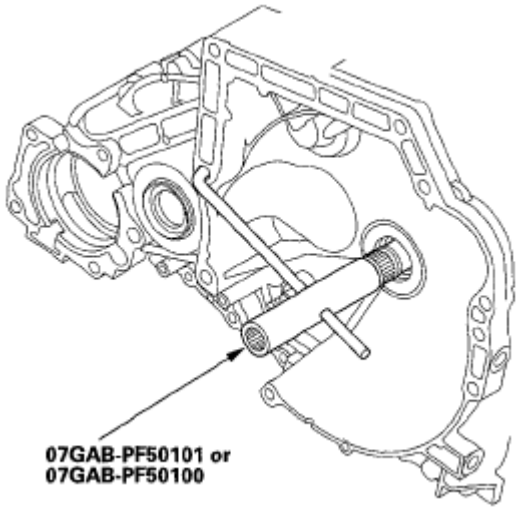


Fig. 537: Identifying Mainshaft Holder (07GAB-PF50101 Or 07GAB-PF50100)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Lubricate the following parts with ATF:
   - Splines and threads of the mainshaft.
   - Splines of the mainshaft idler gear.
   - Old conical spring washer and old locknut.
3. Install the mainshaft idler gear (A), old conical spring washer (B), and old locknut (C) on the mainshaft (D), and tighten the locknut to 226 N.m (23.0 kgf.m, 166 lbf.ft).

NOTE:

- **Do not tap the idler gear to install.**
- **Use a torque wrench to tighten the locknut. Do not use an impact wrench.**

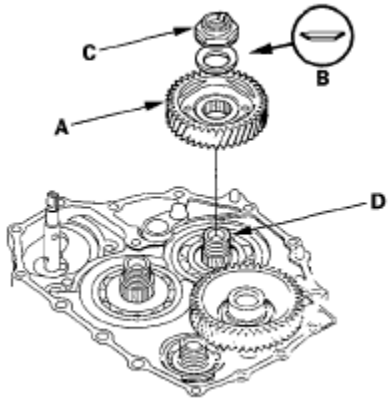


Fig. 538: Identifying Mainshaft Idler Gear, Old Conical Spring Washer And Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the park lever (A) and park lever stop (B) on the selector control shaft (C), then install the lock bolt with the new lock washer (D). Do not bend the lock tab of the lock washer until step 18.

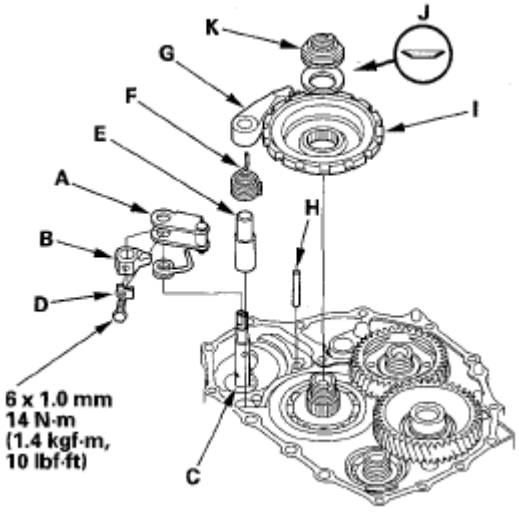


Fig. 539: Identifying Park Lever And Park Lever Stop On Selector Control Shaft With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the park pawl shaft (E), park pawl spring (F), park pawl (G), and stop shaft (H) on the transmission housing.
6. Lubricate the following parts with ATF:
   - Threads and splines of the countershaft.
   - Old conical spring washer and old locknut.
   - Areas where the park gear contacts the conical spring washer.
7. Install the park gear (I), old conical spring washer (J), and old locknut (K) on the countershaft.
8. Lift the park pawl up, and engage it with the park gear, then tighten the locknut to 226 N.m (23.0 kgf.m, 166 lbf.ft).

NOTE:
- **Do not tap the park gear to install.**
- **Use a torque wrench to tighten the locknut. Do not use an impact wrench.**
- **Countershaft locknut has left-hand threads.**

9. Remove the locknuts and conical spring washers from the mainshaft and countershaft.
10. Lubricate the threads of the shafts, the new locknuts and the new conical spring washers with ATF.
11. Install the new conical spring washers (A) with facing stamped mark side up in the direction shown, and install the new mainshaft locknut (B), the new countershaft locknut (C), and the new secondary shaft locknut (D).

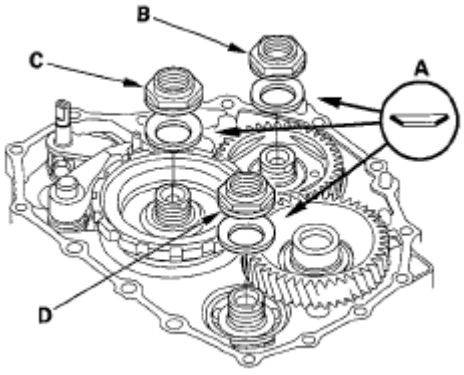


Fig. 540: Identifying Conical Spring Washers Installation Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Tighten the locknuts to 167 N.m (17.0 kgf.m, 123 lbf.ft).

NOTE:

- **Be sure to install the conical spring washers in the direction shown.**
- **Use a torque wrench to tighten the locknut. Do not use an impact wrench.**
- **Countershaft and secondary shaft locknuts have left-hand threads.**

13. Remove the mainshaft holder from the mainshaft.
14. Stake the locknuts into the shafts in depth (A) of 0.7-1.3 mm (0.03-0.05 in.) with a 3.5 mm punch (B).

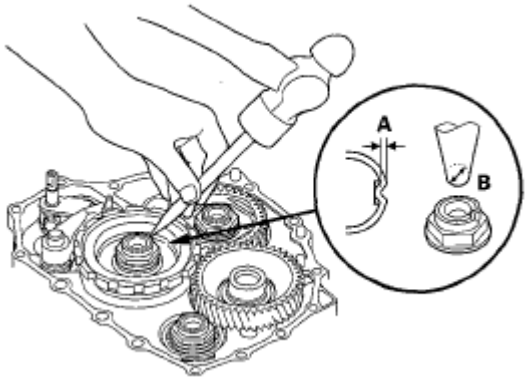


Fig. 541: Staking Locknuts Into Shafts In Depth
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the selector control lever (A) on the selector control shaft (B), and install the bolt with the new lock washer (C), then bend the lock tab of the lock washer against the bolt head.

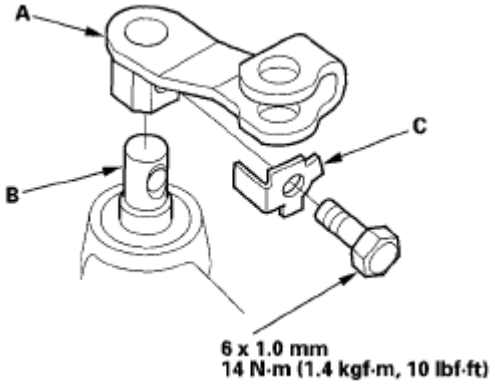


Fig. 542: Identifying Selector Control Lever On Selector Control Shaft With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Set the park lever in the P position, then check that the park pawl (A) engages the park gear (B).

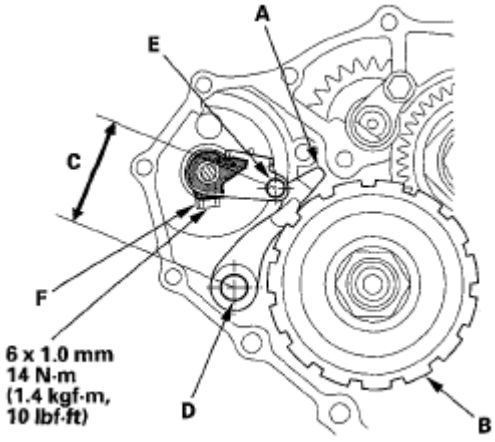


Fig. 543: Identifying Distance Between Park Pawl Shaft And Park Lever Roller Pin With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. If the park pawl does not engage fully, check the distance (C) between the park pawl shaft (D) and the park lever roller pin (E) (see **PARK LEVER STOP INSPECTION AND ADJUSTMENT**).
18. Tighten the lock bolt, and bend the lock tab of the lock washer (F) against the bolt head.
19. Install the ATF feed pipe (A) into the idler gear shaft, and install the ATF lubrication pipe (B) into the transmission housing.

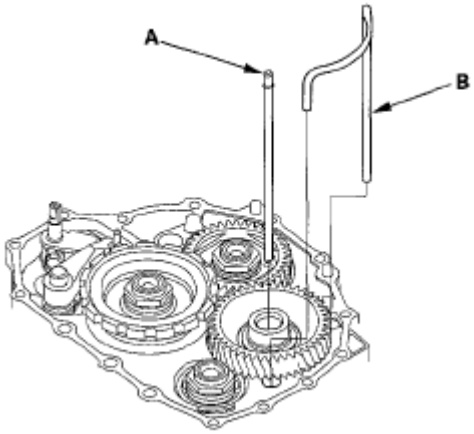


Fig. 544: Identifying ATF Feed Pipe And ATF Lubrication Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the new gasket (A) on the transmission housing, and install the two dowel pins (B) and new O-rings (C) over the top of the ATF feed pipes.

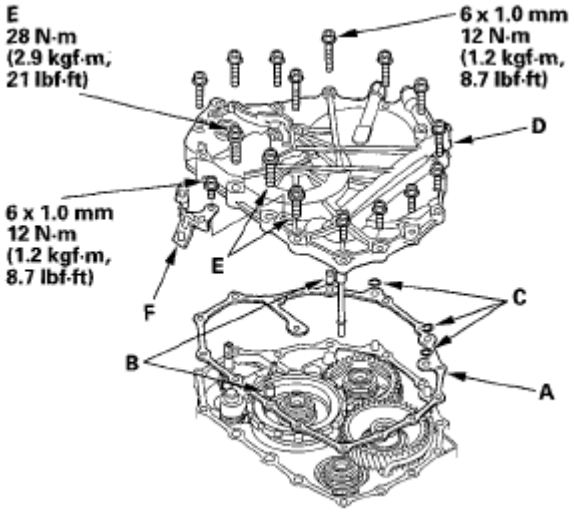


Fig. 545: Identifying Dowel Pins, O-Rings And Special Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the end cover (D), and tighten the three special bolts (E) and the 6 x 1.0 mm bolts (12 bolts).
22. Install the harness clamp bracket (F) on the end cover.
23. Set the selector control shaft (A) from the P position to the N position by turning the selector control lever on the torque converter side.

NOTE: Do not squeeze the end of the selector control shaft tips together when turning the shaft. If the tips are squeezed together it will cause a faulty shift position signal or position due to the play between the selector control shaft and the transmission range switch.

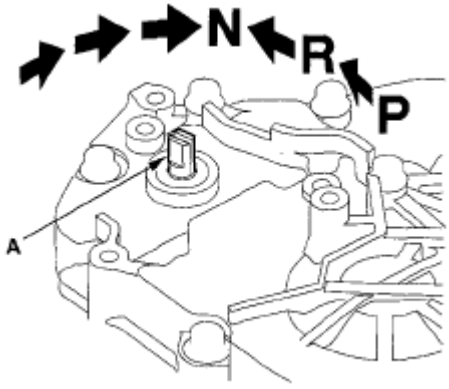


Fig. 546: Identifying Selector Control Shaft Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Align the cutouts (A) on the rotary-frame with the neutral positioning cutouts (B) on the transmission range switch (C), then put a 2.0 mm (0.08 in.) feeler gauge blade (D) in the cutouts to hold in the N position.

NOTE: Be sure to use a 2.0 mm (0.08 in.) blade or equivalent to hold the switch in the N position.

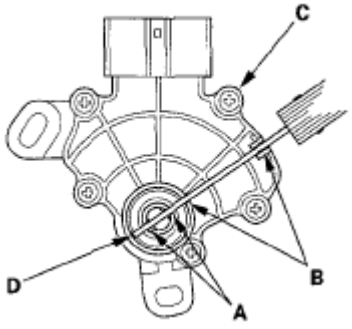


Fig. 547: Aligning Cutouts On Rotary-Frame With Neutral Positioning Cutouts On Transmission Range Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the transmission range switch (A) gently on the selector control shaft (B) while holding it in the N position with the 2.0 mm (0.08 in.) blade (C).

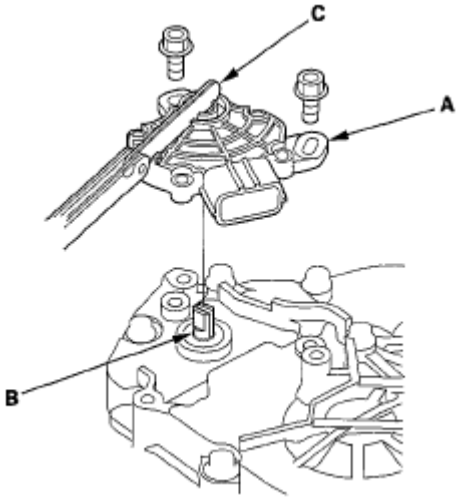


Fig. 548: Holding Transmission Range Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Tighten the bolts on the transmission range switch while you continue to hold it in the N position. Do not move the transmission range switch when tightening the bolts. Remove the feeler gauge.

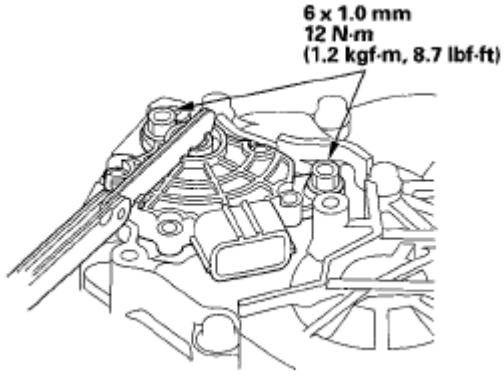


Fig. 549: Tightening Transmission Range Switch Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Connect the transmission range switch connector (A) securely, then install the harness clamps (B) on the clamp bracket (C).

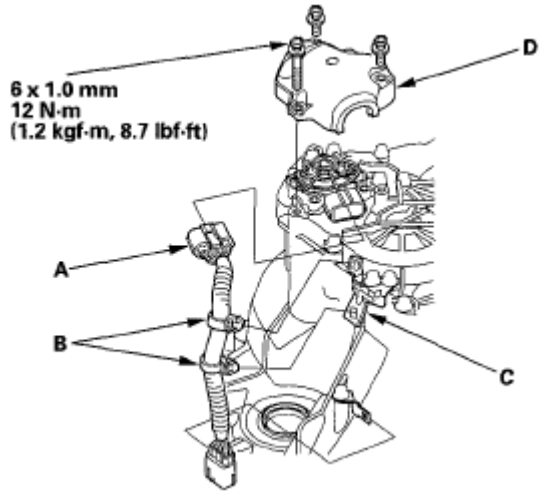


Fig. 550: Identifying Transmission Range Switch Connector, Harness Clamps And Clamp Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the transmission range switch cover (D).
29. Install the new gasket (B) on the transmission housing, and install the ATF pipe (C) and ATF joint pipes (D).

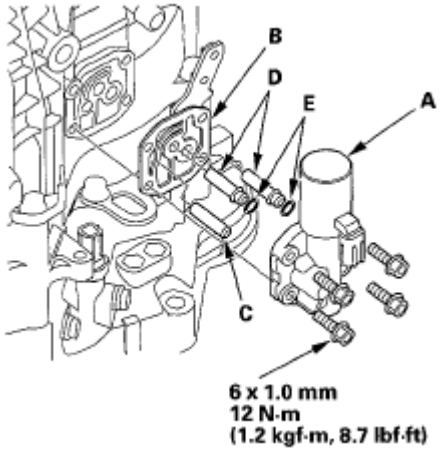


Fig. 551: Identifying ATF Pipe And ATF Joint Pipes With Gasket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Install the new O-rings (E) over the ATF joint pipes, and install A/T clutch pressure control solenoid valve A.
31. Install the new gasket (A) on the transmission housing, and install the ATF joint pipes (D).

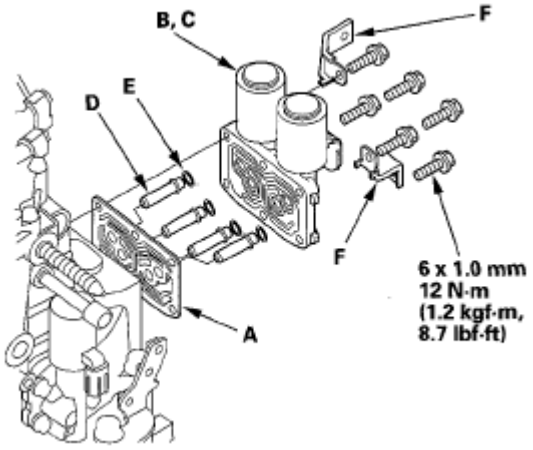


Fig. 552: Identifying ATF Joint Pipes And Gasket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Install the new O-rings (E) over the ATF joint pipes.
33. Install A/T clutch pressure control solenoid valves B and C, and harness clamp bracket (F).
34. Install the ATF cooler inlet line (A) with the line bolt (B) and new sealing washers (C), and install the brackets (D).

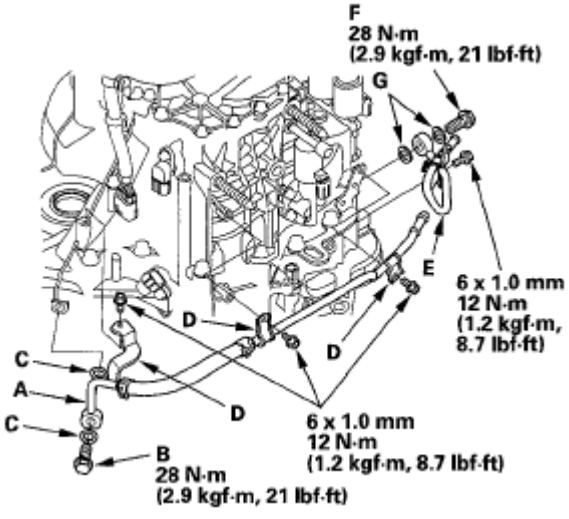


Fig. 553: Identifying ATF Cooler Inlet Line With Line Bolt Sealing Washers With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the ATF cooler outlet line (E) with the line bolt (F) and new sealing washers (G).
36. 4WD: Install the transfer assembly (A) with a new O-ring (B) and the dowel pin (C).

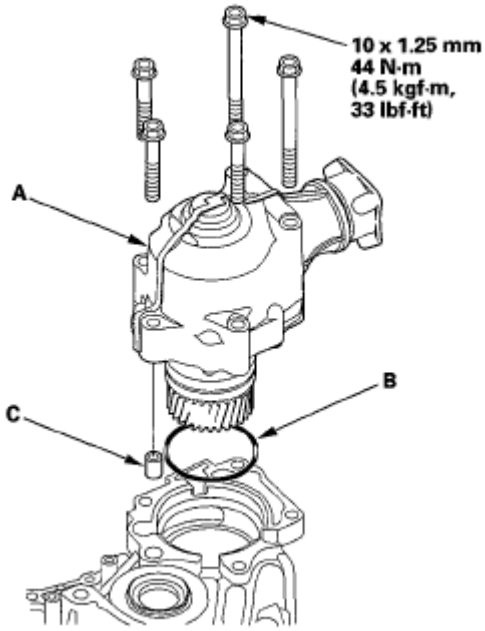


Fig. 554: Identifying Transfer Assembly With O-Ring And Dowel Pin With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

4WD

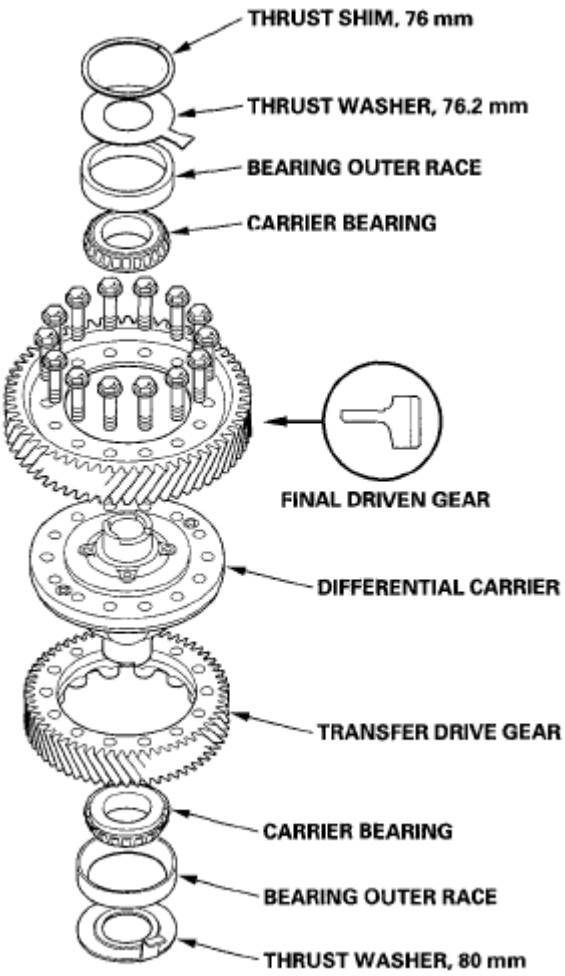


Fig. 555: Identifying A/T Differential Components Location (4WD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2WD

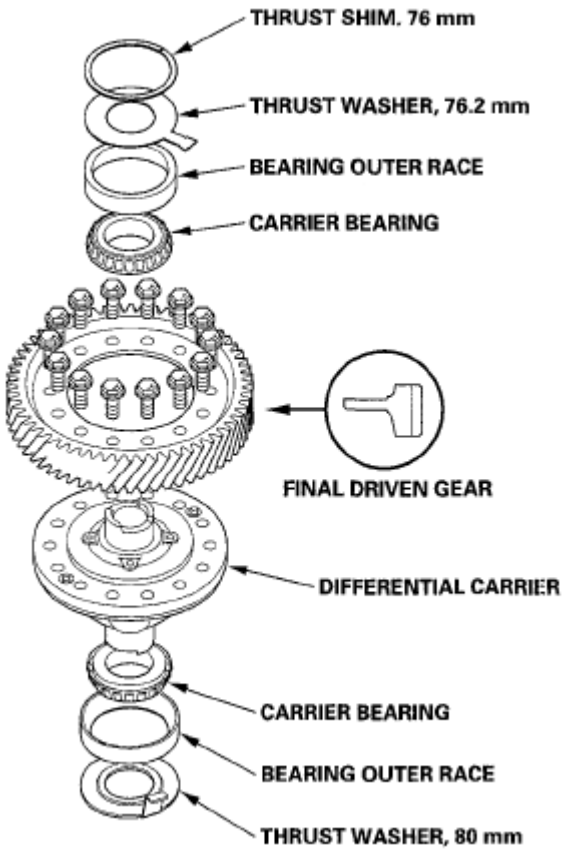


Fig. 556: Identifying A/T Differential Components Location (2WD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BACKLASH INSPECTION

NOTE: The illustration shows the 4WD transmission; the 2WD transmission is similar.

1. Install the drive shaft and intermediate shaft into the differential assembly.
2. Secure the driveshaft (A) in a bench vise (B) with soft jaws (C). To prevent damage to the driveshaft, always use soft jaws or equivalent material between the driveshaft and the vise.

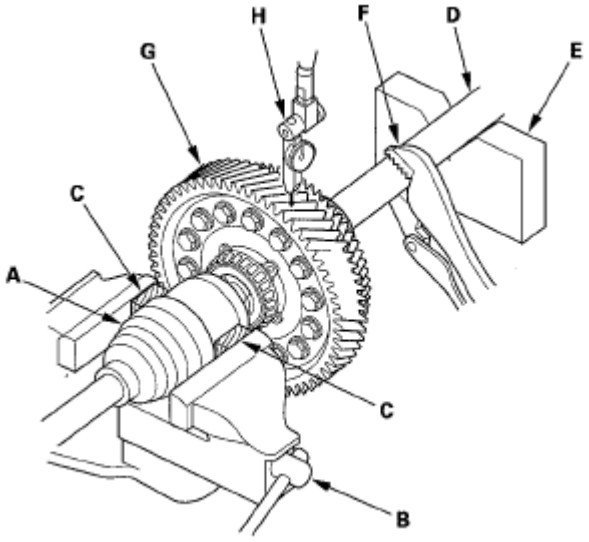


Fig. 557: Measuring Backlash Of Final Driven Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Place the intermediate shaft (D) on a V-block (E), then fix the intermediate shaft using a grip (F) or equivalent.
4. Measure the backlash of the final driven gear (G) with a dial indicator (H).

   Standard: 1.1-1.6 mm (0.04-0.06 in.)

5. If the backlash is out of standard, replace the differential carrier; 4WD (see **DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT**), 2WD (see **DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT**).

CARRIER BEARING REPLACEMENT

Special Tools Required

Attachment, 40 x 50 mm 07LAD-PW50601

NOTE:

- **The bearing and bearing outer race should be replaced as a set.**
- **Inspect and adjust the carrier bearing preload whenever a bearing is replaced.**
- **Check the bearing for wear and rough rotation. If the bearing is OK, removal is not necessary.**
- **The illustration shows the 4WD transmission; the 2WD transmission is similar.**

1. 4WD: Remove the final driven gear and transfer drive gear (see **DIFFERENTIAL CARRIER, FINAL**

DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT).

2WD: Remove the final driven gear (see **DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT**).

2. Remove the carrier bearing (A) with a commercially available puller (B), bearing separator (C), and stepper adapter (D).

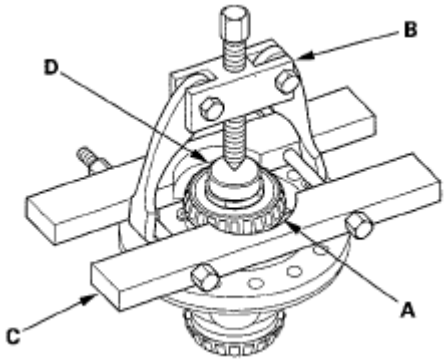


Fig. 558: Removing Carrier Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new bearings with the 40 x 50 mm attachment and a press. Press the bearing on securely so there is no clearance between the bearing and the differential carrier.

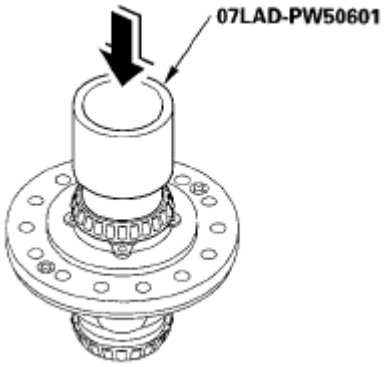


Fig. 559: Pressing Bearings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT

4WD

1. Remove the final driven gear (A) and transfer drive gear (B) from the differential carrier (C).

NOTE: The final driven gear bolts have left-hand threads.

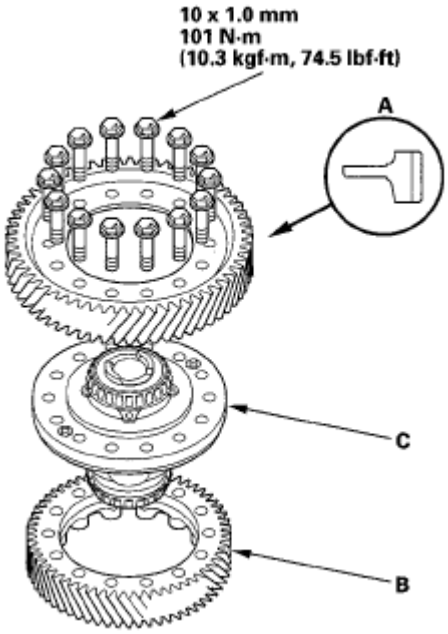


Fig. 560: Identifying Final Driven Gear And Transfer Drive Gear From Differential Carrier (4WD) With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the final driven gear and transfer drive gear on the differential carrier in the direction shown.
3. Tighten the bolts to the specified torque in a crisscross pattern in two or more steps.

DIFFERENTIAL CARRIER AND FINAL DRIVEN GEAR REPLACEMENT

2WD

1. Remove the final driven gear (A) from the differential carrier (B).

NOTE: The final driven gear bolts have left-hand threads.

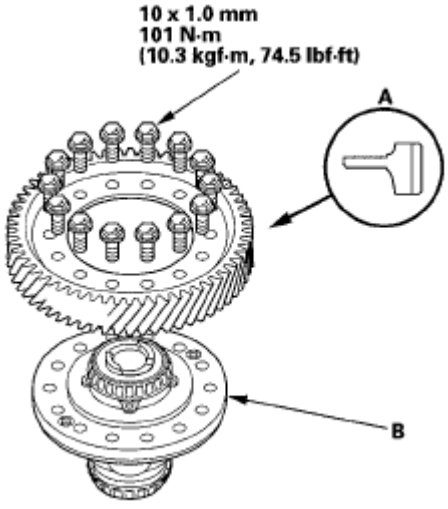


Fig. 561: Identifying Final Driven Gear From Differential Carrier (2WD) With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the final driven gear on the differential carrier in the direction shown.
3. Tighten the bolts to the specified torque in a crisscross pattern in two or more steps.

OIL SEAL REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Oil seal driver attachment 07947-SD90101
- Oil seal driver attachment 07JAD-PH80101

NOTE: The illustration shows the 4WD transmission; the 2WD transmission is similar.

1. Remove the oil seal from the transmission housing.

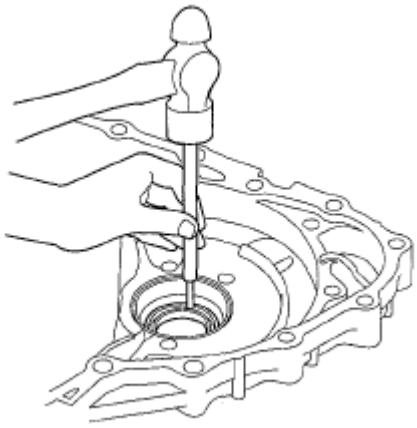


Fig. 562: Tapping Oil Seal From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the oil seal from the torque converter housing.

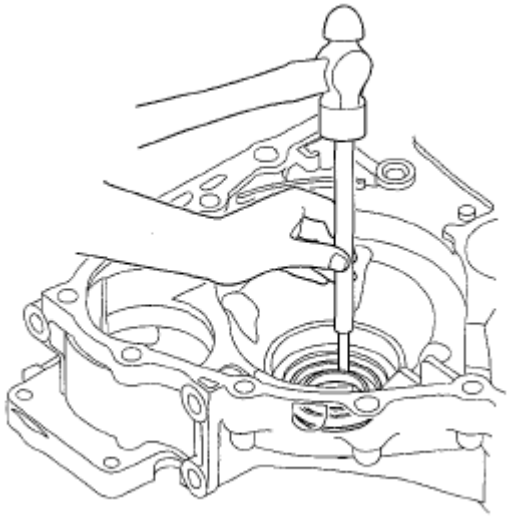


Fig. 563: Tapping Oil Seal From Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal (A) in the transmission housing with the oil seal driver and attachment.

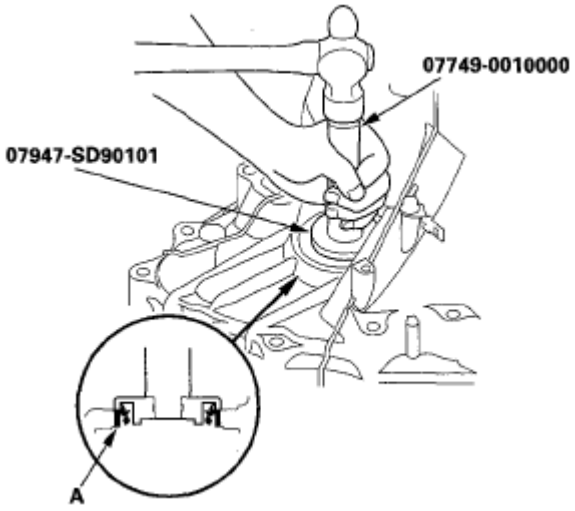


Fig. 564: Installing Oil Seal In Transmission Housing With Oil Seal Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the new oil seal (A) in the torque converter housing with the oil seal driver and attachment.

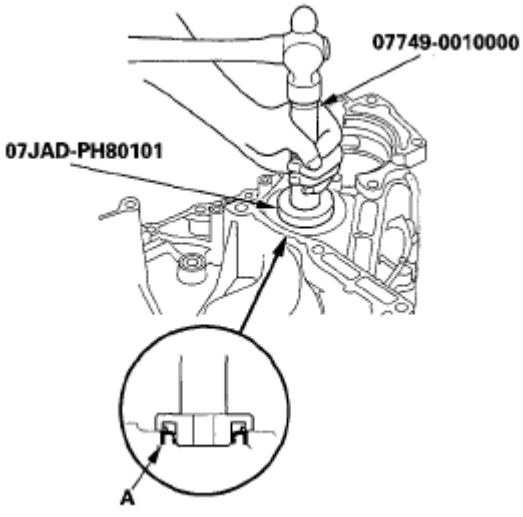


Fig. 565: Installing Oil Seal In Torque Converter Housing With Oil Seal Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARRIER BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 78 x 90 mm 07GAD-SD40101
- Attachment, 72 x 75 mm 07746-0010600

NOTE:

- **The bearing and bearing outer race should be replaced as a set.**
- **Replace the bearing with a new one whenever the outer race is replaced.**
- **Do not use the thrust shim on the torque converter housing.**
- **Adjust bearing preload after replacing the bearing and outer race.**
- **Coat all parts with ATF during installation.**
- **The illustration shows the 4WD transmission; the 2WD transmission is similar.**

1. Remove the bearing outer race (A), 76.2 mm thrust washer (B), and 76 mm thrust shim (C) from the transmission housing (D) by heating the housing to about 212°F (100°C) with heat gun (E). Do not heat the housing in more than of 212°F (100°C).

NOTE: Let the transmission housing cool to room temperature before installing the bearing outer race.

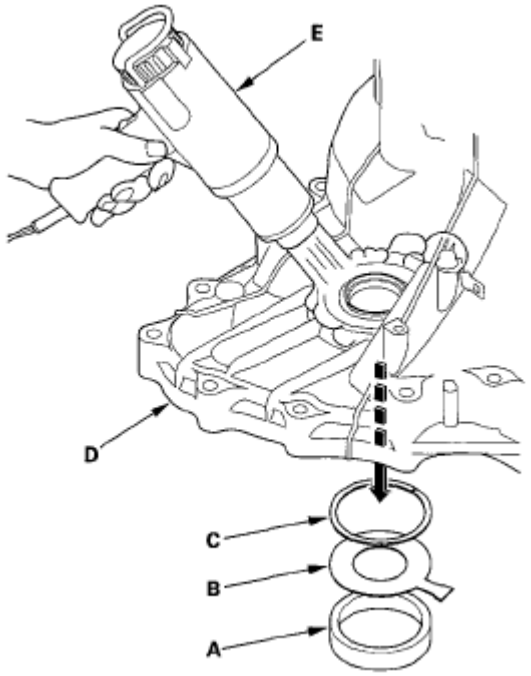


Fig. 566: Heating Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bearing outer race (A) and 80 mm thrust washer (B) from the torque converter housing (C).

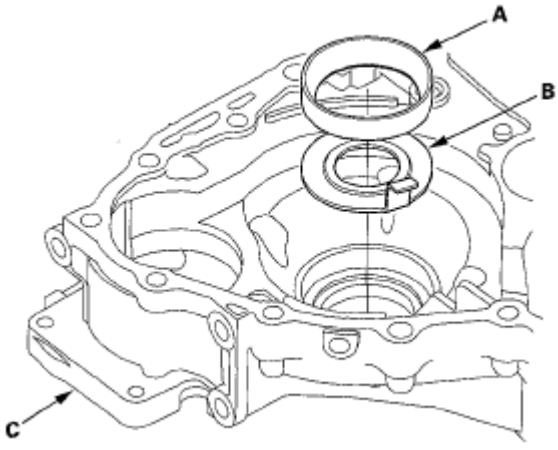


Fig. 567: Identifying Bearing Outer Race And Thrust Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the 80 mm thrust washer and the new bearing outer race in the torque converter housing.
4. Install the bearing outer race securely in the torque converter housing with the driver and 78 x 90 mm attachment.

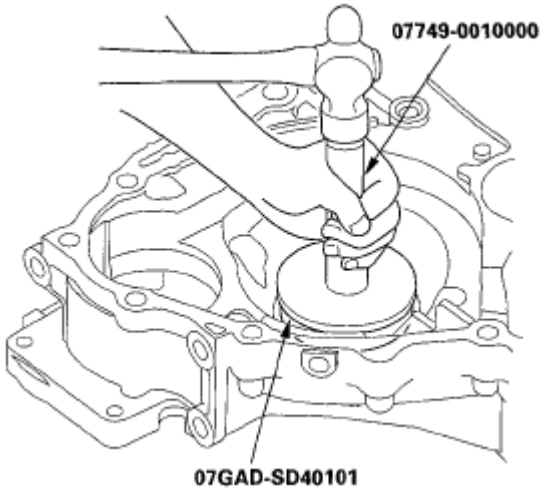


Fig. 568: Tapping Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the 76 mm thrust shim (A), 76.2 mm thrust washer (B), and the new bearing outer race (C) in the transmission housing (D).

NOTE: Install the 76.2 mm thrust washer with the "41382RKY" mark facing downward.

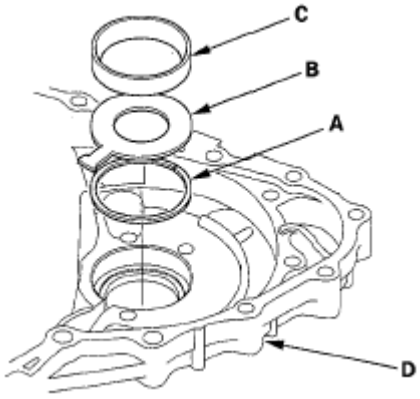


Fig. 569: Identifying Thrust Shim, Thrust Washer And Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With the driver and 72 x 75 mm attachment, install the bearing outer race securely so there is no clearance between the outer race, thrust washer, shim, and housing.

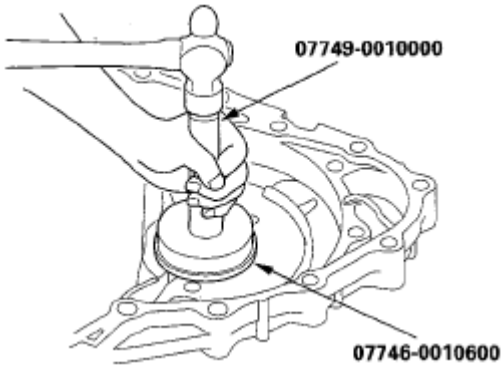


Fig. 570: Identifying Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARRIER BEARING PRELOAD INSPECTION

Special Tools Required

- Driver 07749-0010000
- Attachment, 72 x 75 mm 07746-0010600
- Preload inspection tool 07HAJ-PK40201

NOTE:

- **If the transmission housing, torque converter housing, differential carrier, carrier bearing and outer race, or thrust shim were replaced, the bearing preload must be adjusted.**
- **Coat all parts with ATF during installation.**
- **Do not use the thrust shim in the torque converter housing.**

- **The illustration shows the 4WD transmission; the 2WD transmission is similar.**

1. Remove the bearing outer race (A), 76.2 mm thrust washer (B), and 76 mm thrust shim (C) from the transmission housing (D) by heating the housing to about 212°F (100°C) with heat gun (E). Do not heat the housing more than of 212°F (100°C).

NOTE: Let the transmission housing cool to room temperature before adjusting the bearing preload.

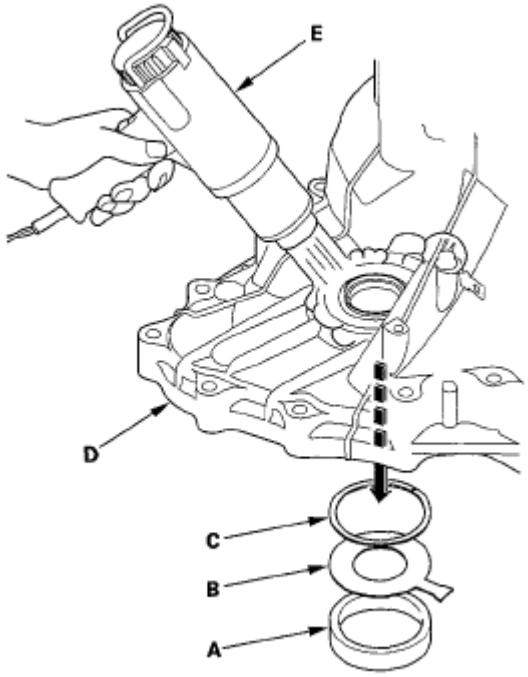


Fig. 571: Removing Bearing Outer Race With Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 76 mm thrust shim (A) in the transmission housing (B). If you replace the 76 mm thrust shim with a new one, use the same thickness shim as the old one.

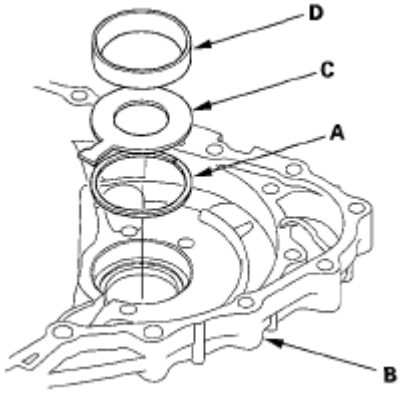


Fig. 572: Identifying Thrust Shim, Thrust Washer And Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the 76.2 mm thrust washer (C) and the bearing outer race (D) in the transmission housing.

NOTE: Install the 76.2 mm thrust washer with the "41382RKY" mark facing downward.

4. With the driver and 72 x 75 mm attachment, install the bearing outer race securely so there is no clearance between the outer race, thrust washer, shim, and housing.

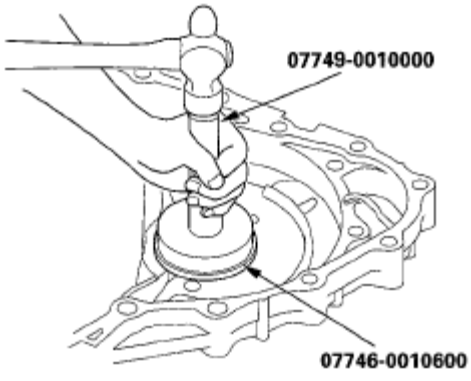


Fig. 573: Tapping Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the differential assembly (A) in the torque converter housing (B).

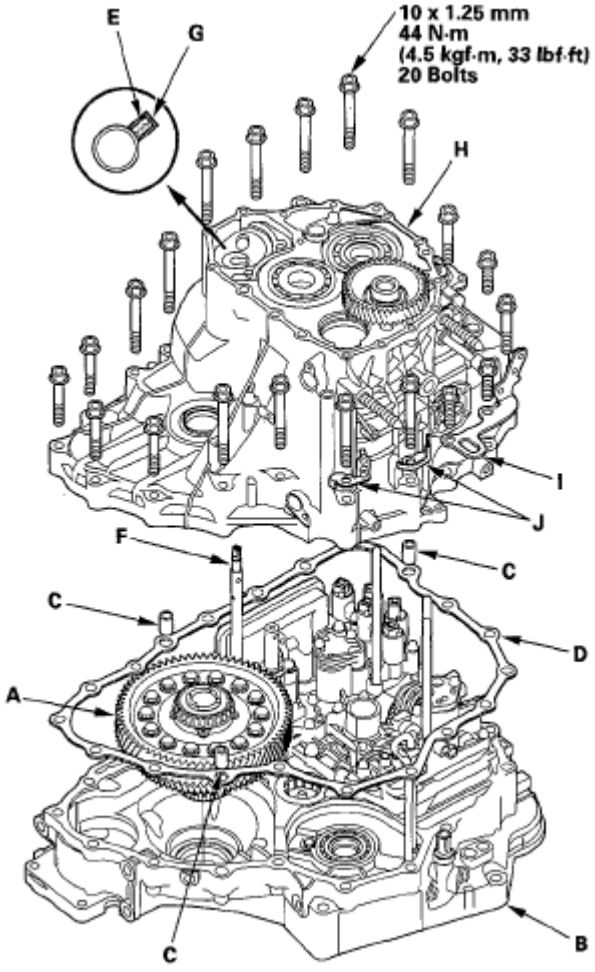


Fig. 574: Disassembled View Of Differential Assembly With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the three dowel pins (C) and a new gasket (D) on the torque converter housing.
7. Align the spring pin (E) of the control shaft (F) with the transmission housing groove (G) by turning the control shaft. Do not squeeze the end of the control shaft tips together when turning the shaft.
8. Place the transmission housing (H) on the torque converter housing.
9. Install the transmission housing mounting bolts (20 bolts) along with the transmission hanger (I) and harness clamp brackets (J). Tighten the mounting bolts to 44 N.m (4.5 kgf.m, 33 lbf.ft) in two or more steps in a crisscross pattern.
10. Rotate the differential assembly in both directions to seat the bearings.
11. Measure the starting torque of the differential assembly with the preload inspection tool, a torque wrench (A), and a socket (B). Measure the starting torque at normal room temperature in both directions.

Standard

New Bearing:

2.7-3.9 N.m (28-40 kgf.cm, 24-35 lbf.in.)

Reused Bearing:

2.5-3.6 N.m (25-37 kgf.cm, 22-32 lbf.in.)

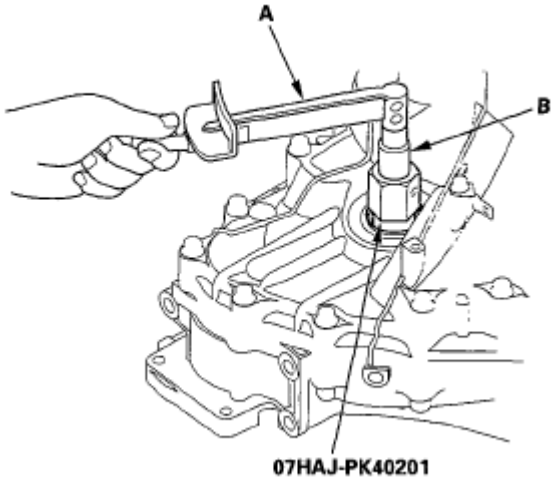


Fig. 575: Measuring Starting Torque Of Differential Assembly With Preload Inspection Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. If the measurement is out of standard, remove the thrust shim and select the thrust shim from table. Install the new thrust shim and recheck. To increase the starting torque, increase the thickness of the thrust shim. To decrease the starting torque, decrease the thickness of the shim. Changing the thickness of shim by 0.05 mm will increase or decrease starting torque about 0.3-0.4 N.m (3-4 kgf.cm, 2.7-3.5 lbf.in.).

THRUST SHIM, 76 mm

THRUST SHIM THICKNESS SPECIFICATION

No.	Part Number	Thickness
S	41438-PX4-700	2.05 mm (0.081 in.)
T	41439-PX4-700	2.10 mm (0.083 in.)
U	41440-PX4-700	2.15 mm (0.085 in.)
A	41441-PK4-000	2.20 mm (0.087 in.)
B	41442-PK4-000	2.25 mm (0.089 in.)
C	41443-PK4-000	2.30 mm (0.091 in.)
D	41444-PK4-000	2.35 mm (0.093 in.)
E	41445-PK4-000	2.40 mm (0.094 in.)
F	41446-PK4-000	2.45 mm (0.096 in.)
G	41447-PK4-000	2.50 mm (0.098 in.)
H	41448-PK4-000	2.55 mm (0.100 in.)
I	41449-PK4-000	2.60 mm (0.101 in.)

J	41450-PK4-000	2.65 mm (0.103 in.)
K	41451-PK4-000	2.70 mm (0.105 in.)
L	41452-PK4-000	2.75 mm (0.107 in.)
M	41453-PK4-000	2.80 mm (0.110 in.)
N	41454-PK4-000	2.85 mm (0.112 in.)
O	41455-PK4-000	2.90 mm (0.114 in.)
P	41456-PK4-000	2.95 mm (0.116 in.)
Q	41457-PK4-000	3.00 mm (0.118 in.)
R	41458-PK4-000	3.05 mm (0.120 in.)
0A	41428-PRP-000	1.55 mm (0.061 in.)
0B	41429-PRP-000	1.60 mm (0.063 in.)
0C	41430-PRP-000	1.65 mm (0.065 in.)
0D	41431-PRP-000	1.70 mm (0.067 in.)
0E	41432-PRP-000	1.75 mm (0.069 in.)
0F	41433-PRP-000	1.80 mm (0.071 in.)
0G	41434-PRP-000	1.85 mm (0.073 in.)
OH	41435-PRP-000	1.90 mm (0.075 in.)
0I	41436-PRP-000	1.95 mm (0.077 in.)
0J	41437-PRP-000	2.00 mm (0.079 in.)
A	41428-PAX-000	1.575 mm (0.062 in.)
B	41429-PAX-000	1.625 mm (0.064 in.)
C	41430-PAX-000	1.675 mm (0.066 in)
D	41431-PAX-000	1.725 mm (0.068 in.)
E	41432-PAX-000	1.775 mm (0.070 in.)
F	41433-PAX-000	1.825 mm (0.072 in)
G	41434-PAX-000	1.875 mm (0.074 in)
H	41435-PAX-000	1.925 mm (0.076 in.)
I	41436-PAX-000	1.975 mm (0.078 in.)
J	41437-PAX-000	2.025 mm (0.080 in.)
K	41438-PAX-000	2.075 mm (0.082 in.)
L	41439-PAX-000	2.125 mm (0.084 in.)
M	41440-PAX-000	2.175 mm (0.086 in.)
N	41441-PAX-000	2.225 mm (0.088 in.)
O	41442-PAX-000	2.275 mm (0.090 in.)
P	41443-PAX-000	2.325 mm (0.092 in.)
Q	41444-PAX-000	2.375 mm (0.094 in.)
R	41445-PAX-000	2.425 mm (0.095 in.)
S	41446-PAX-000	2.475 mm (0.097 in.)
T	41447-PAX-000	2.525 mm (0.099 in.)
U	41448-PAX-000	2.575 mm (0.101 in.)
V	41449-PAX-000	2.625 mm (0.103 in.)

	41450-PAX-000	2.675 mm (0.105 in.)
X	41451-PAX-000	2.725 mm (0.107 in.)
Y	41452-PAX-000	2.775 mm (0.109 in.)
Z	41453-PAX-000	2.825 mm (0.111 in.)
0A	41454-PAX-000	2.875 mm (0.113 in.)
0B	41455-PAX-000	2.925 mm (0.115 in.)
0C	41456-PAX-000	2.975 mm (0.117 in.)
0D	41457-PAX-000	3.025 mm (0.119 in.)

INSPECTION

1. Set the dial indicator (A) on the companion flange (B).

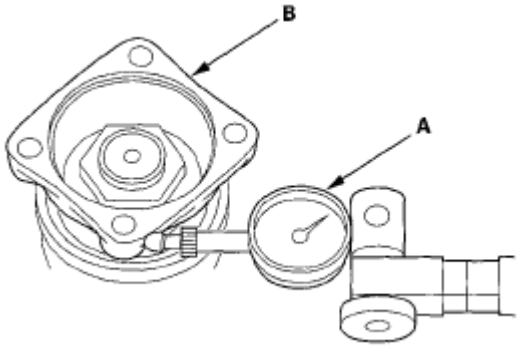


Fig. 576: Measuring Transfer Gear Backlash
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the transfer gear backlash.

   Standard: 0.06-0.16 mm (0.002-0.006 in.)

3. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

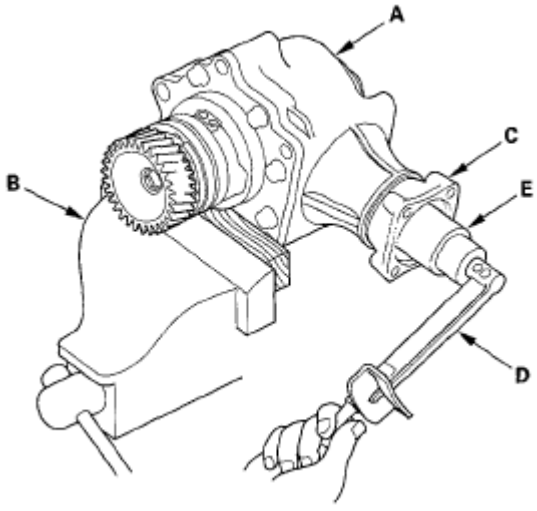


Fig. 577: Measuring Starting Torque Companion Flange With Torque Wrench
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Rotate the companion flange several times to seat the tapered roller bearings.
5. Measure the starting torque at the companion flange (C) with a torque wrench (D) and a socket (E).

   Standard: 2.75-4.22 N.m

   (28.1-43.1 kgf.cm, 24.4-37.4 lbf.in.)

6. Remove the transfer assembly from the vise.
7. Remove the transfer holder (A) from the transfer housing (B), then remove the O-ring (C) from the transfer holder.

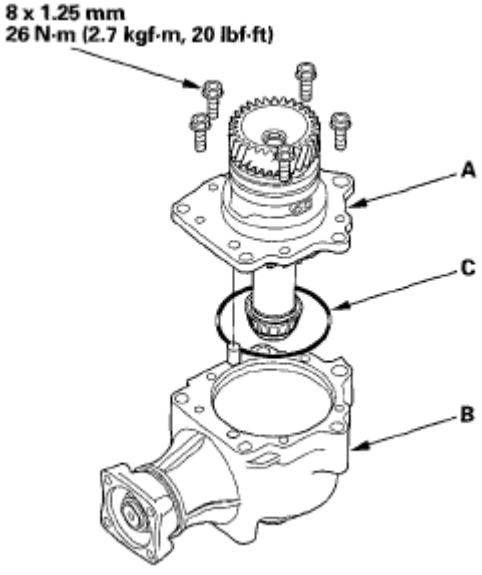


Fig. 578: Identifying Transfer Holder From Transfer Housing With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Apply Prussian Blue to both sides of the transfer drive gear teeth lightly and evenly.
9. Install the transfer holder, and tighten the bolts. Do not install the O-ring on the transfer holder.
10. Rotate the companion flange in both directions until the transfer gears rotate one full turn in both directions.
11. Remove the transfer holder, and check the transfer drive gear tooth contact pattern. The pattern should be centered on the gear teeth as shown.

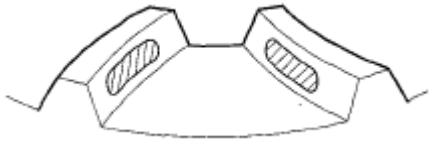


Fig. 579: Identifying Transfer Drive Gear Tooth Contact Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. If the measurements are out of standard or the tooth contact pattern are incorrect, disassemble the transfer assembly and repair.

DISASSEMBLY

EXPLODED VIEW

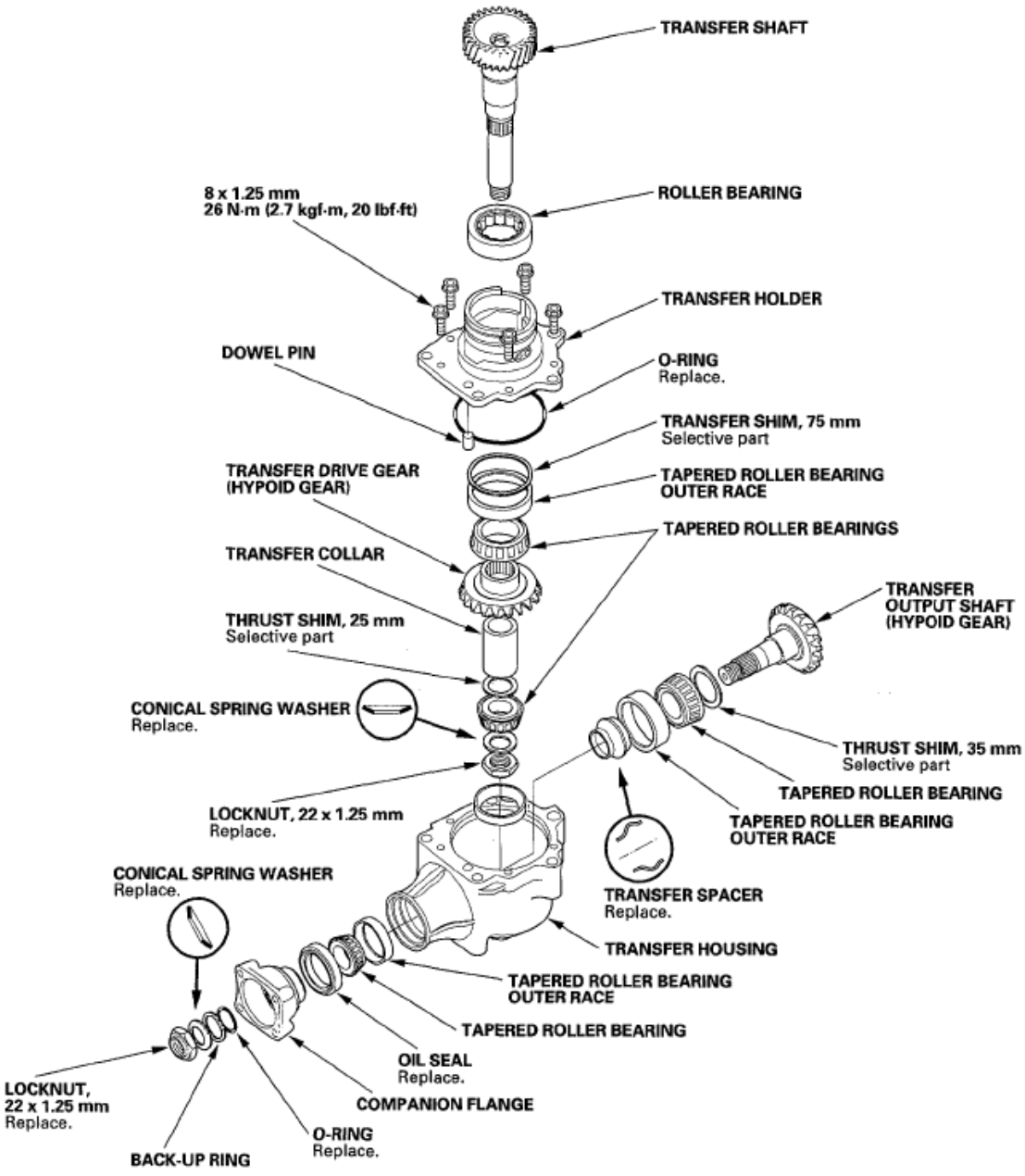


Fig. 580: Exploded View Of Transfer Assembly Components With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Companion flange holder 07RAB-TB4010A or 07RAB-TB4010B
- Holder handle 07JAB-001020A

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

1. Remove the transfer holder (A) from the transfer housing (B).

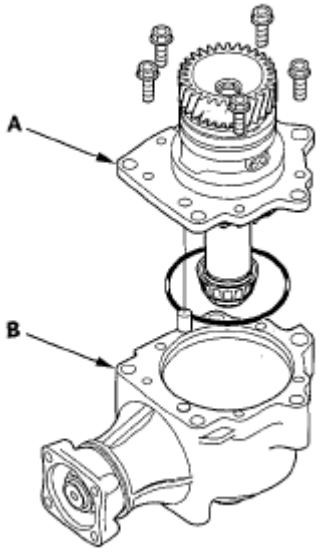


Fig. 581: Identifying Transfer Holder And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Cut the lock tab on the locknut using a chisel.

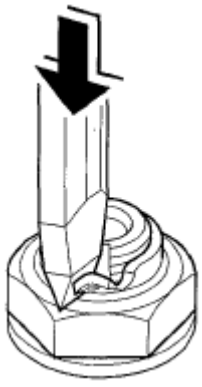


Fig. 582: Cutting Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

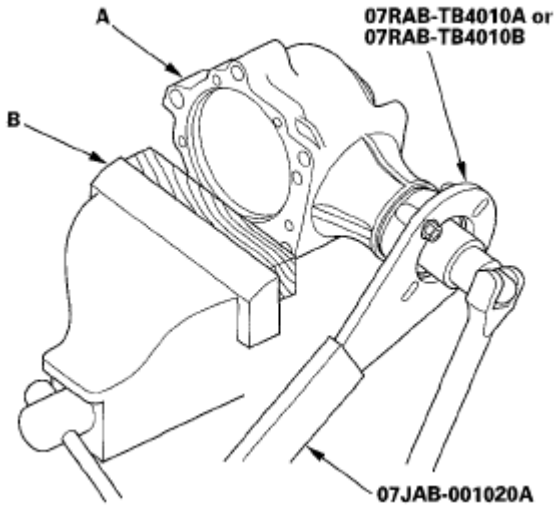


Fig. 583: Removing Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the companion flange holder and holder handle on the companion flange, then loosen the locknut.
5. Remove the companion flange holder and holder handle.
6. Remove the locknut (A), conical spring washer (B), back-up ring (C), O-ring (D), and companion flange (E) from the transfer output shaft (F).

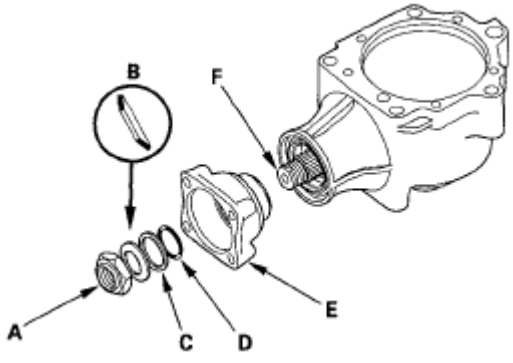


Fig. 584: Identifying Locknut, Conical Spring Washer, Back-Up Ring, O-Ring, And Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the transfer output shaft (A) from the transfer housing (B), then remove the transfer spacer (C) from the transfer output shaft.

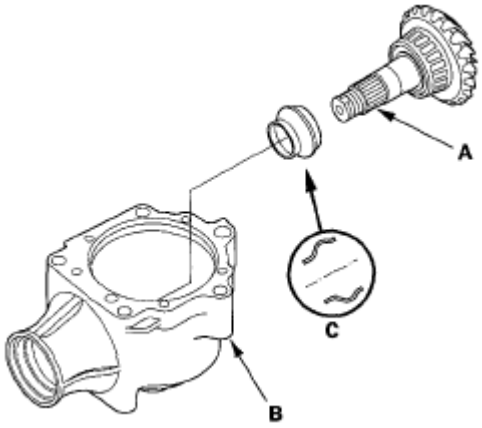


Fig. 585: Identifying Transfer Output Shaft And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the oil seal (A) and tapered roller bearing (B) from the transfer housing (C).

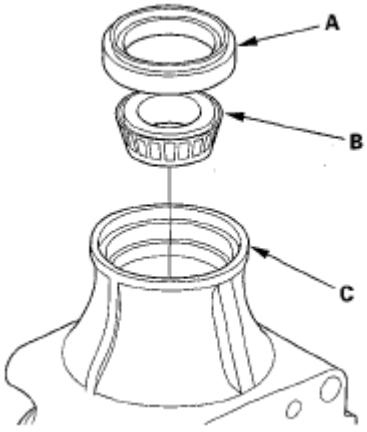


Fig. 586: Identifying Oil Seal And Tapered Roller Bearing And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER HOLDER DISASSEMBLY

1. Cut the lock tab on the locknut of the transfer shaft using a chisel.

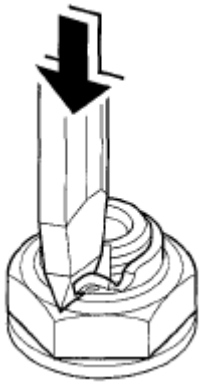


Fig. 587: Cutting Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Put a 14 mm hex wrench (A) in the transfer shaft (B), then secure the hex wrench in a bench vise.

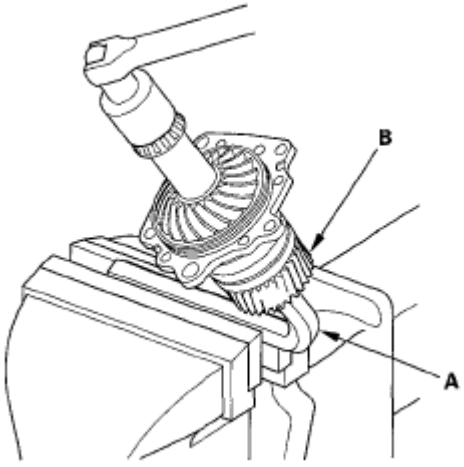


Fig. 588: Putting Hex Wrench In Transfer Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the locknut (A) and conical spring washer (B).

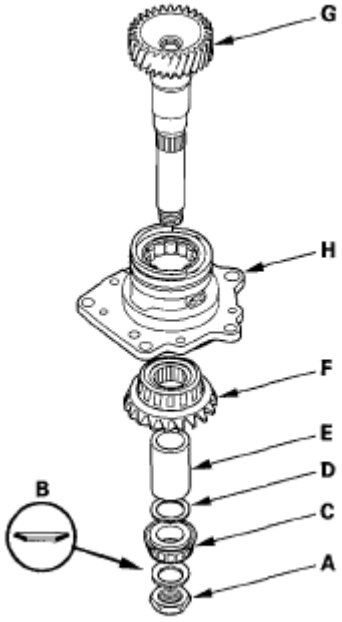


Fig. 589: Identifying Tapered Roller Bearing, Thrust Shim, Transfer Collar, Transfer Drive Gear And Transfer Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the tapered roller bearing (C), 25 mm thrust shim (D), transfer collar (E), transfer drive gear (F), and transfer shaft (G) from the transfer holder (H).

TRANSFER HOLDER ROLLER BEARING REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 62 x 68 mm 07746-0010500

1. Remove the roller bearing from the transfer holder.

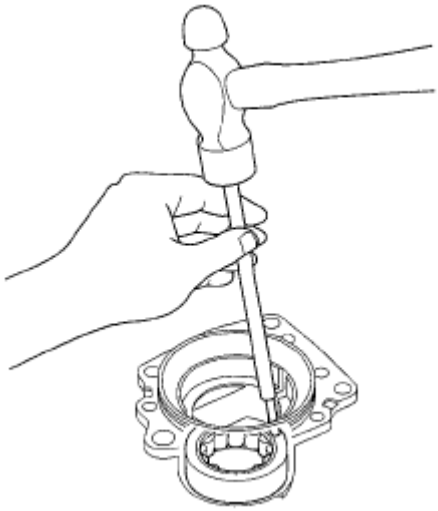


Fig. 590: Removing Roller Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new roller bearing in the transfer holder with the driver and 62 x 68 mm attachment.

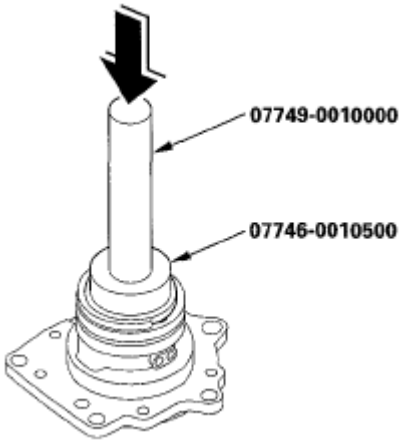


Fig. 591: Identifying Roller Bearing And Transfer Holder With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER HOLDER TAPERED ROLLER BEARING OUTER RACE REMOVAL/INSTALLATION

Special Tools Required

- Driver 07749-0010000
- Attachment, 72 x 75 mm 07746-0010600

1. Remove the tapered roller bearing outer race (A) and 75 mm thrust shim (B) from the transfer holder.

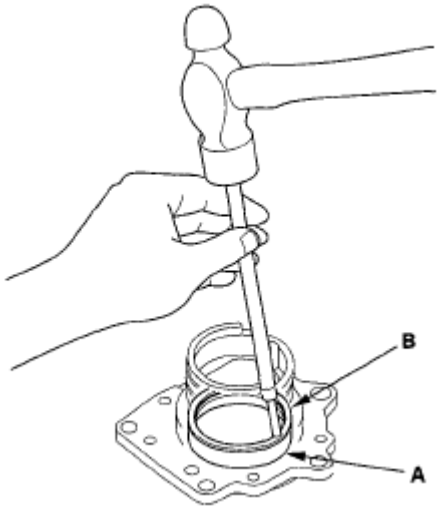


Fig. 592: Removing Tapered Roller Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 75 mm thrust shim (A) in the transfer holder, then install the tapered roller bearing outer race (B) with the driver and 72 x 75 mm attachment.

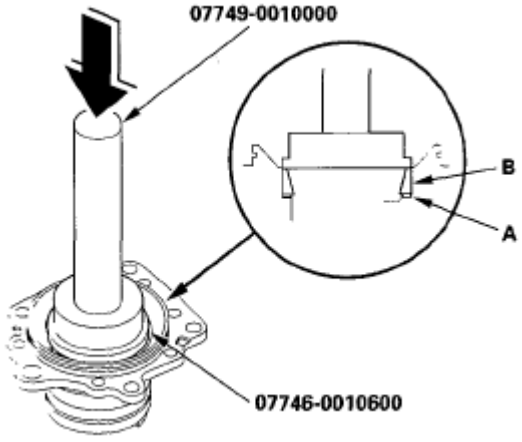


Fig. 593: Pressing Tapered Roller Bearing Outer Race With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER DRIVE GEAR BEARING REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 37 x 40 mm 07746-0010200
- Attachment, 52 x 55 mm 07746-0010400

1. Remove the tapered roller bearing (A) from the transfer drive gear (B) with the driver and 37 x 40 mm

attachment, bearing separator (C) and a press.

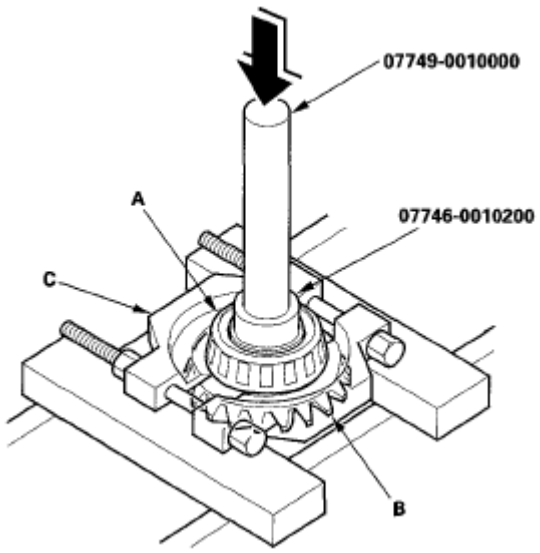


Fig. 594: Removing Tapered Roller Bearing With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new tapered roller bearing (A) on the transfer drive gear (B) with the driver and 52 x 55 mm attachment, and a press.

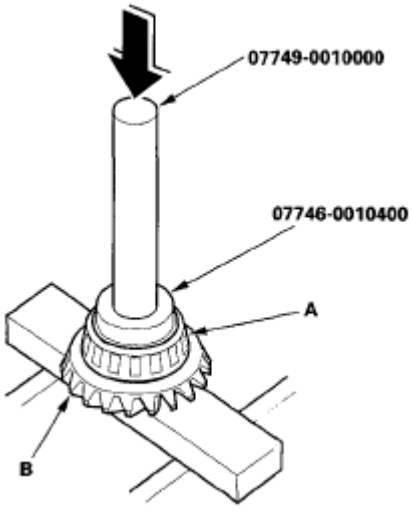


Fig. 595: Installing Tapered Roller Bearing With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT BEARING REMOVAL/INSTALLATION

Special Tools Required

- Driver, 40 mm I.D. 07746-0030100
- Attachment, 35 mm I.D. 07746-0030400

1. Remove the tapered roller bearing (A) from the transfer output shaft (B) with a bearing separator (C) and a press. Place a shaft protector (D) between the transfer output shaft and the press to prevent damaging the transfer output shaft.

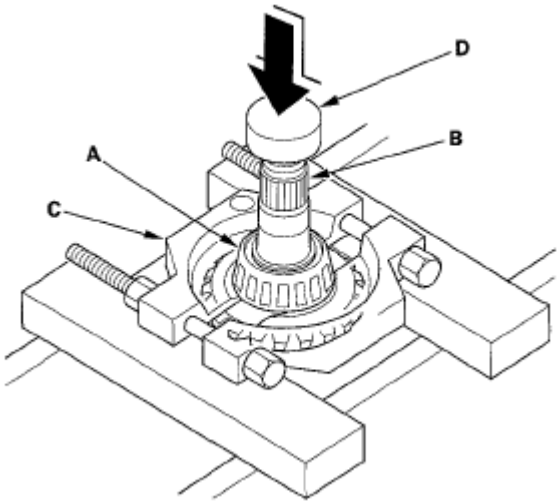


Fig. 596: Placing Shaft Protector Between Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 35 mm thrust shim (A) on the transfer output shaft (B).

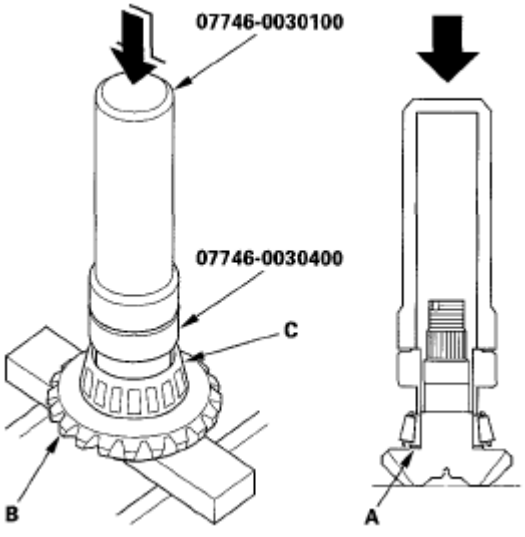


Fig. 597: Identifying Tapered Roller Bearing And Transfer Output Shaft With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the tapered roller bearing (C) on the transfer output shaft with the 40 mm driver, 35 mm

attachment, and a press.

TRANSFER HOUSING TAPERED ROLLER BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Oil seal driver attachment 07947-SD90101
- Bearing installer attachment 07KAF-PS30120
- Bearing installer attachment 07LAF-PZ70110
- Installer shaft, 14 x 165 mm 07JAF-SJ80110
- Installer nut, 14 mm 07JAF-SJ80120

NOTE: Replace the bearing with a new one whenever the outer race is replaced.

1. Remove the 57 mm bearing outer race (A), 62 mm bearing outer race (B), and 50.3 mm bearing outer race (C) from the transfer housing by heating the transfer housing to about 212°F (100°C) with a heat gun. Do not heat the housing more than 212°F (100°C). Some 57 mm outer races are press-fitted in the transfer housing.

   Bearing Outer Race Locations

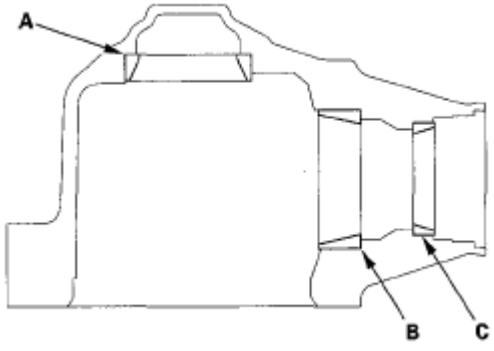


   Fig. 598: Identifying Bearing Outer Race Location
   Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 57 mm bearing outer race (A) in the housing (B) with the driver and oil seal driver attachment.

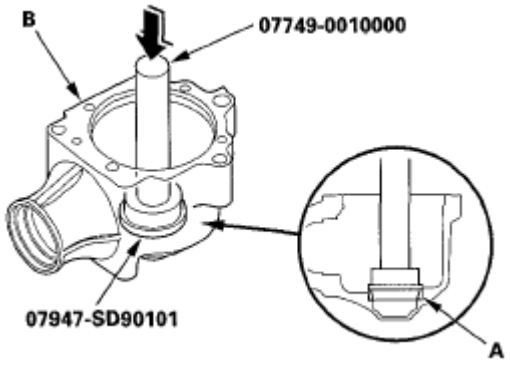


Fig. 599: Identifying Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the 62 mm bearing outer race and 50.3 mm bearing outer race in the housing with the installer nuts, installer shaft, and bearing installer attachments.

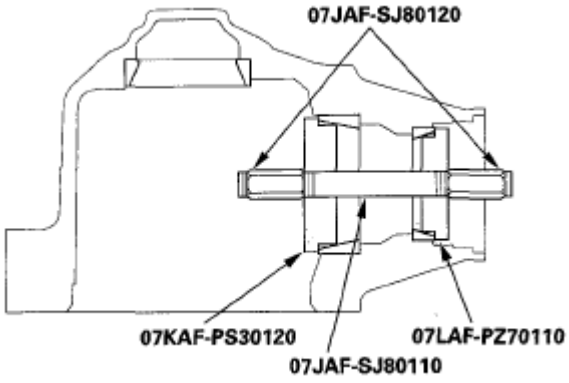


Fig. 600: Identifying Installer Nuts, Installer Shaft, And Bearing Installer Attachments
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

Special Tools Required

- Driver, 40 mm I.D. 07746-0030100
- Attachment, 35 mm I.D. 07746-0030400
- Driver 07749-0010000
- Oil seal driver attachment 07JAD-PH80101
- Companion flange holder 07RAB-TB4010A or 07RAB-TB4010B
- Holder handle 07JAB-001020A
- Attachment, 72 x 75 mm 07746-0010600

NOTE:

- **While reassembling the transfer assembly:**

- Check and adjust the transfer gear tooth contact.
- Measure and adjust the transfer gear backlash.
- Check and adjust the tapered roller bearing starting torque.

- **Coat all parts with ATF during reassembly.**
- **Replace the tapered roller bearing and the bearing outer race as a set if either part is replaced.**
- **Replace the transfer drive gear and the transfer output shaft as a set if either part is replaced.**

1. Select the 35 mm thrust shim if the transfer output shaft is replaced. Calculate the thickness of the 35 mm thrust shim using the formula, and select the shim from the table.

NOTE: The number on the transfer output shaft is shown in 1/100 mm.

FORMULA: $X = \frac{A}{100} - \frac{B}{100} + C$

Fig. 601: Identifying Calculate Formula
Courtesy of AMERICAN HONDA MOTOR CO., INC.

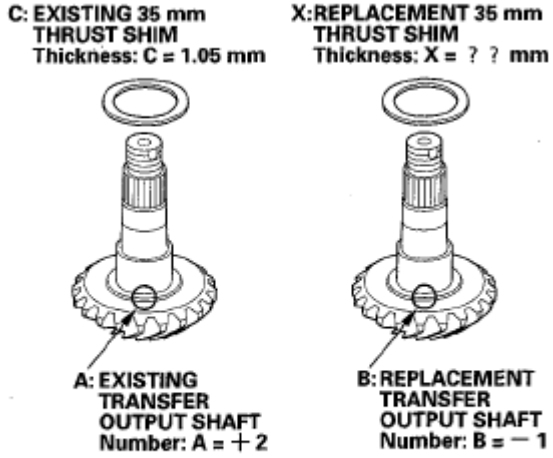
A: Number on the existing transfer output shaft

B: Number on the replacement transfer output shaft

C: Thickness of the existing 35 mm thrust shim

X: Thickness needed for the replacement 35 mm thrust shim

Example



$$X = \frac{A}{100} - \frac{B}{100} + C = \frac{2}{100} - \frac{-1}{100} + 1.05$$

$$= 0.02 + 0.01 + 1.05 = 1.08 \text{ mm}$$

Fig. 602: Identifying Thrust Shim Thickness Calculate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Select No. M 35 mm thrust shim of 1.08 mm in this example.

THRUST SHIM, 35 mm

THRUST SHIM THICKNESS SPECIFICATION

Shim No.	Part Number	Thickness
A	41361-PS3-000	0.72 mm (0.028 in.)
B	41362-PS3-000	0.75 mm (0.030 in.)
C	41363-PS3-000	0.78 mm (0.031 in.)
D	41364-PS3-000	0.81 mm (0.032 in.)
E	41365-PS3-000	0.84 mm (0.033 in.)
F	41366-PS3-000	0.87 mm (0.034 in.)
G	41367-PS3-000	0.90 mm (0.035 in.)
H	41368-PS3-000	0.93 mm (0.037 in.)
I	41369-PS3-000	0.96 mm (0.038 in.)
J	41370-PS3-000	0.99 mm (0.039 in.)
K	41371-PS3-000	1.02 mm (0.040 in.)
L	41372-PS3-000	1.05 mm (0.041 in.)
M	41373-PS3-000	1.08 mm (0.043 in.)
N	41374-PS3-000	1.11 mm (0.044 in.)

2. Select the 35 mm thrust shim if the tapered roller bearing on the transfer output shaft is replaced. Measure the thickness of the replacement bearing and the existing bearing, and calculate the difference of the bearing thickness. Adjust the thickness of the existing 35 mm thrust shim by the amount of the difference in bearing thickness, and select the replacement 35 mm thrust shim from the table.
3. Install the 35 mm thrust shim (A) on the transfer output shaft (B), then install the tapered roller bearing (C) with the 40 mm driver, 35 mm attachment, and a press.

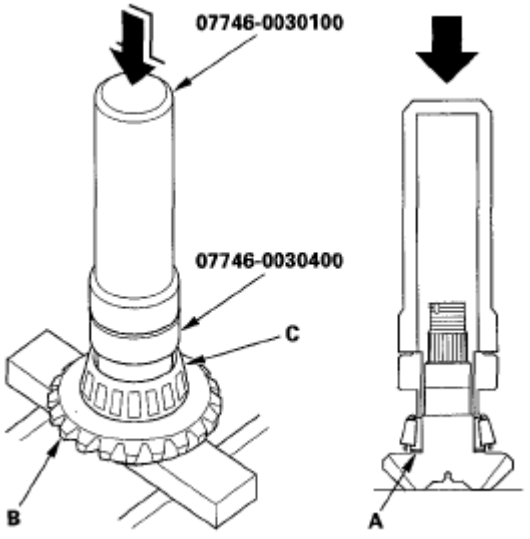


Fig. 603: Pressing Tapered Roller Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Place the tapered roller bearing (A) on the bearing outer race of the companion flange side of the transfer housing.

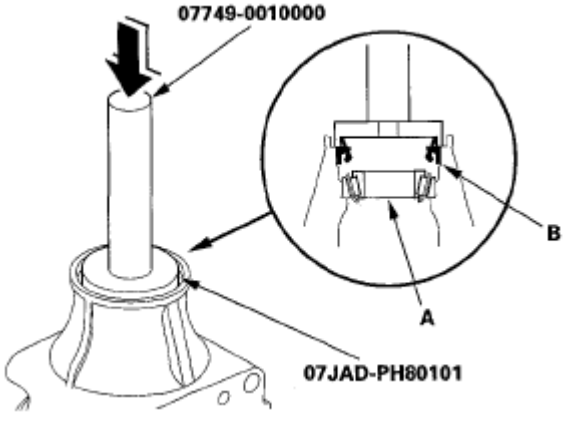


Fig. 604: Placing Tapered Roller Bearing On Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new oil seal (B) on the transfer housing with the driver and the oil seal driver attachment.
6. Install the transfer output shaft,(A) in the transfer housing (B). Do not install the transfer spacer on the transfer output shaft.

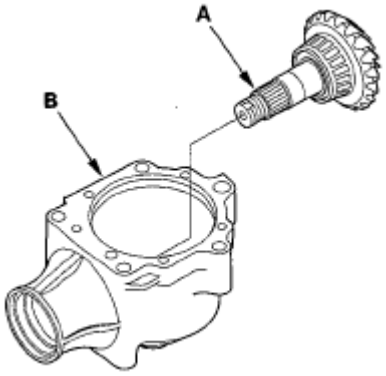


Fig. 605: Identifying Transfer Output Shaft And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the companion flange (A), conical spring washer (B), and locknut (C) on the transfer output shaft (D). Do not install the O-ring and back-up ring.

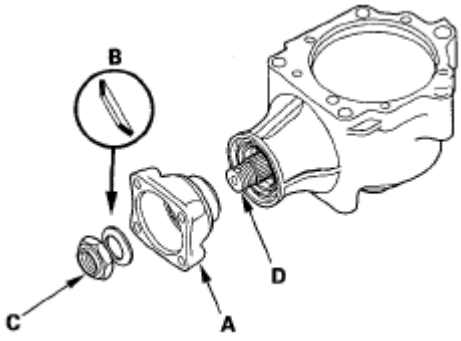


Fig. 606: Identifying Companion Flange, Conical Spring Washer And Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

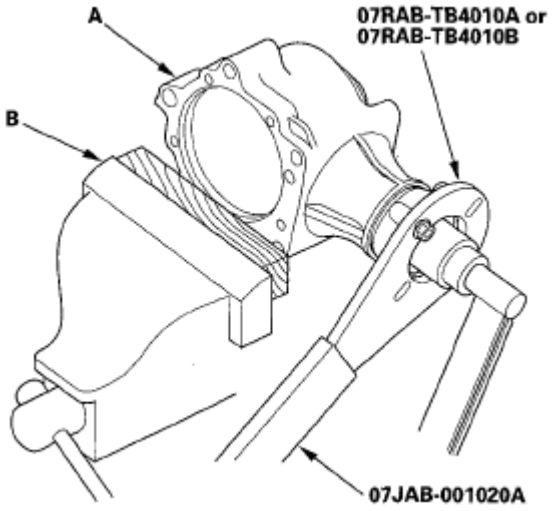


Fig. 607: Securing Transfer Housing In Bench Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the companion flange holder and holder handle on the companion flange.
10. Tighten the locknut while measuring the starting torque so the starting torque is within 0.98- 1.39 N.m (10.0-14.2 kgf.cm, 8.7-12.3 lbf.in.). Do not stake the locknut in this step. Remove the companion flange holder and the holder handle.
11. Install the transfer shaft (A) in the transfer holder (B), and install the transfer drive gear (C), transfer collar (D), 25 mm thrust shim (E), tapered roller bearing (F), conical spring washer (G), and locknut (H).

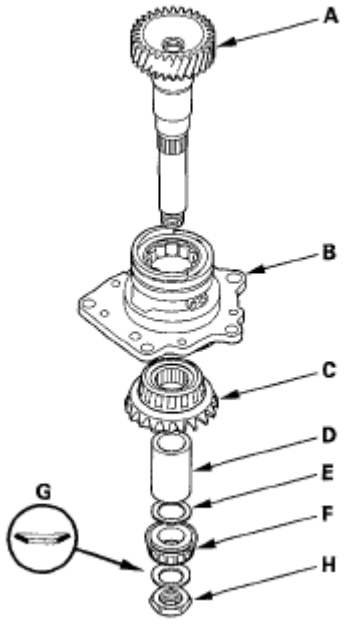


Fig. 608: Identifying Transfer Drive Gear, Transfer Collar, Thrust Shim, And Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Put a 14 mm hex wrench (A) in the transfer shaft (B), then secure the hex wrench in a bench vise.

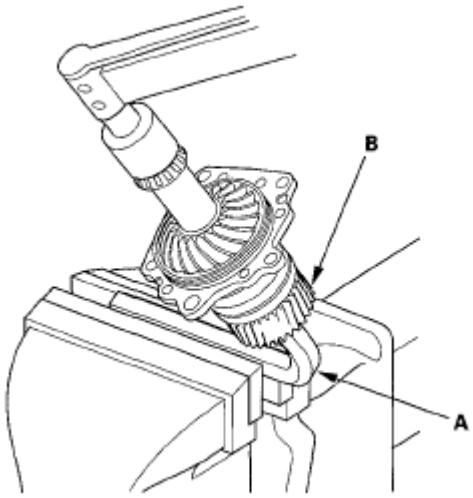


Fig. 609: Putting Wrench In Transfer Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Tighten the locknut 118 N.m (12.0 kgf.m, 86.8 lbf.ft). Do not stake the locknut in this step.
14. Apply Prussian Blue to both sides of the transfer drive gear teeth lightly and evenly.
15. Temporarily install the transfer holder (A) and dowel pin (B) without O-ring, and tighten the bolts.

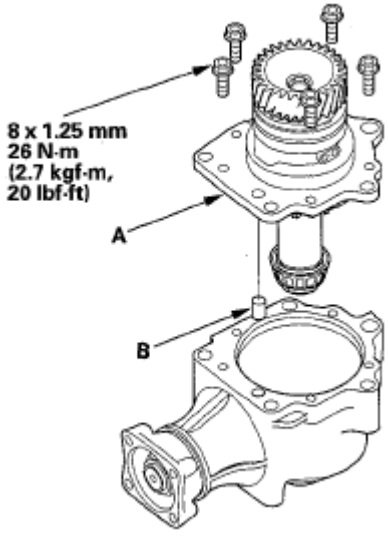


Fig. 610: Identifying Transfer Holder And Dowel Pin With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Rotate the companion flange in both directions until the transfer gears rotate one full turn in both directions.
17. Set a dial indicator (A) on the companion flange (B).

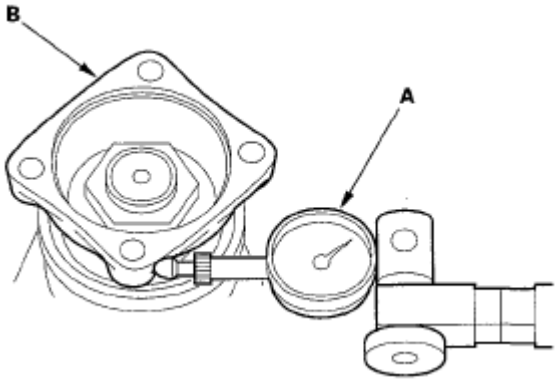


Fig. 611: Measuring Transfer Gear Backlash
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Measure the transfer gear backlash.

    Standard: 0.06-0.16 mm (0.002-0.006 in.)

19. Remove the transfer holder, and check the transfer drive gear tooth contact pattern.

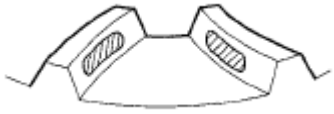


Fig. 612: Correct Tooth Contact Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

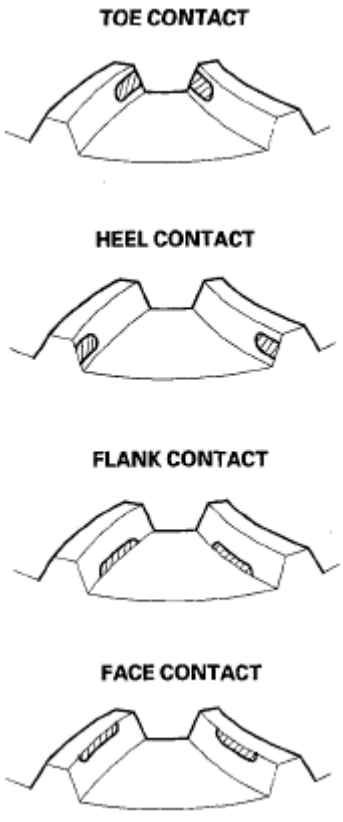


Fig. 613: Incorrect Tooth Contact Patterns
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. If the backlash measurement is out of standard, adjust the backlash with the 35 mm thrust shim and recheck. Do not use more than two 35 mm thrust shims to adjust the backlash.
21. If the transfer gear tooth contact is incorrect, adjust the tooth contact with the 25 mm or 35 mm thrust shim. Do not use more than two of each thrust shim to adjust the tooth contact.
    - Toe Contact

      Use a thinner 35 mm thrust shim to move the transfer output shaft away from the transfer drive gear. Because this movement causes the transfer gear backlash to change, move the transfer drive gear toward the transfer output shaft to adjust the transfer gear backlash as follows:

        - Reduce the thickness of the 25 mm thrust shim.
        - Increase the thickness of the 75 mm thrust shim by the amount you reduced the thickness of the 25 mm thrust shim.
    - Heel Contact

      Use a thicker 35 mm thrust shim to move the transfer output shaft toward the transfer drive gear. Because this movement causes the transfer gear backlash to change, move the transfer drive gear away from the transfer output shaft to adjust the transfer gear backlash as follows:

        - Increase the thickness of the 25 mm thrust shim.

- Reduce the thickness of the 75 mm thrust shim by the amount you increased the 25 mm thrust shim.

- Flank Contact

  Use a thicker 25 mm thrust shim to move the transfer drive gear away from the transfer output shaft. Face contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Toe Contact.

- Face Contact

  Use a thinner 25 mm thrust shim to move the transfer drive gear toward the transfer output shaft. Flank contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Heel Contact.

THRUST SHIM, 25 mm

THRUST SHIM THICKNESS SPECIFICATION

Shim No.	Part Number	Thickness
1.70	29411-P1C-000	1.70 mm (0.067 in.)
1.73	29412-P1C-000	1.73 mm (0.068 in.)
1.76	29413-P1C-000	1.76 mm (0.069 in.)
1.79	29414-P1C-000	1.79 mm (0.070 in.)
1.82	29415-P1C-000	1.82 mm (0.072 in.)
1.85	29416-P1C-000	1.85 mm (0.073 in.)
1.88	29417-P1C-000	1.88 mm (0.074 in.)
1.91	29418-P1C-000	1.91 mm (0.075 in.)
1.94	29419-P1C-000	1.94 mm (0.076 in.)
1.97	29420-P1C-000	1.97 mm (0.078 in.)
2.00	29421-P1C-000	2.00 mm (0.079 in.)
2.03	29422-P1C-000	2.03 mm (0.080 in.)
2.06	29423-P1C-000	2.06 mm (0.081 in.)
2.09	29424-P1C-000	2.09 mm (0.082 in.)
2.12	29425-P1C-000	2.12 mm (0.083 in.)
2.15	29426-P1C-000	2.15 mm (0.085 in.)
2.18	29427-P1C-000	2.18 mm (0.086 in.)
2.21	29428-P1C-000	2.21 mm (0.087 in.)
2.24	29429-P1C-000	2.24 mm (0.088 in.)

22. Remove the transfer holder (A) from the transfer housing (B) after adjusting the transfer gear backlash or transfer gear tooth contact.

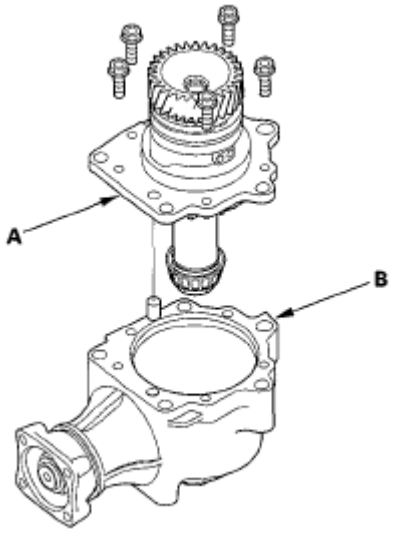


Fig. 614: Identifying Transfer Holder And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

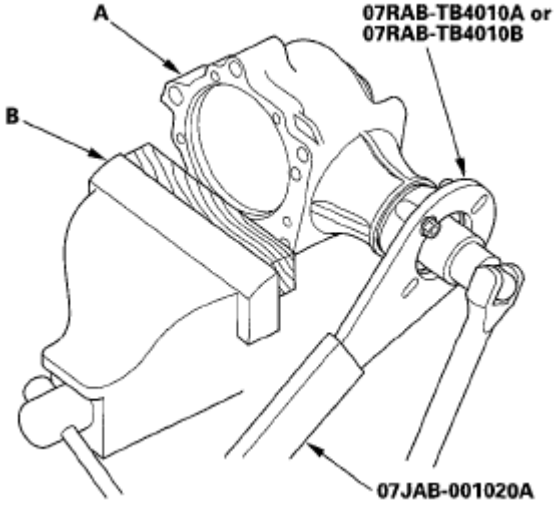


Fig. 615: Securing Transfer Housing In Bench Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the companion flange holder and holder handle on the companion flange, then loosen the locknut. Remove the companion flange holder and the holder handle.
25. Remove the locknut (A), conical spring washer (B), and companion flange (C) from the transfer output shaft (D).

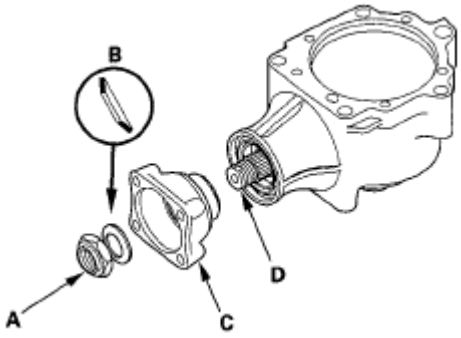


Fig. 616: Identifying Locknut, Conical Spring Washer And Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the transfer output shaft (A) from the transfer housing (B).

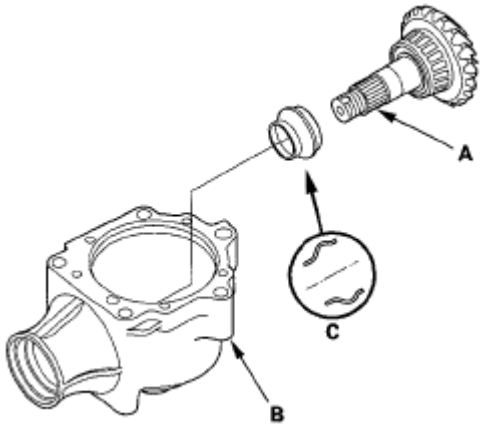


Fig. 617: Identifying Transfer Output Shaft And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Install the new transfer spacer (C) on the transfer output shaft in the direction shown, and install them in the transfer housing.
28. Coat the threads of the locknut and transfer output shaft with ATF.
29. Install the companion flange (A), new O-ring (B), back-up ring (C), new conical spring washer (D), and new locknut (E) on the transfer output shaft (F). Install the conical spring washer in the direction shown.

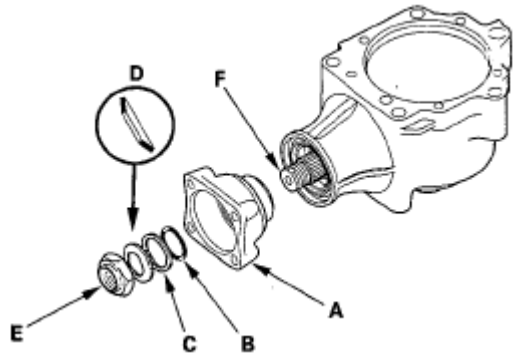


Fig. 618: Identifying Companion Flange, O-Ring, Back-Up Ring, Conical Spring Washer And Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

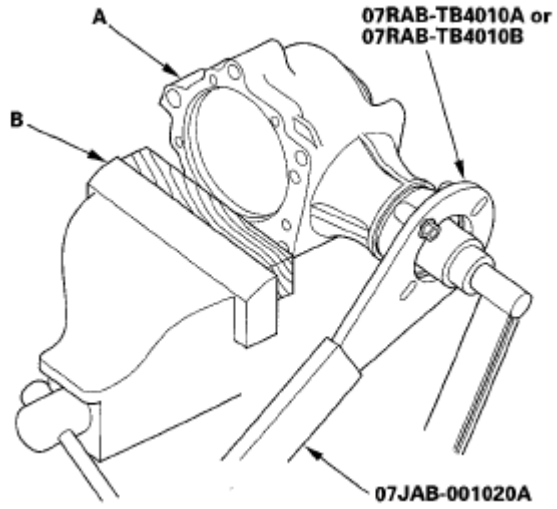


Fig. 619: Securing Transfer Housing In Bench Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the companion flange holder and holder handle on the companion flange.
32. Tighten the locknut while measuring the starting torque of the transfer output shaft.

Starting Torque:

0.98-1.39 N.m (10.0-14.2 kgf.cm, 8.7-12.3 lbf.in.)

Tightening Torque:

132-260 N.m (13.5-26.5 kgf.m, 97.6-192 lbf.ft)

NOTE:

- **Rotate the companion flange several turns to seat the tapered roller bearings, then measure the starting torque.**
- **If the starting torque exceeds 1.39 N.m (14.2 kgf.cm, 12.3 lbf.in.), replace the transfer spacer and reassemble the parts. Do not adjust the starting torque with the locknut loose.**
- **If the tightening torque exceeds 260 N.m (26.5 kgf.m, 192 lbf.ft), replace the transfer spacer and reassemble the parts.**

33. Remove the companion flange holder and holder handle.
34. Stake the locknut into the transfer output shaft in depth (A) of 0.7-1.2 mm (0.03-0.05 in.) using a 3.5 mm punch (B).

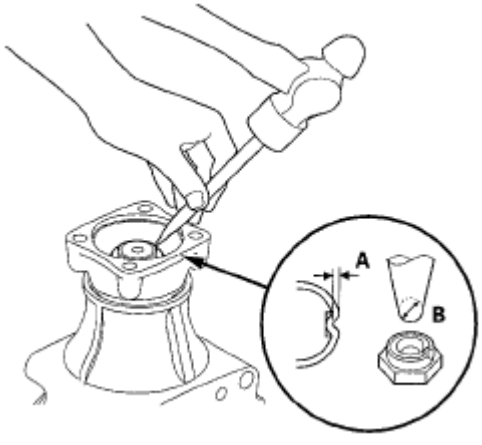


Fig. 620: Staking Locknut Into Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Temporarily install the transfer holder (A) and dowel pin (B) without the O-ring, and tighten the bolts.

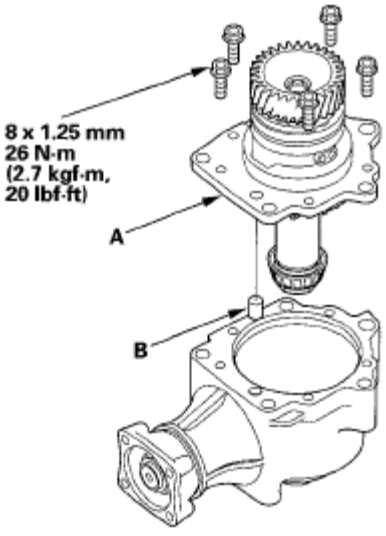


Fig. 621: Identifying Transfer Holder And Dowel Pin With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

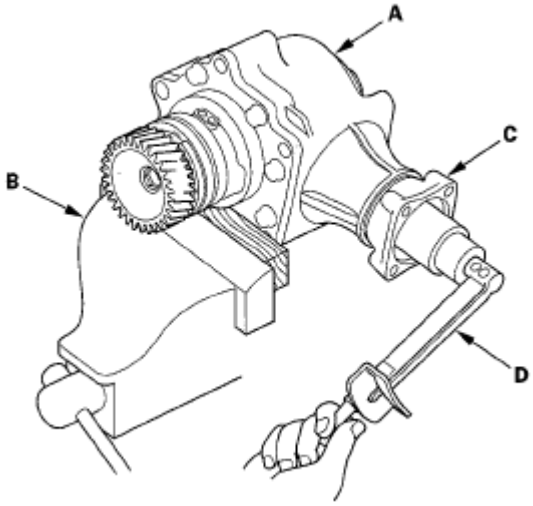


Fig. 622: Measuring Starting Torque Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Rotate the companion flange several times to seat the tapered roller bearings.
38. Measure the starting torque at the companion flange (C) using a torque wrench (D).

    Standard: 2.75-4.22 N.m

    (28.1-43.1 kgf.cm, 24.4-37.4 lbf.in.)

39. Remove the transfer holder from the transfer housing.
40. If the measurement is within the standard, go to step 53.
41. If the measurement is out of standard, put a 14 mm hex wrench (A) in the transfer shaft (B), then secure the hex wrench in a bench vise.

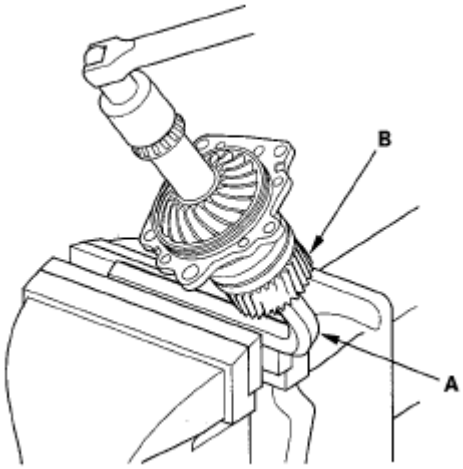


Fig. 623: Securing Hex Wrench In Bench Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Loosen the locknut.
43. Remove the locknut (A) and conical spring washer (B).

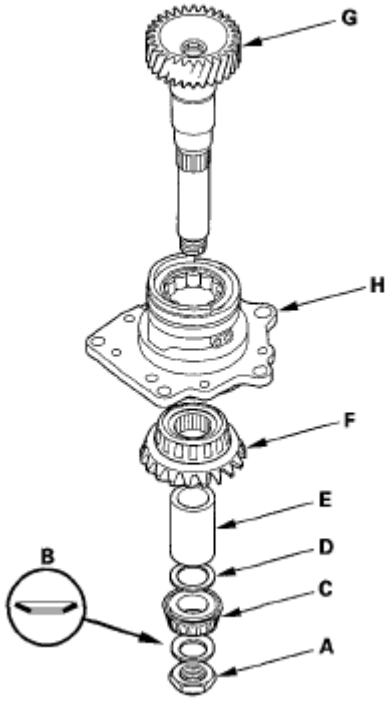


Fig. 624: Identifying Tapered Roller Bearing, Thrust Shim, Transfer Collar And Transfer Drive Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Remove the tapered roller bearing (C), 25 mm thrust shim (D), transfer collar (E), transfer drive gear (F), and transfer shaft (G) from the transfer holder (H).

45. Remove the tapered roller bearing outer race (A) and the 75 mm thrust shim (B) from the transfer holder (C).

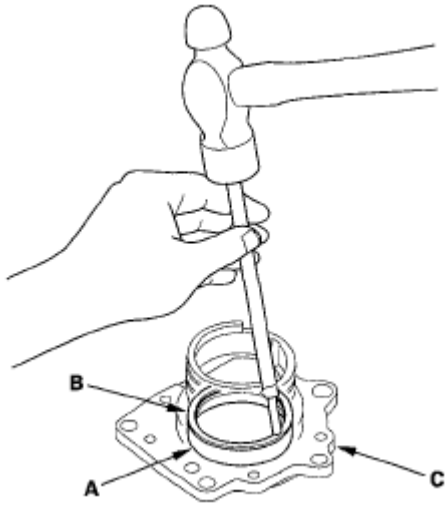


Fig. 625: Tapping Tapered Roller Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Measure the thickness of the 75 mm thrust shim, and select the new 75 mm thrust shim.

THRUST SHIM, 75 mm

THRUST SHIM THICKNESS SPECIFICATION

Shim No.	Part Number	Thickness
AA	41401-PGV-000	1.52 mm (0.060 in.)
AB	41402-PGV-000	1.55 mm (0.061 in.)
AC	41403-PGV-000	1.58 mm (0.062 in.)
AD	41404-PGV-000	1.61 mm (0.063 in.)
AE	41405-PGV-000	1.64 mm (0.065 in.)
B	41402-PW8-010	1.67 mm (0.066 in.)
C	41403-PW8-010	1.70 mm (0.067 in.)
D	41404-PW8-010	1.73 mm (0.068 in.)
E	41405-PW8-010	1.76 mm (0.069 in.)
F	41406-PW8-010	1.79 mm (0.070 in.)
G	41407-PW8-010	1.82 mm (0.072 in.)
H	41408-PW8-010	1.85 mm (0.073 in.)
I	41409-PW8-010	1.88 mm (0.074 in.)
J	41410-PW8-010	1.91 mm (0.075 in.)
K	41411-PW8-010	1.94 mm (0.076 in.)
L	41412-PW8-010	1.97 mm (0.078 in.)
M	41413-PW8-010	2.00 mm (0.079 in.)

N	41414-PW8-010	2.03 mm (0.080 in.)
O	41415-PW8-010	2.06 mm (0.081 in.)
P	41416-PW8-010	2.09 mm (0.082 in.)
Q	41417-PW8-010	2.12 mm (0.083 in.)
R	41418-PW8-010	2.15 mm (0.085 in.)
S	41419-PW8-010	2.18 mm (0.086 in.)
T	41420-PW8-010	2.21 mm (0.087 in.)
U	41421-PW8-010	2.24 mm (0.088 in.)
V	41422-PW8-010	2.27 mm (0.089 in.)
W	41423-PW8-010	2.30 mm (0.091 in.)
X	41424-PW8-010	2.33 mm (0.092 in.)
Y	41425-PW8-010	2.36 mm (0.093 in.)
Z	41426-PW8-010	2.39 mm (0.094 in.)
ZA	41406-PGV-000	2.42 mm (0.095 in.)
ZB	41407-PGV-000	2.45 mm (0.096 in.)
ZC	41408-PGV-000	2.48 mm (0.098 in.)
ZD	41409-PGV-000	2.51 mm (0.099 in.)
ZE	41410-PGV-000	2.54 mm (0.100 in.)
ZF	41411-PGV-000	2.57 mm (0.101 in.)
ZG	41412-PGV-000	2.60 mm (0.102 in.)
ZH	41413-PGV-000	2.63 mm (0.104 in.)
ZI	41414-PGV-000	2.66 mm (0.105 in.)

47. Install the new 75 mm thrust shim (A) in the transfer holder, then install the tapered roller bearing outer race (B) with the driver and the 72 x 75 mm attachment.

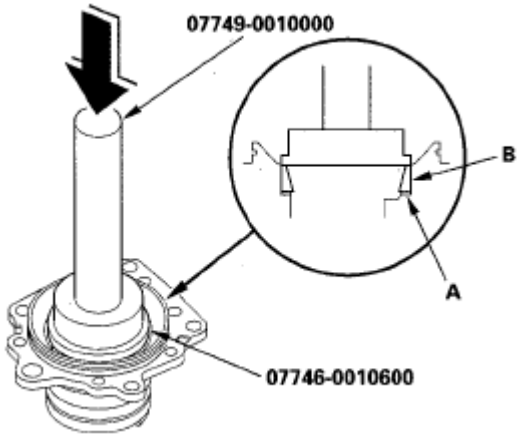


Fig. 626: Pressing Tapered Roller Bearing Outer Race With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Install the transfer shaft (A) in the transfer holder (B), and install the transfer drive gear (C), transfer

collar (D), 25 mm thrust shim (E), tapered roller bearing (F), conical spring washer (G), and locknut (H). Install the conical spring washer in the direction shown.

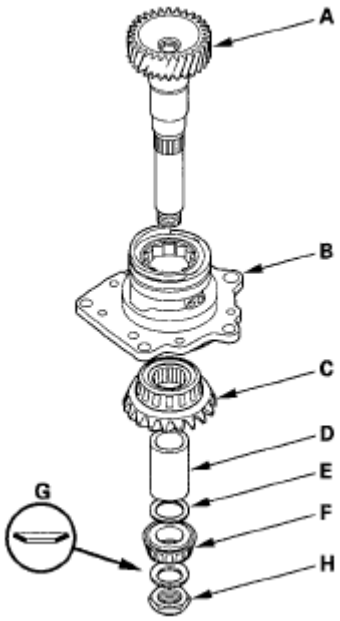


Fig. 627: Identifying Transfer Drive Gear, Transfer Collar, Thrust Shim And Tapered Roller Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Put a 14 mm hex wrench (A) in the transfer shaft (B), then secure the hex wrench in a bench vise.

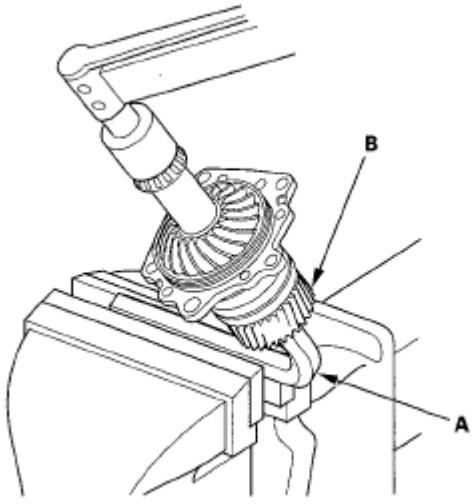


Fig. 628: Putting Hex Wrench In Transfer Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Tighten the locknut 118 N.m (12.0 kgf.m, 86.8 lbf.ft). Do not stake the locknut in this step.
51. Temporarily install the transfer holder (A) and dowel pin (B) without the O-ring, and tighten the bolts.

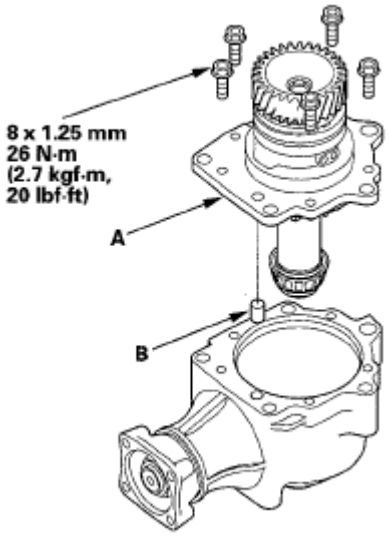


Fig. 629: Identifying Transfer Holder And Dowel Pin With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Rotate the companion flange several turns to seat the tapered roller bearings, and recheck the starting torque. Remove the transfer holder after adjusting the starting torque.
53. Stake the locknut into the transfer shaft in depth (A) of 0.7-1.2 mm (0.03-0.05 in.) using a 3.5 mm punch (B).

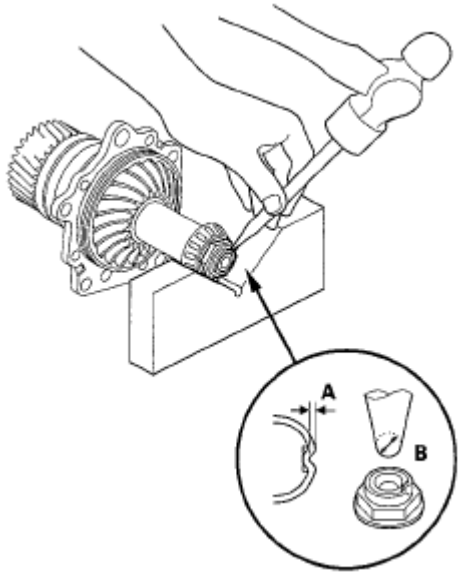


Fig. 630: Staking Locknut Into Transfer Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Install a new O-ring (A) on the transfer holder (B), then install the transfer holder with the dowel pin (C) on the transfer housing (D).

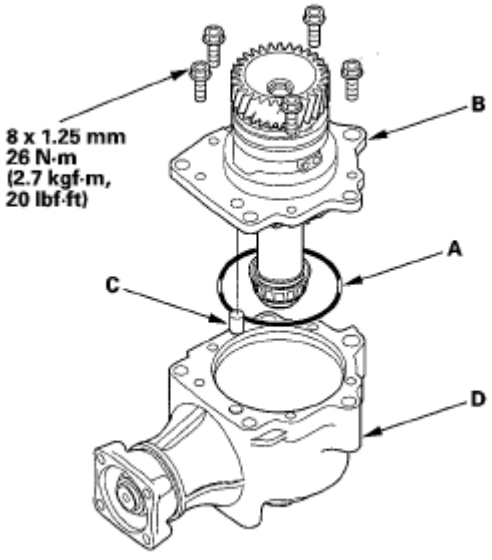


Fig. 631: Identifying Transfer Holder With Dowel Pin On Transfer Housing With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.