

TRANSMISSION

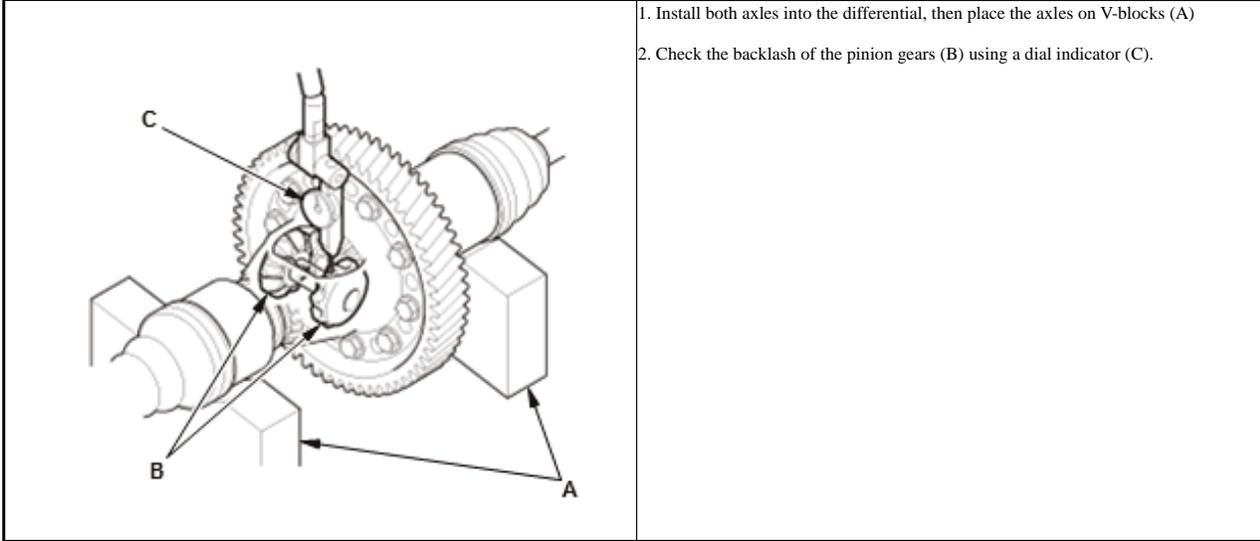
Continuously Variable Transmission (CVT) - Testing & Troubleshooting - HR-V

INSPECTION & ADJUSTMENT

CVT DIFFERENTIAL BACKLASH INSPECTION (CVT)

Inspection

1. Differential Backlash - Inspect



1. Install both axles into the differential, then place the axles on V-blocks (A)
2. Check the backlash of the pinion gears (B) using a dial indicator (C).

Standard:	0.05-0.15 mm (0.0020-0.0059 in)
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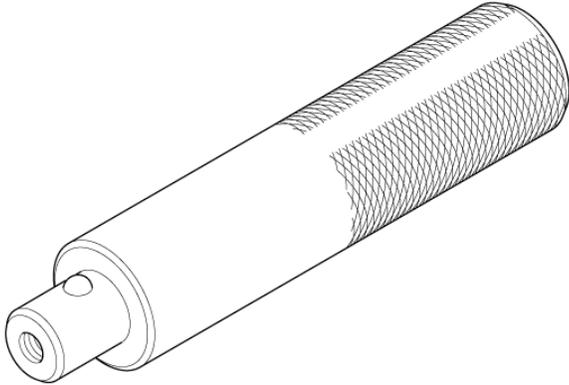
3. If the backlash is out of the standard, replace the differential carrier.

CVT DIFFERENTIAL CARRIER BEARING PRELOAD INSPECTION (CVT)

Special Tools Required

Image	Description/Tool Number
	Preload Inspection Tool 070AJ-5T0A100
	Bearing Driver Attachment, 62 x 68 mm 07746-0010500

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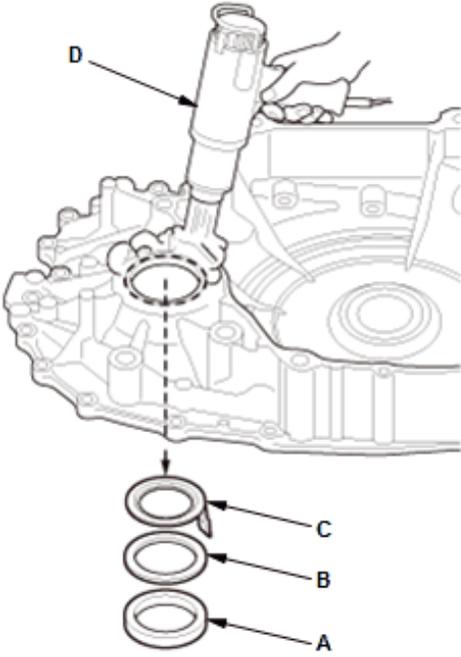
Image	Description/Tool Number
	Driver Handle, 15 x 135L 07749-0010000

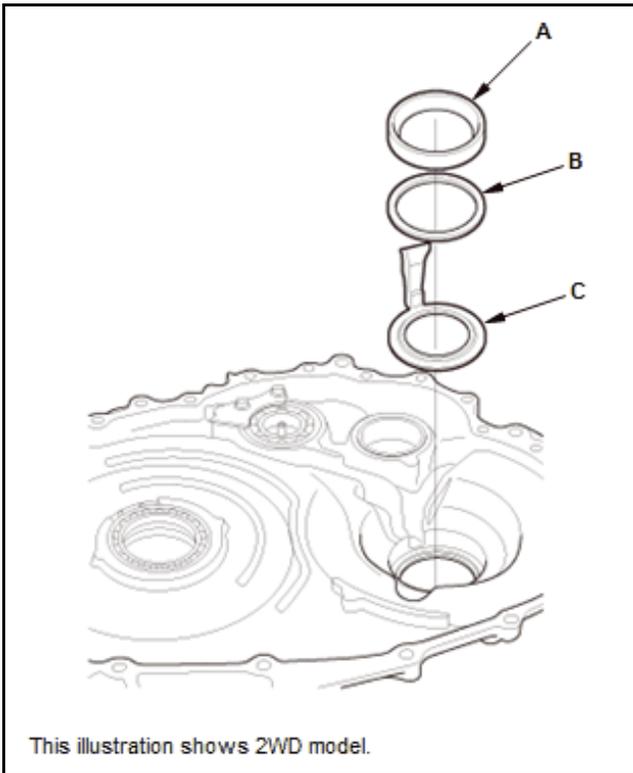
Inspection

NOTE:

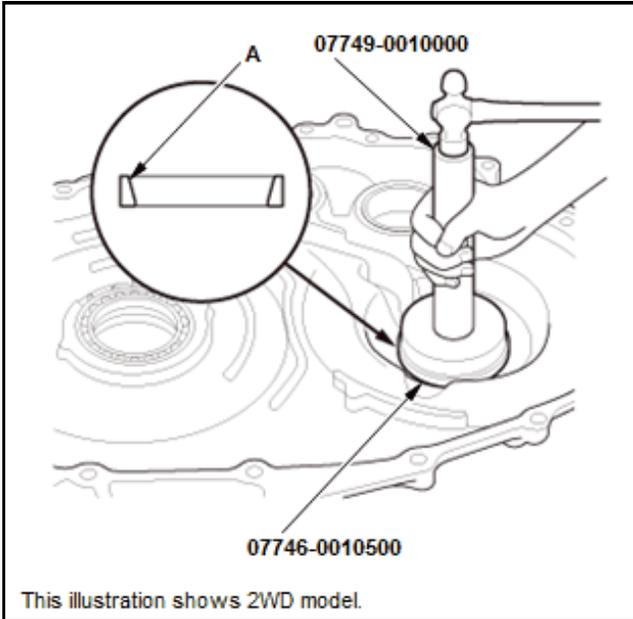
- If the transmission housing, the torque converter housing, the differential carrier, the carrier bearing/bearing outer race, or the thrust shim is replaced, the bearing preload must be adjusted.
- Apply a light coat of clean transmission fluid on all parts before installation.

1. Carrier Bearing Preload - Inspect

 <p>This illustration shows 2WD model.</p>	<p>1. Remove the carrier bearing outer race (A), the 68 mm thrust shim (B), and the oil guide plate (C) by heating the torque converter housing to about 212 Â°F (100 Â°C) using a heat gun (D).</p> <p>NOTE:</p> <ul style="list-style-type: none"> • Do not heat the torque converter housing more than 212 Â°F (100 Â°C). • Let the torque converter housing cool to room temperature before adjusting the bearing preload.
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2. Install the carrier bearing outer race (A), the 68 mm thrust shim (B), and the oil guide plate (C).



3. Drive the carrier bearing outer race (A) until it bottoms using the 15 x 135L driver handle and the 62 x 68 mm bearing driver attachment.

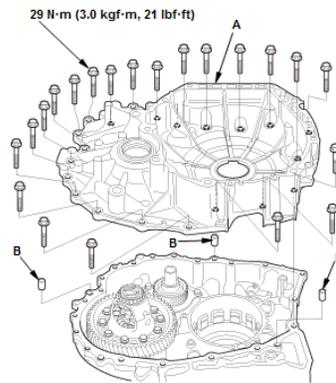
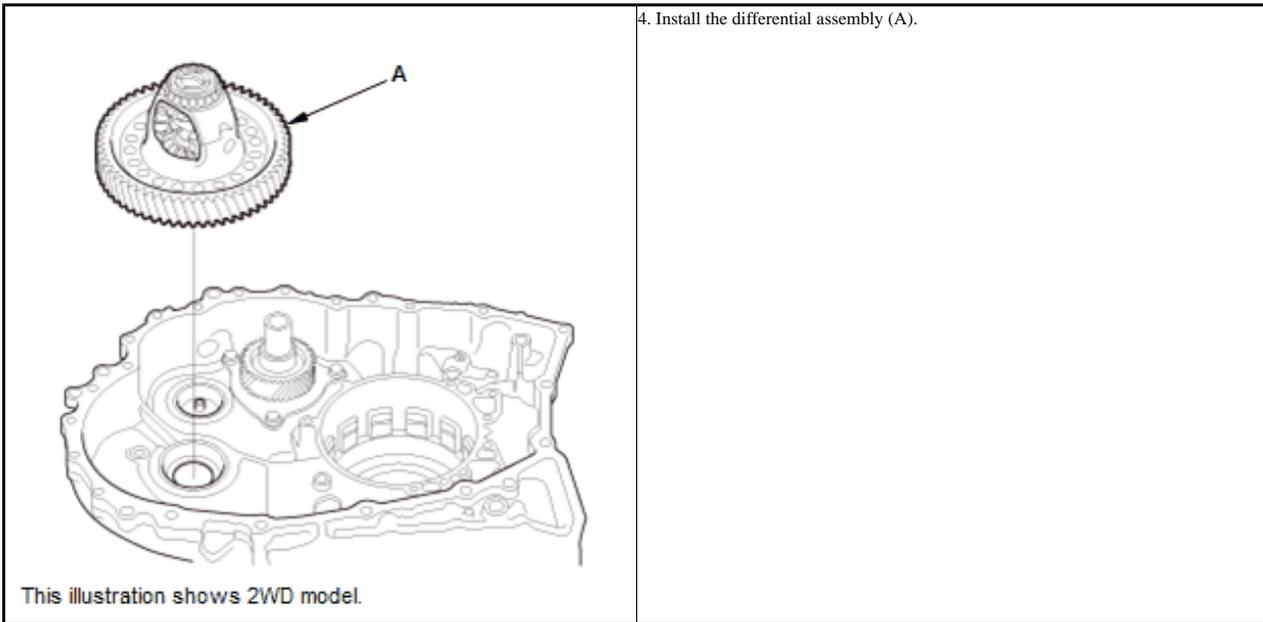


Fig. 1: Torque Converter Housing With Torque Specifications (2WD)
 Courtesy of HONDA, U.S.A., INC.

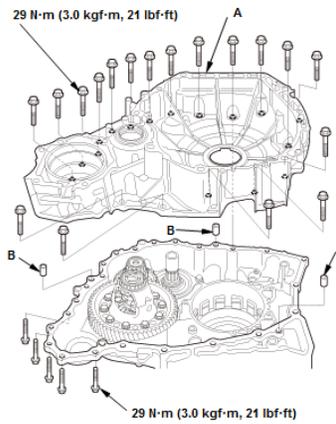
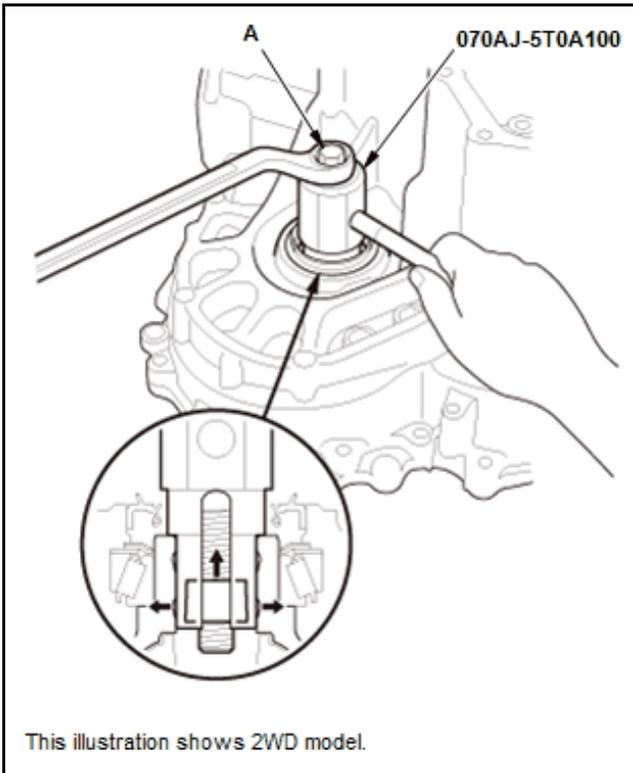
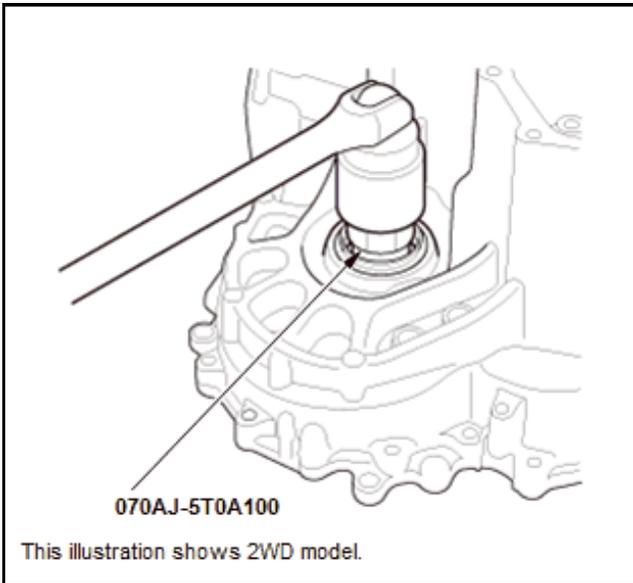


Fig. 2: Torque Converter Housing With Torque Specifications (AWD)
 Courtesy of HONDA, U.S.A., INC.

A	5. Install the torque converter housing (A) with the dowel pins (B), and tighten the bolts in a crisscross pattern in at least two steps.
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6. Install the preload inspection tool
 7. Press the preload inspection tool gradually by tightening the bolt (A) and fix it.

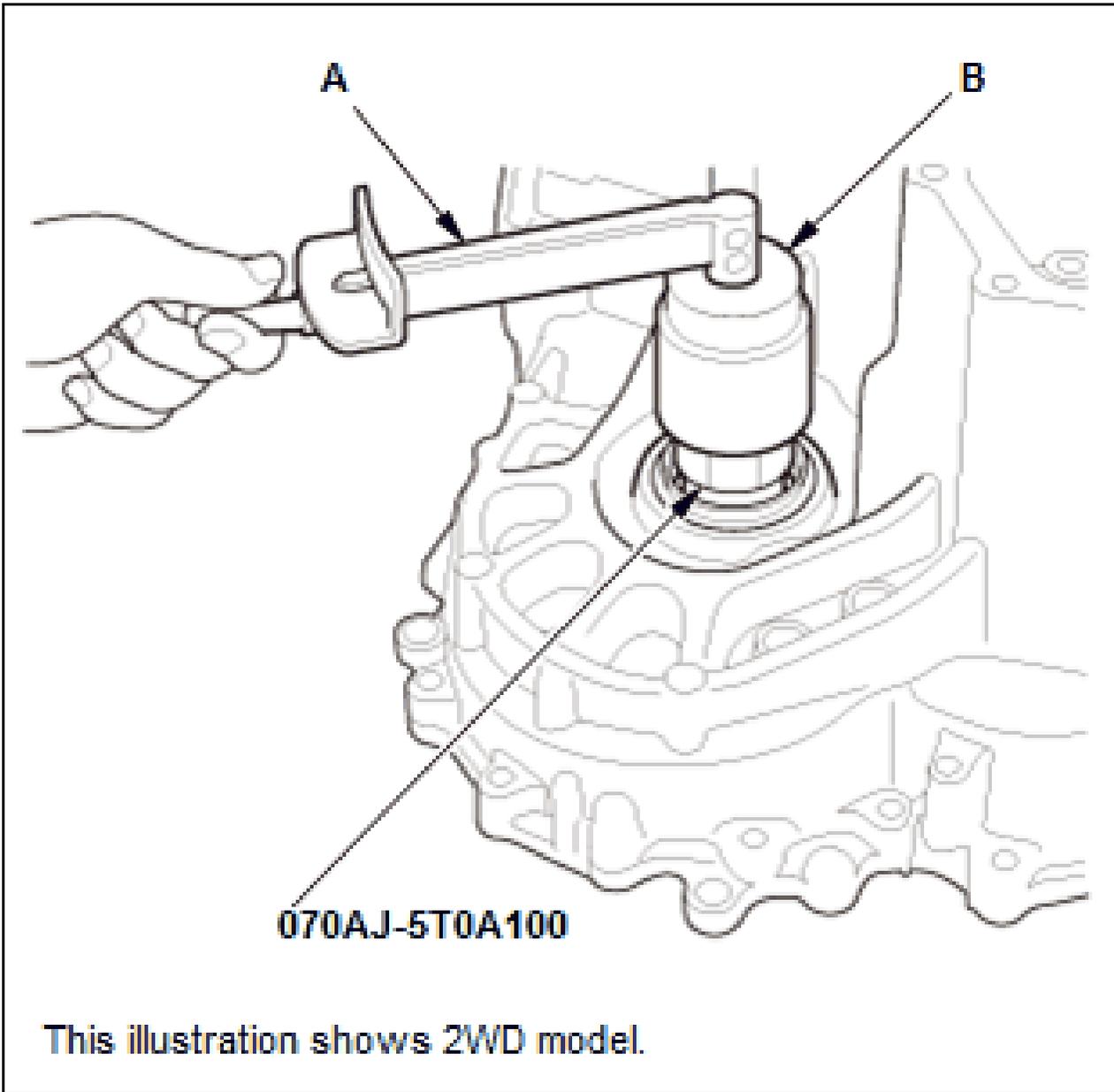


8. Rotate the differential assembly in both directions to seat the bearings.

9. Measure the starting torque of the differential assembly using the preload inspection tool, a torque wrench (A), and a socket (B).

NOTE: Measure the starting torque at normal room temperature in both directions.

Standard:	
New Bearing:	1.25-1.65 N.m (12.7-16.8 kgf.cm, 11.0-14.6 lbf.in)
Reused Bearing:	0.95-1.35 N.m (9.7-13.8 kgf.cm, 8.4-11.9 lbf.in)



10. If the measurement is out of the standard, remove the 68 mm thrust shim, and measure its thickness, then select a suitable 68 mm thrust shim.

NOTE:

- To increase the starting torque, increase thickness of the 68 mm thrust shim.
- To decrease the starting torque, decrease the thickness of the 68 mm thrust shim.
- Do not use more than two thrust shims to adjust the starting torque.

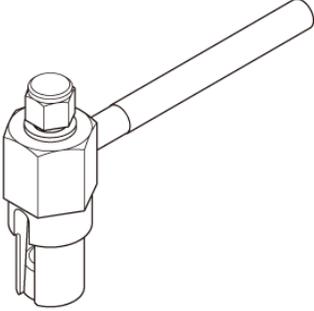
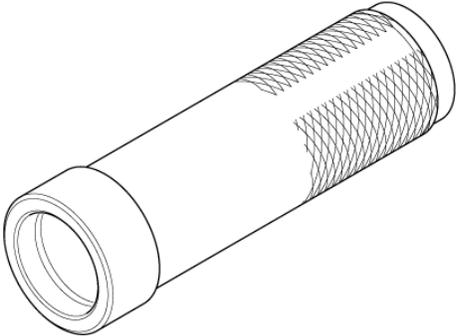
No.	Thickness
A	1.075 mm (0.04232 in)
B	1.100 mm (0.04331 in)
C	1.125 mm (0.04429 in)
D	1.150 mm (0.04528 in)
E	1.175 mm (0.04626 in)
F	1.200 mm (0.04724 in)
G	1.225 mm (0.04823 in)
H	1.250 mm (0.04921 in)
I	1.275 mm (0.05020 in)
J	1.300 mm (0.05118 in)
K	1.325 mm (0.05217 in)
L	1.350 mm (0.05315 in)
M	1.375 mm (0.05413 in)
N	1.400 mm (0.05512 in)
O	1.425 mm (0.05610 in)
P	1.450 mm (0.05709 in)
Q	1.475 mm (0.05807 in)

No.	Thickness
R	1.500 mm (0.05906 in)
S	1.525 mm (0.06004 in)
T	1.550 mm (0.06102 in)
U	1.575 mm (0.06201 in)
V	1.600 mm (0.06299 in)
W	1.625 mm (0.06398 in)
X	1.650 mm (0.06496 in)
Y	1.675 mm (0.06594 in)
Z	1.700 mm (0.06693 in)
0A	1.725 mm (0.06791 in)

11. Install a selected 68 mm thrust shim, then recheck the starting torque.

FINAL DRIVE SHAFT TAPERED ROLLER BEARING PRELOAD INSPECTION (CVT)

Special Tools Required

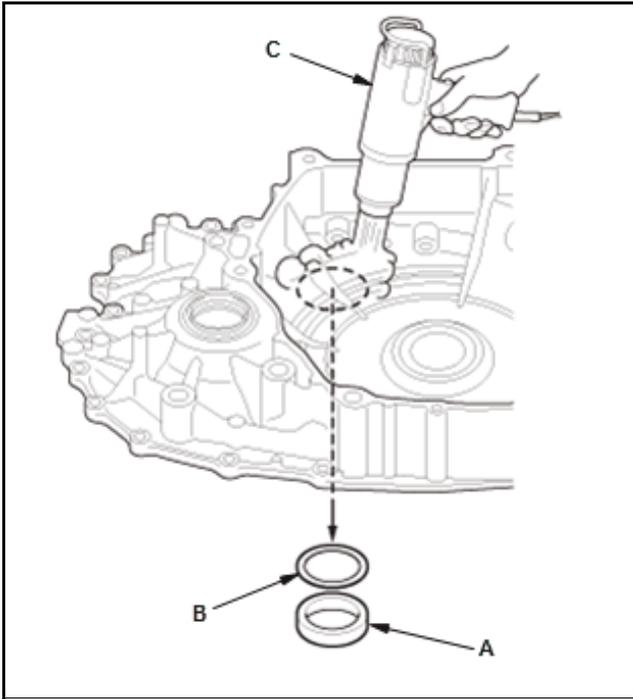
Image	Description/Tool Number
	Preload Inspection Tool 070AJ-5T0A100
	Driver Handle, 40 mm I.D. 07746-0030100

Inspection

NOTE:

- If the transmission housing, the torque converter housing, the final drive shaft, the tapered roller bearing/bearing outer race, or the thrust shim is replaced, the bearing preload must be adjusted.
- Apply a light coat of clean transmission fluid on all parts before installation.

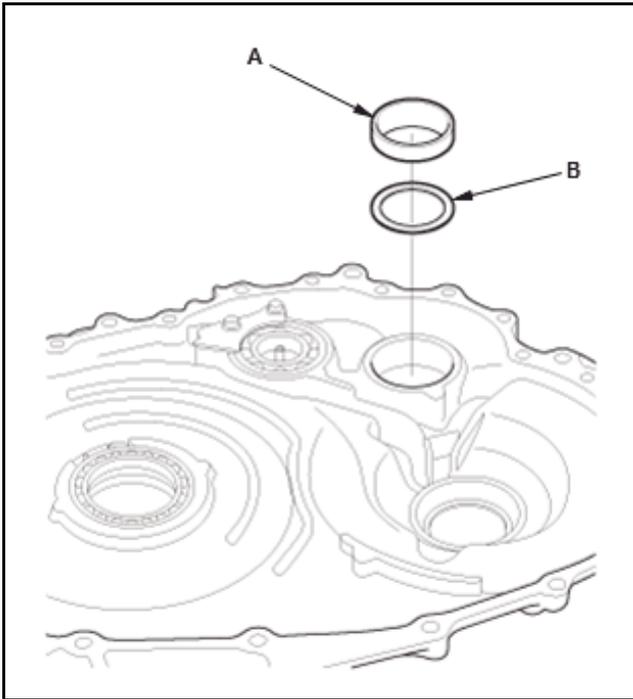
1. **Differential Carrier Bearing Preload - Inspect**
2. **Final Drive Shaft Tapered Roller Bearing Preload - Inspect**



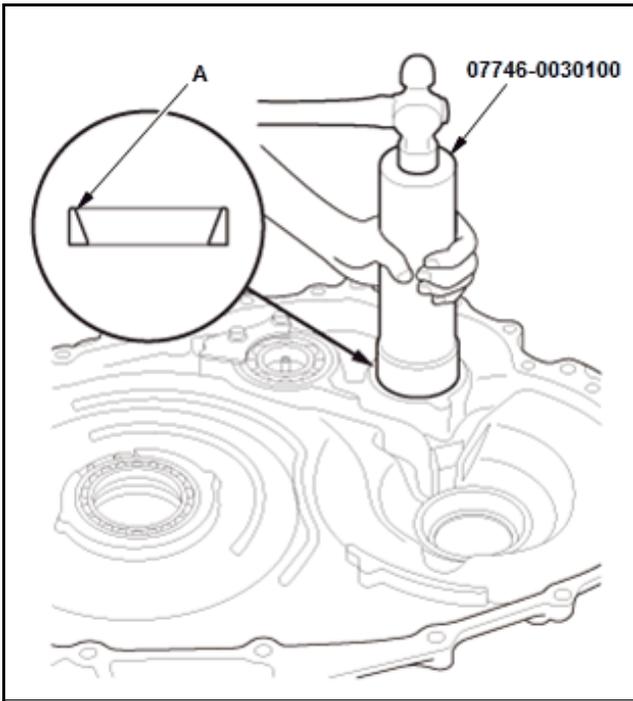
1. Remove the bearing outer race (A) and the 51 mm thrust shim (B) by heating the torque converter housing to about 212 Â°F (100 Â°C) using a heat gun (C).

NOTE:

- Do not heat the torque converter housing more than 212 Â°F (100 Â°C).
- Let the torque converter housing cool to room temperature before adjusting the bearing preload.

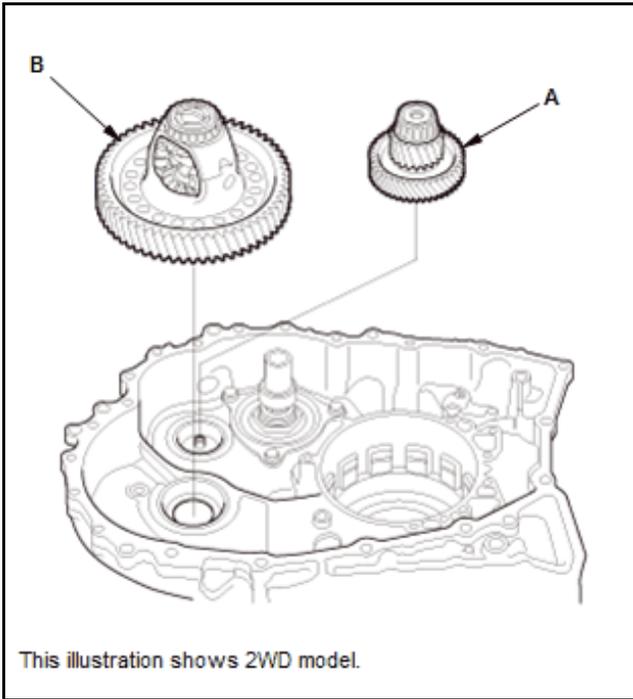


2. Install the bearing outer race (A) and the 51 mm thrust shim (B).



3. Drive the bearing outer race (A) until it bottoms using the 40 mm I.D. driver handle.

4. Remove the secondary drive gear .



5. Install the final drive shaft assembly (A) and the differential assembly (B).

This illustration shows 2WD model.

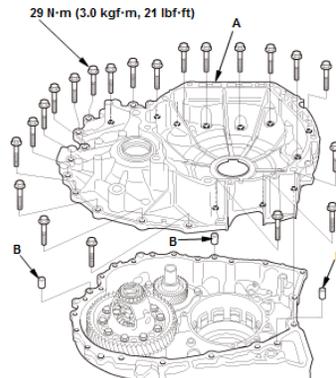


Fig. 3: Torque Converter Housing With Torque Specifications (2WD)
 Courtesy of HONDA, U.S.A., INC.

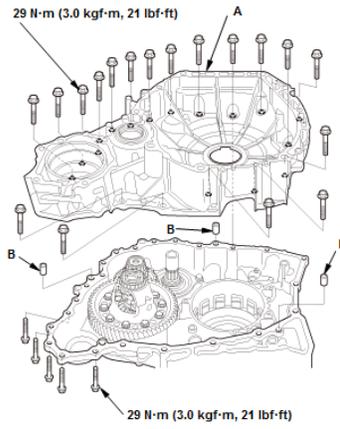
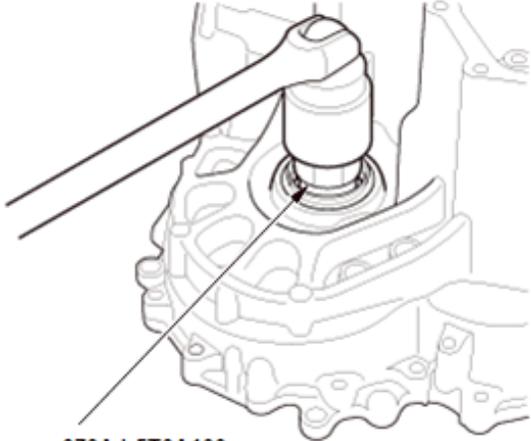


Fig. 4: Torque Converter Housing With Torque Specifications (AWD)
 Courtesy of HONDA, U.S.A., INC.

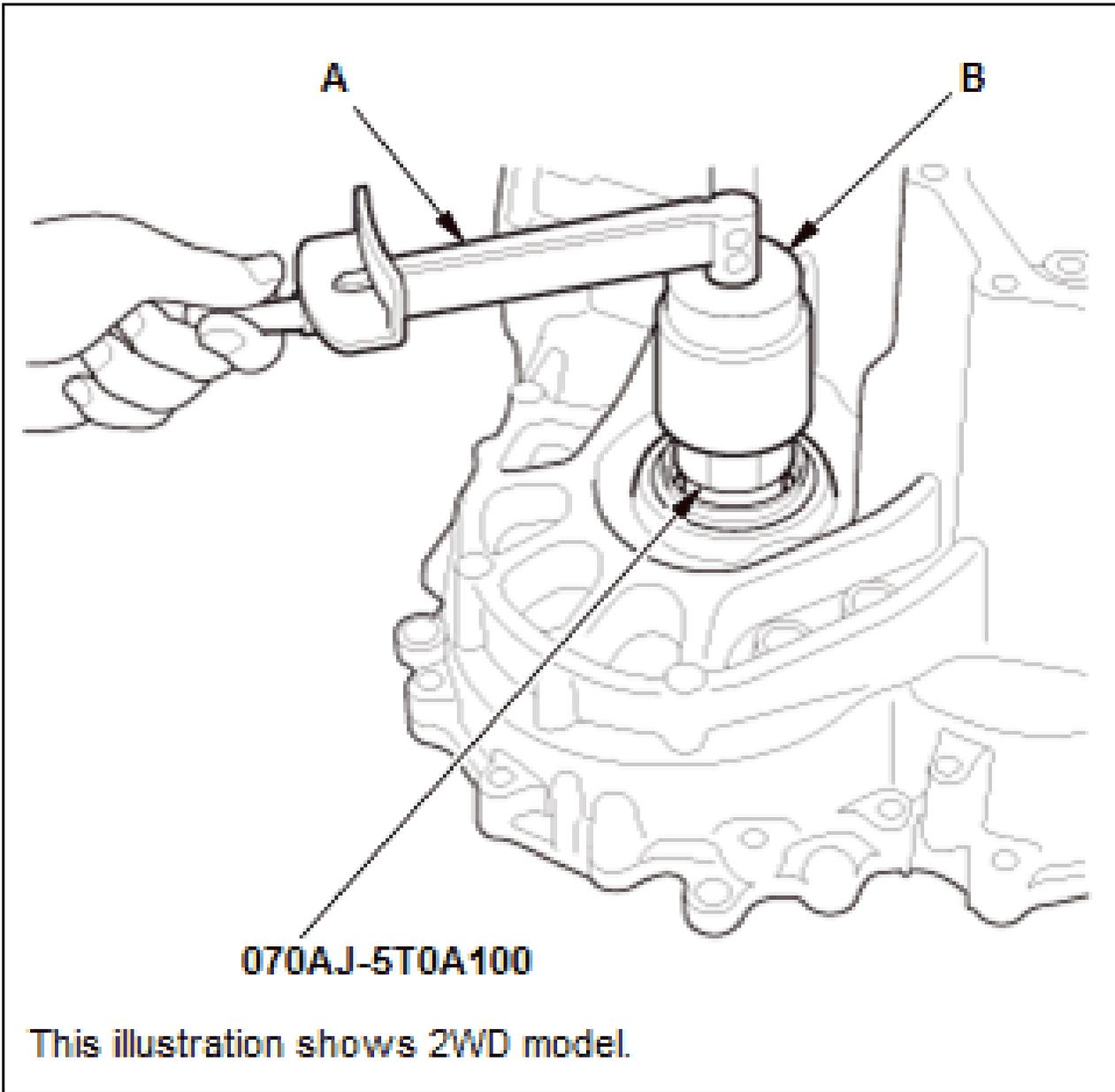
<p>Ā</p>	<p>6. Install the torque converter housing (A) with the dowel pins (B), and tighten the bolts in a crisscross pattern in at least two steps.</p>
<p>This illustration shows 2WD model.</p>	<p>7. Install the preload inspection tool</p> <p>8. Press the preload inspection tool gradually by tightening the bolt (A) and fix it.</p>

 <p>070AJ-5T0A100</p> <p>This illustration shows 2WD model.</p>	<p>9. Rotate the differential assembly in both directions to seat the bearings.</p>
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10. Measure the starting torque of the differential assembly using the preload inspection tool, a torque wrench (A), and a socket (B).

NOTE: Measure the starting torque at normal room temperature in both directions.

Standard:	
New Bearing:	10.98-13.59 N.m (112.0-138.6 kgf.cm, 97.2-120.3 lbf.in)
Reused Bearing:	9.53-12.14 N.m (97.2-123.8 kgf.cm, 84.3-107.4 lbf.in)



11. If the measurement is out of the standard, remove the 51 mm thrust shim, and measure its thickness, then select a suitable 51 mm thrust shim.

NOTE:

- To increase the starting torque, increase thickness of the 51 mm thrust shim.
- To decrease the starting torque, decrease the thickness of the 51 mm thrust shim.
- Do not use more than two thrust shims to adjust the starting torque.

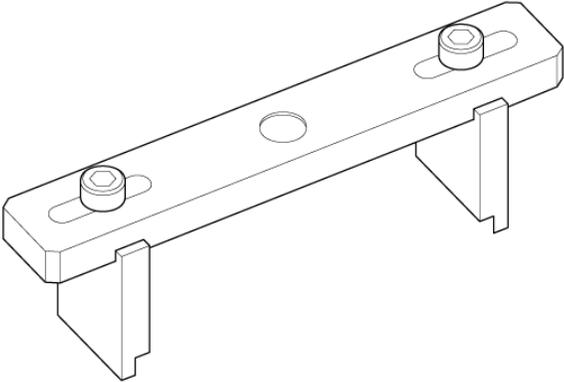
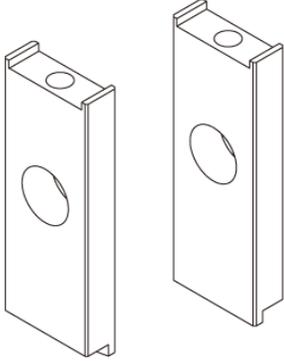
No.	Thickness
A	1.375 mm (0.05413 in)
B	1.400 mm (0.05512 in)
C	1.425 mm (0.05610 in)
D	1.450 mm (0.05709 in)
E	1.475 mm (0.05807 in)
F	1.500 mm (0.05906 in)
G	1.525 mm (0.06004 in)
H	1.550 mm (0.06102 in)
I	1.575 mm (0.06201 in)
J	1.600 mm (0.06299 in)
K	1.625 mm (0.06398 in)
L	1.650 mm (0.06496 in)
M	1.675 mm (0.06594 in)
N	1.700 mm (0.06693 in)
O	1.725 mm (0.06791 in)
P	1.750 mm (0.06890 in)
Q	1.775 mm (0.06988 in)

No.	Thickness
R	1.800 mm (0.07087 in)
S	1.825 mm (0.07185 in)
T	1.850 mm (0.07283 in)
U	1.875 mm (0.07382 in)
V	1.900 mm (0.07480 in)
W	1.925 mm (0.07579 in)
X	1.950 mm (0.07677 in)
Y	1.975 mm (0.07776 in)
Z	2.000 mm (0.07874 in)
0A	2.025 mm (0.07972 in)

12. Install a selected 51 mm thrust shim, then recheck the starting torque.

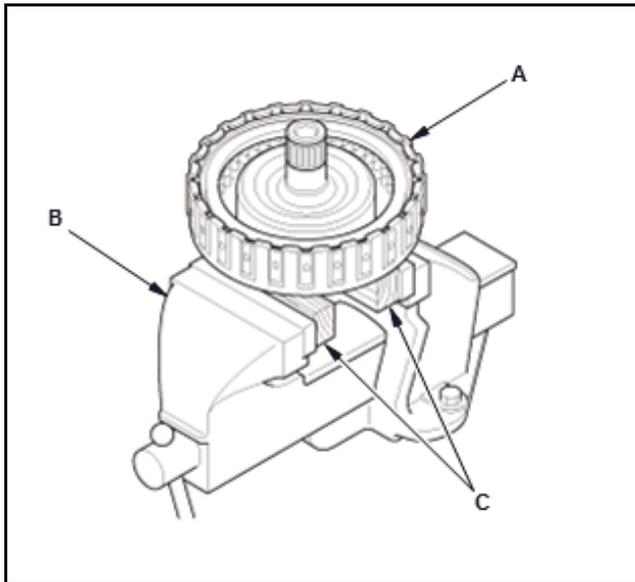
FORWARD CLUTCH CLEARANCE INSPECTION (CVT)

Special Tools Required

Image	Description/Tool Number
	Clutch Compressor Attachment 07ZAE-PRP0100
	Clutch Compressor Attachment 64 mm 07ZAE-PRP0110

Inspection

1. Forward Clutch Clearance - Inspect



1. Secure the input shaft assembly (A) in a bench vise (B) with wood blocks (C).

NOTE: After this procedure, remove any wood chips that may be stuck to the spline.

2. Set a dial indicator (A) on the forward clutch end-plate (B).

39 N (4.0 kgf, 8.8 lbf)
(weight of clutch compressor attachment is included)

07ZAE-PRP0100

A

B

07ZAE-PRP0110

Release the forward clutch end-plate	Lift the forward clutch end-plate	Press the forward clutch end-plate
Set a dial indicator	Zero the dial indicator	The dial indicator reads the clearance

3. Zero the dial indicator with the forward clutch end-plate is lifted up to the snap ring (C)

4. Release the forward clutch end-plate

5. Put the clutch compressor attachment and the clutch compressor attachment 64 mm on the forward clutch end-plate

6. Press the clutch compressor attachment down with 39 N (4.0 kgf, 8.8 lbf) (the weight of the clutch compressor attachment is included) using a force gauge, and read the dial indicator

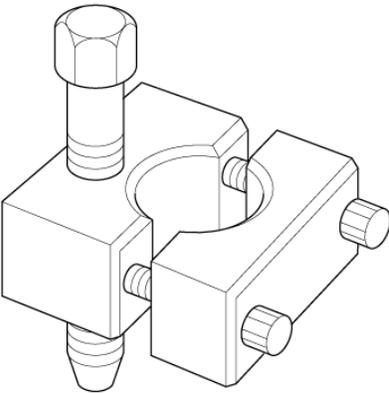
7. The dial indicator reads the clearance (D) between the forward clutch end-plate and the top disc (E). Take measurements in at least three places, and use the average as the actual clearance.

Standard:	1.0-1.2 mm (0.039-0.047 in)
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8. If the clearance is out of the standard, replace the input shaft assembly.

INPUT SHAFT THRUST CLEARANCE ADJUSTMENT (CVT)

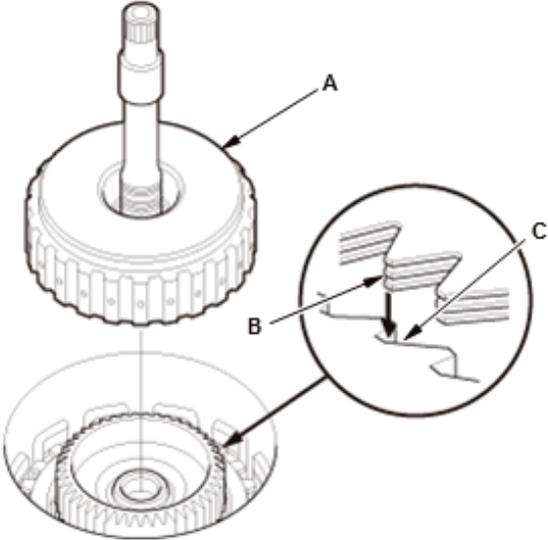
Special Tools Required

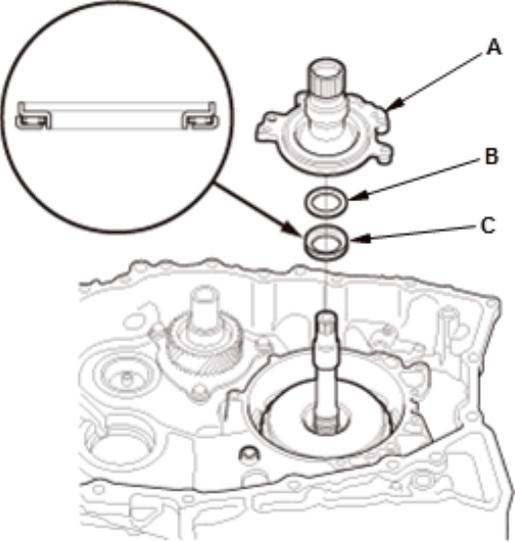
Image	Description/Tool Number
	Description/Tool Number Mainshaft Holder 07GAJ-PG20110

Adjustment

NOTE: If the transmission housing, the torque converter housing, the input shaft assembly, the stator shaft, or the thrust needle bearing were replaced, the input shaft thrust clearance must be adjusted.

1. Input Shaft Thrust Clearance - Adjust

	<p>1. Install the input shaft assembly (A) by aligning the clutch discs (B) with the sun gear splines (C).</p>
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	<p>2. Install the stator shaft (A) with the 26 x 38.8 mm thrust shim (B) and the thrust needle bearing (C) as shown.</p>
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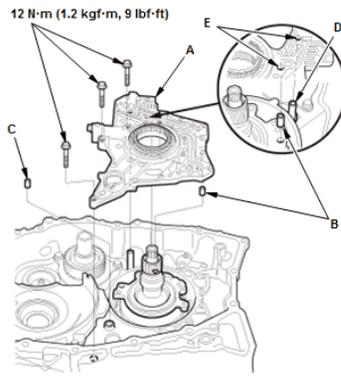
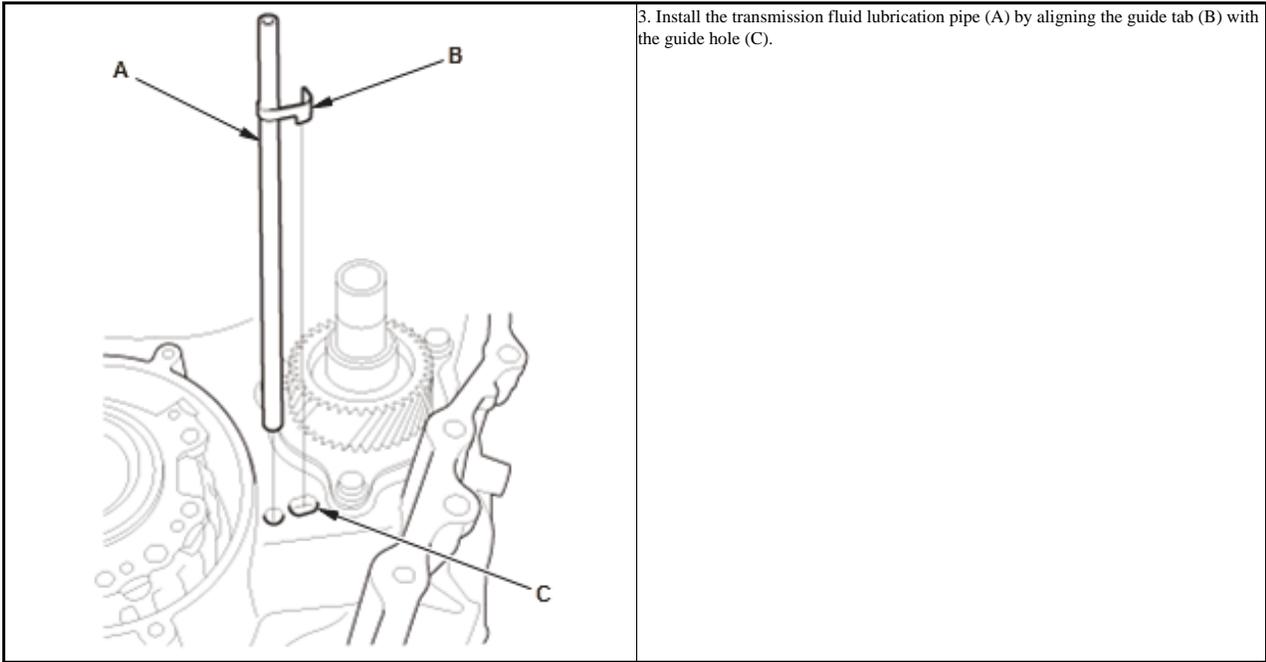


Fig. 5: Stator Shaft Flange With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>4</p>	<p>4. Install the stator shaft flange (A) with the dowel pins (B) (C) by aligning the transmission fluid lubrication pipe (D) and the dowel pins (B) with the mounting holes (E).</p>
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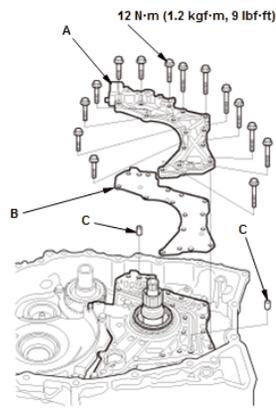


Fig. 6: Manual Valve Body With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>5</p>	<p>5. Install the manual valve body (A) with the separator plate (B) and the dowel pin (C).</p>
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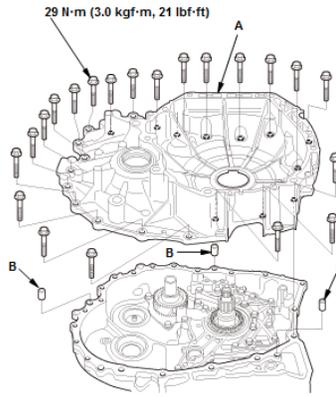


Fig. 7: Torque Converter Housing With Torque Specifications (2WD)
 Courtesy of HONDA, U.S.A., INC.

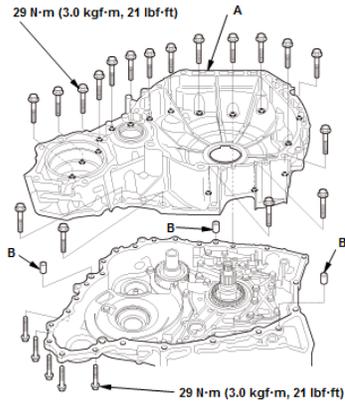
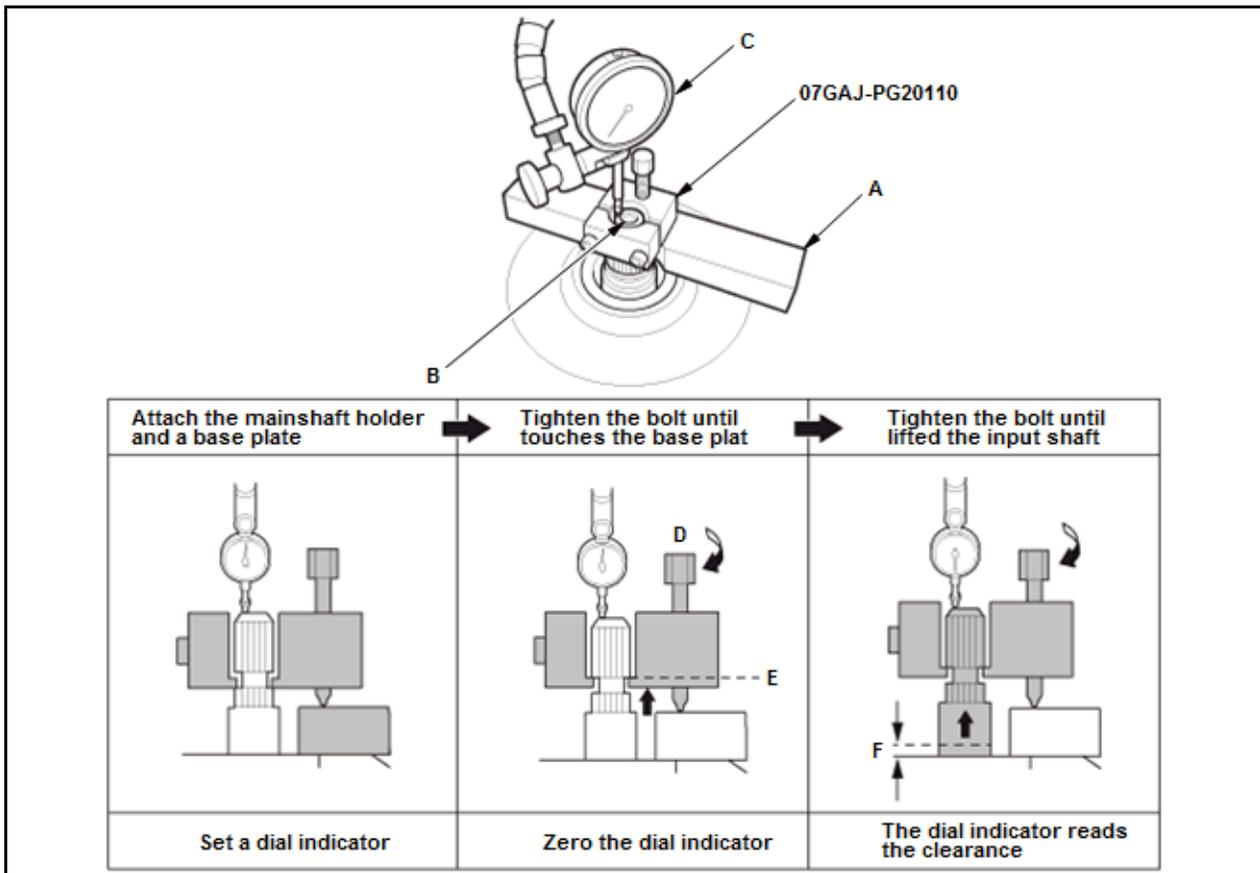


Fig. 8: Torque Converter Housing With Torque Specifications (AWD)
 Courtesy of HONDA, U.S.A., INC.

<p>Ā</p>	<p>6. Install the torque converter housing (A) with the dowel pins (B), and tighten the bolts in a crisscross pattern in at least two steps.</p>
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7. Attach the mainshaft holder and a base plate (A) to the input shaft (B) as shown.



- Set a dial indicator (C) on the tip of the input shaft
- Tighten the mainshaft holder bolt (D) until it touches the base plate (E), then zero the dial indicator
- Measure the input shaft thrust clearance (F) by tightening the mainshaft holder bolt to lift the input shaft up.

NOTE:

- Do not tighten the mainshaft holder bolt after the needle of the dial gauge stops moving. Applying more pressure with the mainshaft holder bolt could damage the transmission.
- Take measurements in at least three places, and use the average as the actual clearance.

Standard:	0.52-0.80 mm (0.0205-0.0315 in)
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- If the clearance is out of the standard, remove the 26 x 38.8 mm thrust shim, and measure its thickness.

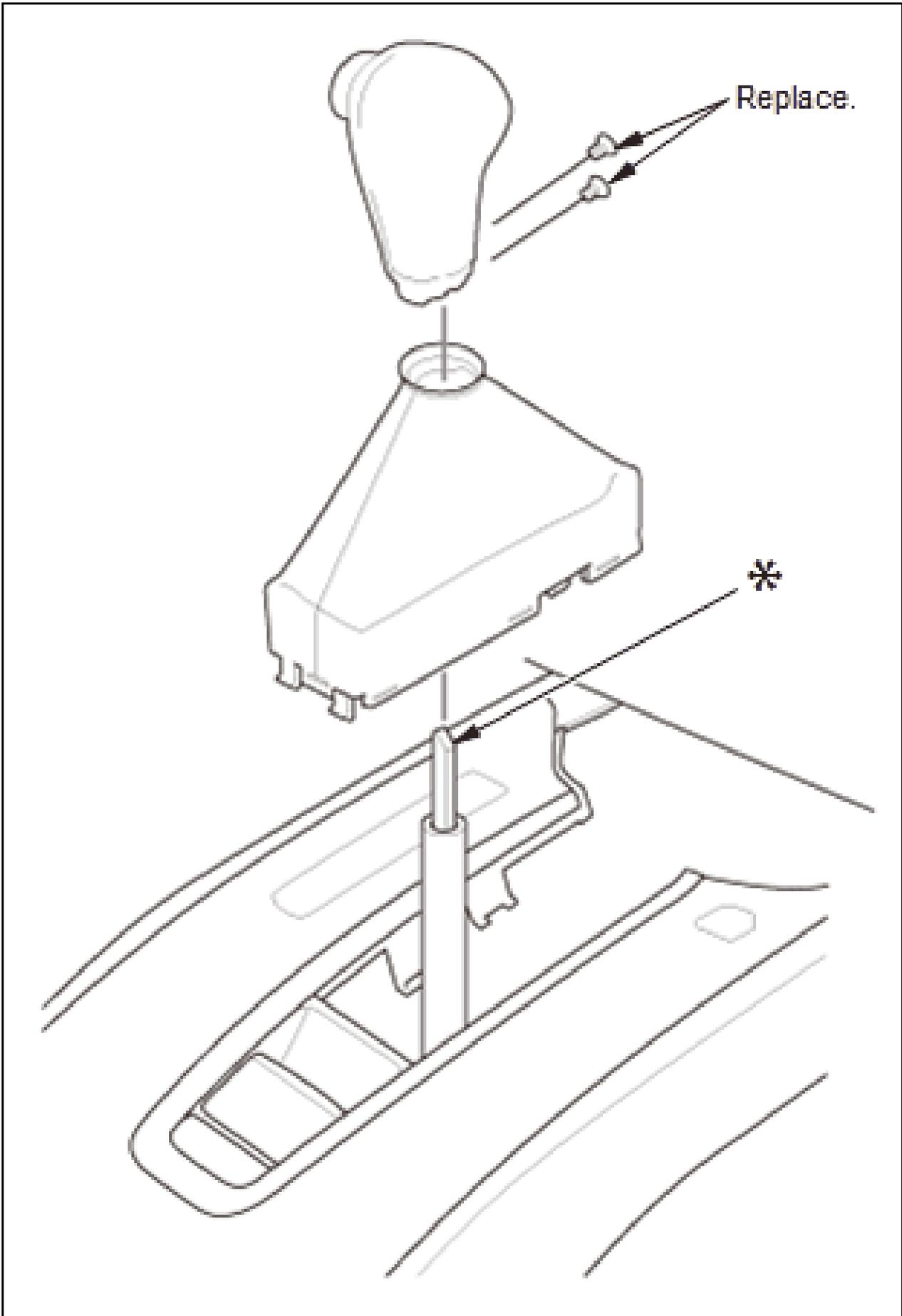
No.	Thickness
A	1.40 mm (0.0551 in)
B	1.65 mm (0.0650 in)
C	1.90 mm (0.0748 in)
D	2.15 mm (0.0846 in)
E	2.40 mm (0.0945 in)

- Install a selected 26 x 38.8 mm thrust shim, then recheck the thrust clearance.

SHIFT CABLE ADJUSTMENT (CVT)

Adjustment

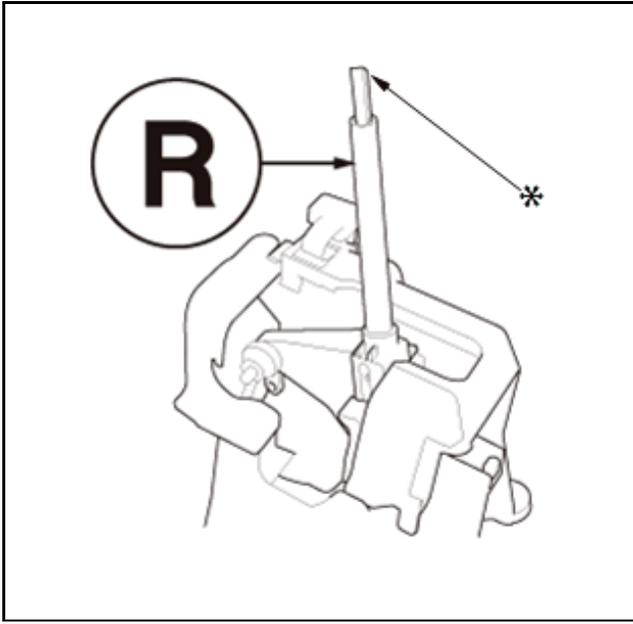
- Shift Lever Knob / Shift Lever Boots - Remove



NOTE: Do not wipe off the special grease applied to the area of the shift lever marked with an asterisk (*).

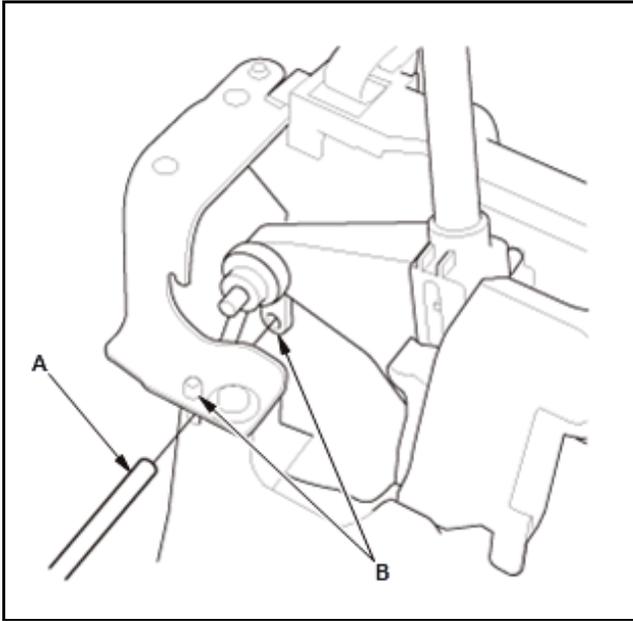
2. **Center Console - Remove**

3. **Shift Cable (Shift Lever Side) - Remove**



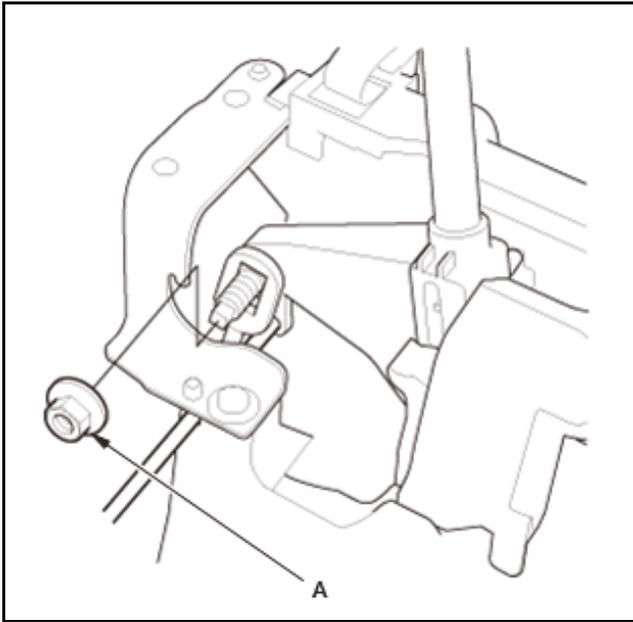
1. Shift the transmission to R position/mode.

NOTE: Do not wipe off the special grease applied to the area of the shift lever marked with an asterisk (*).

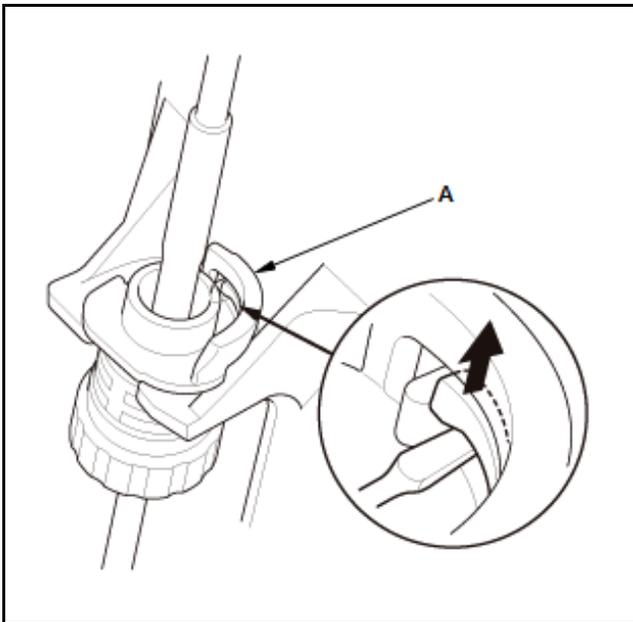


2. Insert a 6.0 mm (0.236 in) pin (A) into the positioning holes (B).

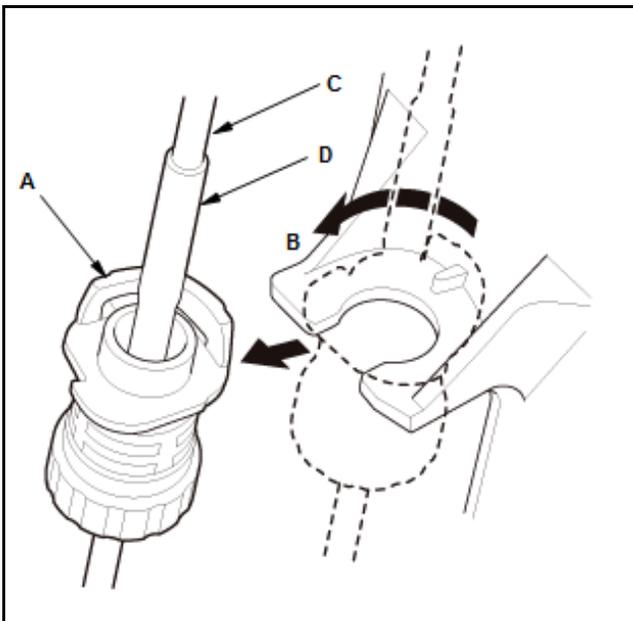
NOTE: Use only a 6.0 mm (0.236 in) pin with no burrs.



3. Remove the shift cable end nut (A).

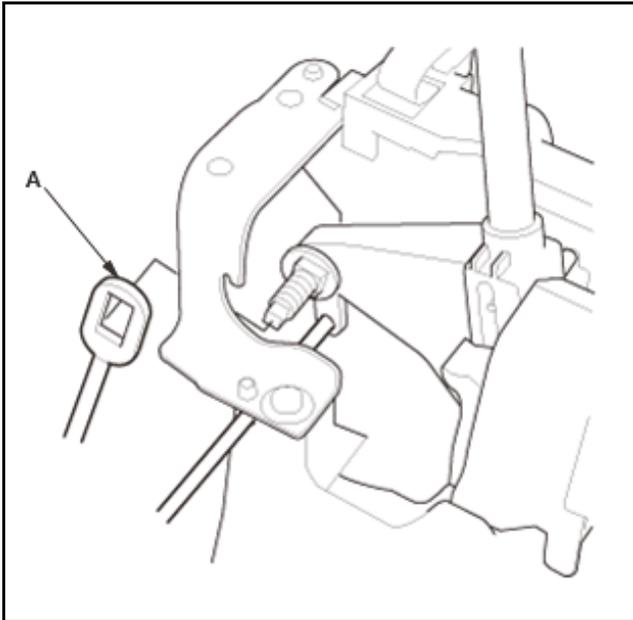


4. Expand the lock tab (A).



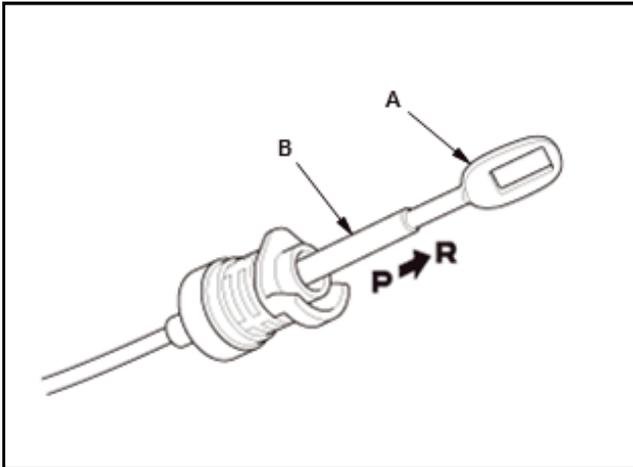
5. Rotate the socket holder retainer (A) counterclockwise (B) until it stops, then remove the shift cable (C).

NOTE: Do not remove the shift cable by pulling the shift cable guide (D).

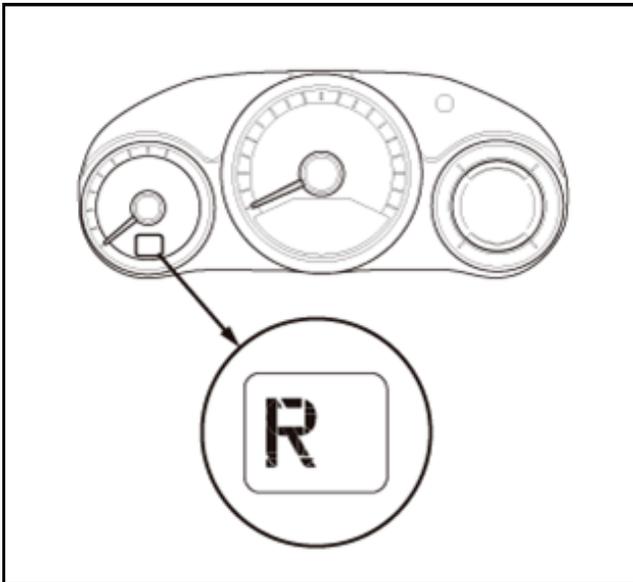


6. Remove the shift cable end (A).

4. Shift Cable - Adjust

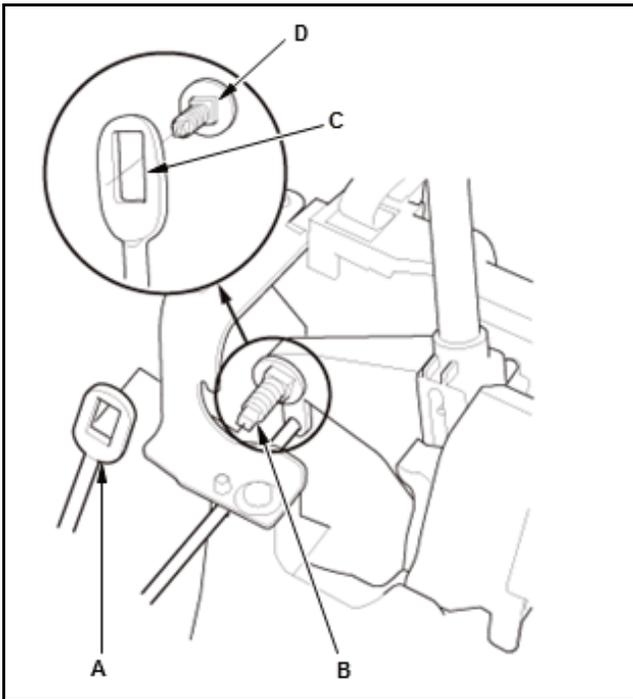


1. Push the shift cable (A) until it stops, then release it.
NOTE: Do not hold the shift cable guide (B) to adjust the shift cable
 2. Pull the shift cable back one step from the P position so that the shift position is in R.

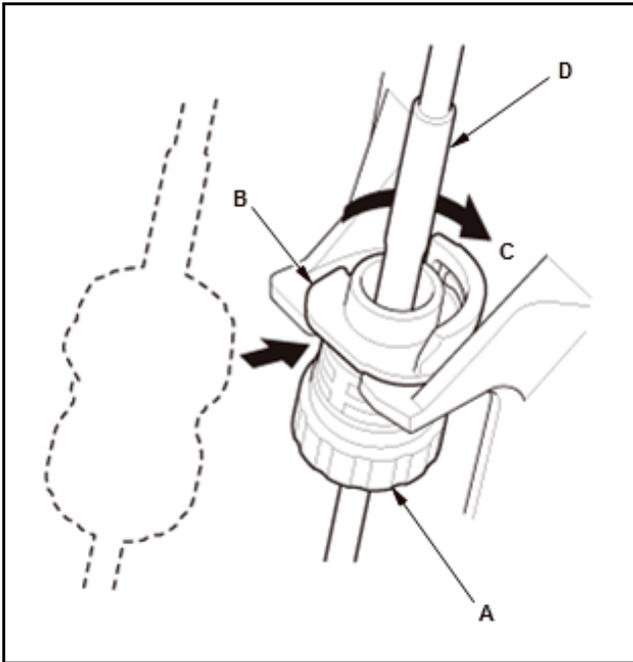


3. Turn the vehicle to the ON mode
 4. Check that the R indicator comes on
 5. Turn the vehicle to the OFF (LOCK) mode or the ACCESSORY mode.

5. Shift Cable (Shift Lever Side) - Install



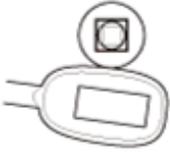
1. Install the shift cable end (A) over the mounting stud (B) by aligning its square hole (C) with the square fitting (D) at the bottom of the stud.



2. Install the socket holder (A), then rotate the socket holder retainer (B) clockwise (C) until it stops.

NOTE:

- Do not install the shift cable by holding the shift cable guide (D).

<p>Properly installed: Cable end rides on the bottom of the mounting stud.</p>  <p>Improperly installed: Cable end out of position with the mounting stud.</p>  <p>Improperly installed: Cable end out of alignment with the mounting stud.</p> 	<p>3. Make sure that the shift cable end (A) is properly installed on the mounting stud (B).</p> <ul style="list-style-type: none"> • If the cable end is out of position with the mounting stud, remove the shift cable from the shift cable bracket, then reinstall the cable end over the mounting stud before reinstalling the shift cable to the shift cable bracket. Do not install the shift cable end on the mounting stud with the shift cable installed on the shift cable bracket. • If the shift cable end does not ride at the bottom of the mounting stud, rotate the stud to align the square fitting with the hole.
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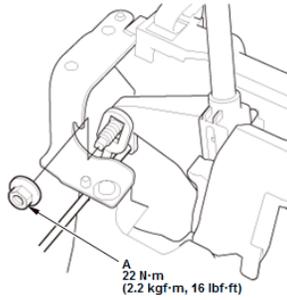
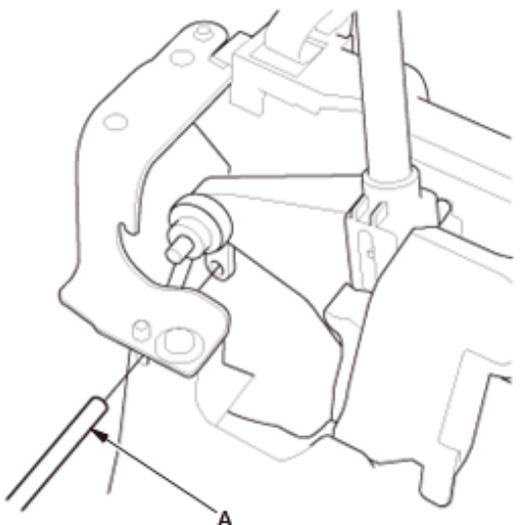


Fig. 9: Shift Cable End Nut With Torque Specifications
Courtesy of HONDA, U.S.A., INC.

<p>4. Install the shift cable end nut (A).</p>	<p>4. Install the shift cable end nut (A).</p>
 <p>A</p>	<p>5. Remove the 6.0 mm (0.236 in) pin (A) that was installed to hold the shift lever.</p>

6. Center Console - Install

7. Shift Cable - After Adjust Check

<p>1. Start the engine.</p>	<p>1. Start the engine. NOTE: Check that the engine starts in P or N position/mode, and does not start in any</p>
-----------------------------	--

- other positions / modes.
- 2. Check the shift lever operation.
- 3. Move the shift lever through all positions / modes, and verify the transmission range switch matches with the A/T gear position indicator.
- 4. Check that the back-up lights come on when the transmission is in R position/mode.
- 5. Check that the engine starts when the transmission is in P or N position/mode, and does not start in any other positions / modes.
- 6. Shift the transmission to P position/mode.
- 7. Check that the shift lock works properly. Push the shift lock release, and check that the shift lever releases, and also check that the shift lever locks when it is shifted back to P position/mode.
- 8. Make sure the vehicle is turned to the OFF (LOCK) mode with the shift lever is in P position/mode. If it does not, adjust the shift cable again.

TRANSFER ASSEMBLY INSPECTION (CVT)

Inspection

Transfer Gear Backlash Measurement

1. **Vehicle - Lift**
2. **Propeller Shaft (Transfer Side) - Disconnect**
3. Transfer Assembly - Transfer Gear Backlash Check

	<ol style="list-style-type: none"> 1. Shift the transmission to N 2. Set a dial indicator (A) on the transfer companion flange (B). <p>NOTE: Position the dial indicator tip (C) on the direct extension of the bolt hole center (D)</p> <ol style="list-style-type: none"> 3. Measure the transfer gear backlash.
--	--

Standard:	0.06-0.16 mm (0.0024-0.0063 in)
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4. If the transfer gear backlash is out of the standard, **replace the transfer assembly** .

4. All Removed Parts - Install

⌘	1. Install the parts in the reverse order of removal.
---	---

Fluid Leak Check

5. Transfer Assembly Fluid (Transmission Side) - Leak Check

⌘	<ol style="list-style-type: none"> 1. Check for fluid leaks between the mating faces of the transfer assembly and the transmission 2. If there is leak: <ul style="list-style-type: none"> • Replace the O-ring between the transfer assembly and the transmission. • Replace the O-ring between the transfer housing and the transfer hypoid drive shaft assembly.
---	--

6. Transfer Assembly Fluid (Propeller Shaft Side) - Leak Check

⌘	<ol style="list-style-type: none"> 1. Check for fluid leaks between the transfer companion flange and the transfer oil seal. 2. If there is leak, replace the transfer oil seal.
---	---

Total Starting Torque Measurement

7. **Transmission Fluid (HCF-2) - Drain**

8. **Transfer Assembly - Remove**

9. Transfer Assembly - Total Starting Torque Check

	<p>1. Secure the transfer housing (A) in a bench vise (B).</p> <p>NOTE: To prevent damaging the transfer housing, always use wood blocks or equivalent materials (C) between the transfer housing and the bench vise</p> <p>2. Rotate the companion flange several turns to seat the tapered roller bearings</p> <p>3. Measure the total starting torque at the companion flange (D) using a torque wrench (E) and a socket (F).</p>
--	---

Standard:	2.85-7.40 N.m (29.1-75.6 kgf.cm, 25.2- 65.5 lbf.in)
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4. If the total starting torque is out of the standard, **replace the transfer assembly** .

Transfer Hypoid Drive Gear Tooth Contact Pattern Check

10. Transfer Hypoid Drive Gear/Shaft Assembly - Remove

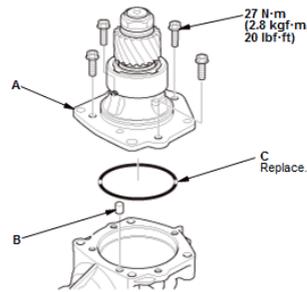


Fig. 10: Transfer Hypoid Drive Gear/Shaft Assembly With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

A	1. Remove the transfer hypoid drive gear/shaft assembly (A), dowel pin (B) and the O-ring (C).
---	--

11. Transfer Hypoid Drive Gear - Tooth Contact Pattern Check

<p>CORRECT TOOTH CONTACT PATTERN</p>  <p>INCORRECT TOOTH CONTACT PATTERN</p>  <p>TOE CORRECT</p>  <p>HEEL CORRECT</p>  <p>FLANK CORRECT</p>  <p>FACE CORRECT</p>	<ol style="list-style-type: none"> 1. Check the transfer hypoid drive gear tooth contact pattern. 2. If the transfer gear tooth contact is incorrect, <u>replace the transfer assembly</u> .
---	--

12. All Removed Parts - Install

Ã	1. Install the parts in the reverse order of removal.
---	---

DESCRIPTION

CVT SYSTEM DESCRIPTION - CLUTCHES (CVT)

Forward Clutch, Reverse Brake, Planetary Gear Train, and Pulleys

Forward Clutch

The forward clutch is the hydraulic-actuated clutch, and engages and disengages the sun gear. When hydraulic pressure is introduced into the forward clutch drum, the forward clutch piston moves. This presses the friction discs and the steel plates together, locking them so they do not slip. Power is then transmitted through the engaged clutch pack to the forward clutch hub/sun gear. Likewise, when the hydraulic pressure is bled from the clutch pack, the piston releases the friction discs and the steel plates, and they are free to slide past each other. This allows the sun gear to spin independently on the forward clutch, transmitting no power. The forward clutch is integrated with the input shaft, and located at the end of the drive pulley shaft. The forward clutch is supplied hydraulic pressure by a circuit connected to the internal hydraulic circuit.

Reverse Brake

The reverse brake is the hydraulic-actuated brake, and engages and disengages the planetary carrier with the transmission housing. When hydraulic pressure is introduced into the reverse brake piston cavity, the reverse brake piston moves. This presses the friction discs and the steel plates together, locking them so the planetary carrier locks. Power from the forward clutch drum and the ring gear is then transmitted through the planetary pinion gears and the sun gear. Likewise, when the hydraulic pressure is bled from the reverse brake piston cavity, the piston releases the friction discs and the steel plates, and they are free to slide past each other. This allows the planetary carrier to free from the reverse brake, transmitting no power. The reverse brake is mounted in the transmission housing. The reverse brake is supplied hydraulic pressure by a circuit connected to the internal hydraulic circuit.

Planetary Gear Train

The planetary gear train is only used for switching the rotational direction of the pulley shafts in R. The planetary gear train consists of the sun gear, the planetary pinion gears, the planetary carrier, and the ring gear. The sun gear is connected to the drive pulley shaft by the splines. The planetary pinion gears are installed on the planetary carrier. The planetary carrier assembly is located on the drive pulley shaft, the carrier is mounted in the reverse brake, and the pinion gears are engaged with the sun gear. The ring gear is connected with the forward clutch drum, and engaged with the planetary pinion gears. In R, the reverse brake locks the planetary carrier, and the ring gear drives the planetary pinion gears to rotate. The pinion gears drive the sun gear in the reverse direction from the rotational direction of the input shaft. The engine power from the input shaft drives the sun gear and the drive pulley shaft via the forward clutch drum, ring gear, planetary pinion gears.

Pulleys

The drive pulley and the driven pulley consist of a movable face and a fixed face, and the effective pulley ratio changes with engine speed. The drive pulley and the driven pulley are linked by the steel belt. To achieve a low pulley ratio, high hydraulic pressure works on the movable face of the driven pulley and reduces the effective diameter of the drive pulley, and a lower hydraulic pressure works on the movable face of the driven pulley to eliminate the steel belt slippage. To achieve a high pulley ratio, high hydraulic pressure works on the movable face of the drive pulley and reduces the effective diameter of the driven pulley, and low hydraulic pressure works on the movable face of the driven pulley to eliminate the steel belt slippage.

Transmission Cutaway View

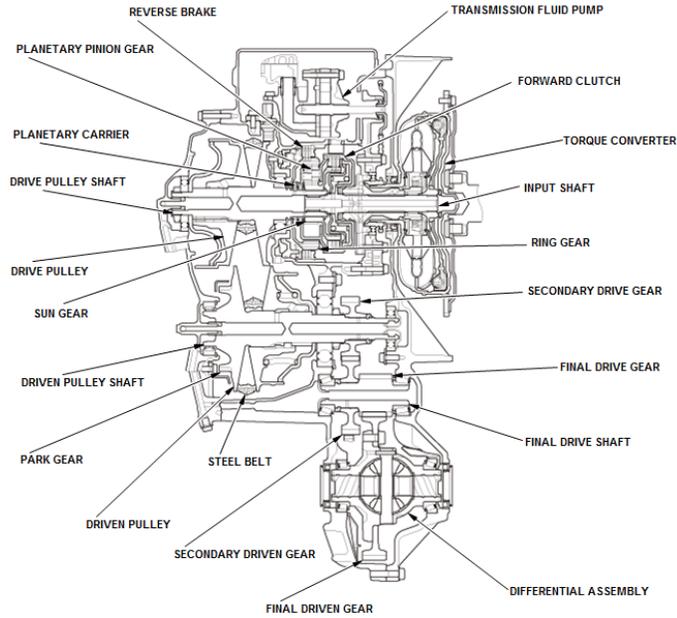


Fig. 11: Transmission Cutaway View (2WD)
Courtesy of HONDA, U.S.A., INC.

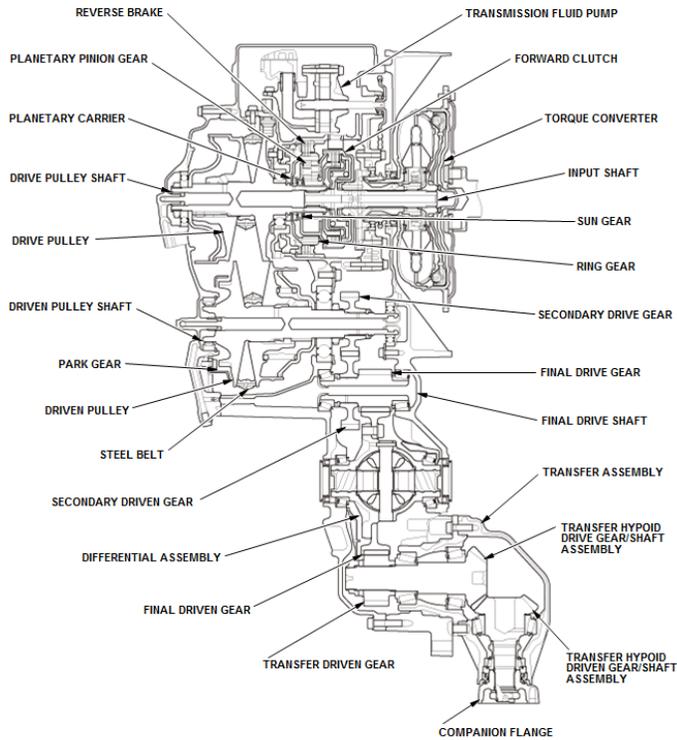


Fig. 12: Transmission Cutaway View (2WD)
Courtesy of HONDA, U.S.A., INC.

CVT SYSTEM DESCRIPTION - ELECTRONIC CONTROL SYSTEM (CVT)

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 and other control units, processes data, and outputs signals for engine control system and CVT control system. The CVT control system includes the shift control, the pulley pressure control, the clutch pressure control, the lock-up control, and the indicator control. The PCM switches the shift solenoid valve and the CVT pulley

pressure control solenoid valves to control shifting position and speed stage, and lock-up torque converter clutch.

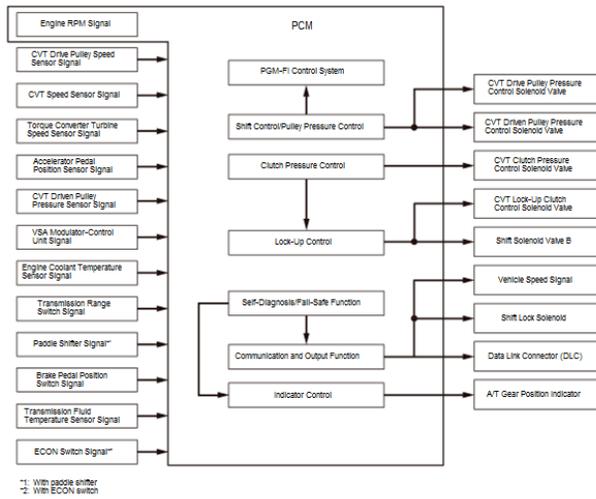


Fig. 13: CVT - Electronic Control - System Diagram
 Courtesy of HONDA, U.S.A., INC.

Shift Control/Pulley Pressure Control

To reduce steel belt slippage and increase steel belt life, the PCM calculates signals from sensors and switches, and actuates the pulley pressure control solenoid valves to maintain optimum pulley pressure. When the pulley ratio is high (low vehicle speed), high hydraulic pressure works on the movable face of the driven pulley and reduces the effective diameter of the drive pulley, and a lower hydraulic pressure works on the movable face of the drive pulley to eliminate the steel belt slippage. When the pulley ratio is low (high vehicle speed), high hydraulic pressure works on the movable face of the drive pulley and reduces the effective diameter of the driven pulley, and a lower hydraulic pressure works on the movable face of the driven pulley to eliminate the steel belt slippage. The PCM compares actual driving conditions with programmed driving conditions to control shifting, and it instantly determines a drive pulley ratio from various signals sent from sensors and switches. The PCM activates the CVT drive pulley pressure control solenoid valve to control pulley pressure to the pulleys. The drive pulley drives the driven pulley via a steel belt at varying ratios ranging from 2.526 to 0.408 in forward driving and 2.706 to 1.382 in reverse driving.

The shift control includes the grade logic control, the shift-hold control, and the S-paddle shift mode control*.

*: With paddle shifter

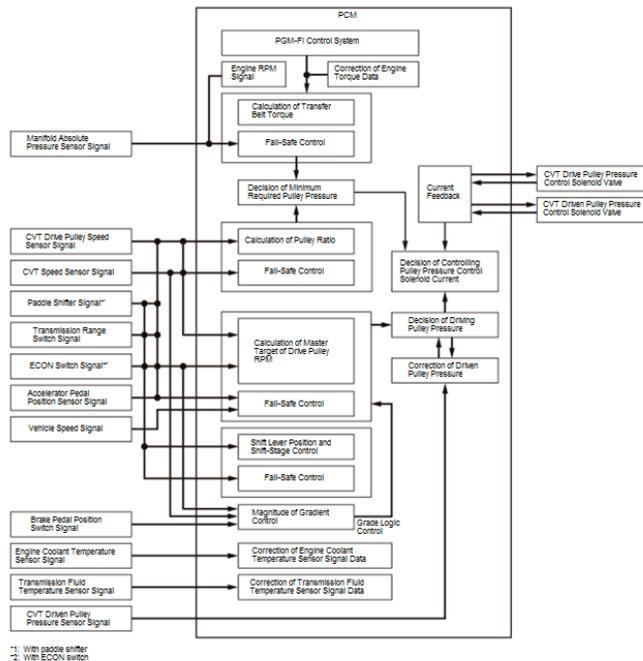


Fig. 14: CVT - Shift Control/Pulley Pressure Control - System Diagram
 Courtesy of HONDA, U.S.A., INC.

Shift Control - Grade Logic Control

The grade logic control system has been adopted to control shifting in D position/mode, S position/mode, and ECON mode*. The PCM compares actual driving conditions with memorized driving conditions, based on the input signal from the CVT drive pulley speed sensor, the CVT speed sensor, the transmission range switch, the accelerator pedal position sensor, the throttle position sensor, the engine coolant temperature sensor, the transmission fluid temperature sensor, and the brake pedal position switch, to control shifting while the vehicle is ascending or descending a slope.

*: With ECON switch

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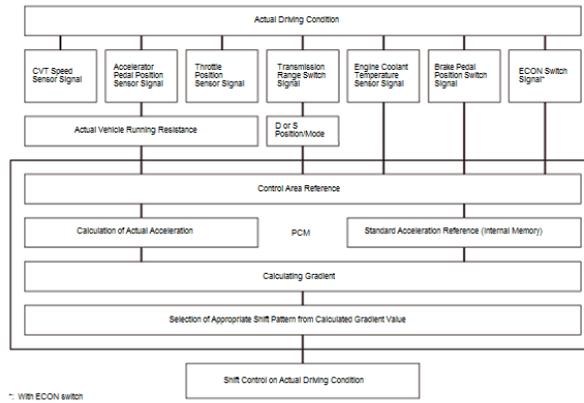
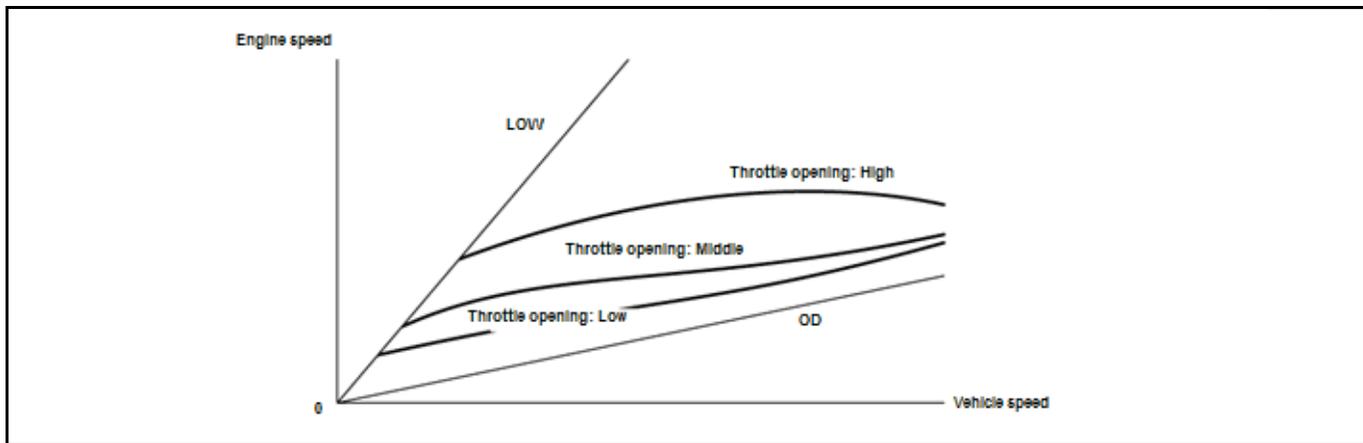


Fig. 15: Grade Logic Control - System Diagram

Courtesy of HONDA, U.S.A., INC.

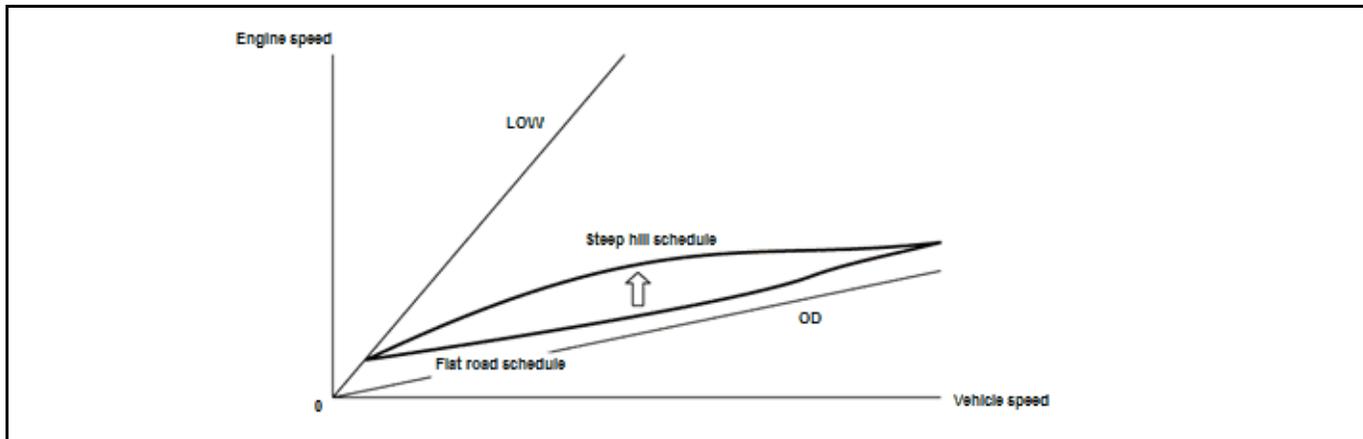
Grade Logic Control: Ascending Control

When the PCM determines that the vehicle is climbing a hill in D or S position/mode, the system selects the most suitable shift schedule according to the magnitude of a gradient, so the vehicle can run smooth and have more power when needed.



Grade Logic Control: Descending Control

When the PCM determines that the vehicle is going down a hill in D or S position/mode, the system selects the most suitable shift schedule according to the magnitude of a gradient, so the vehicle can run smooth in combination with engine braking.

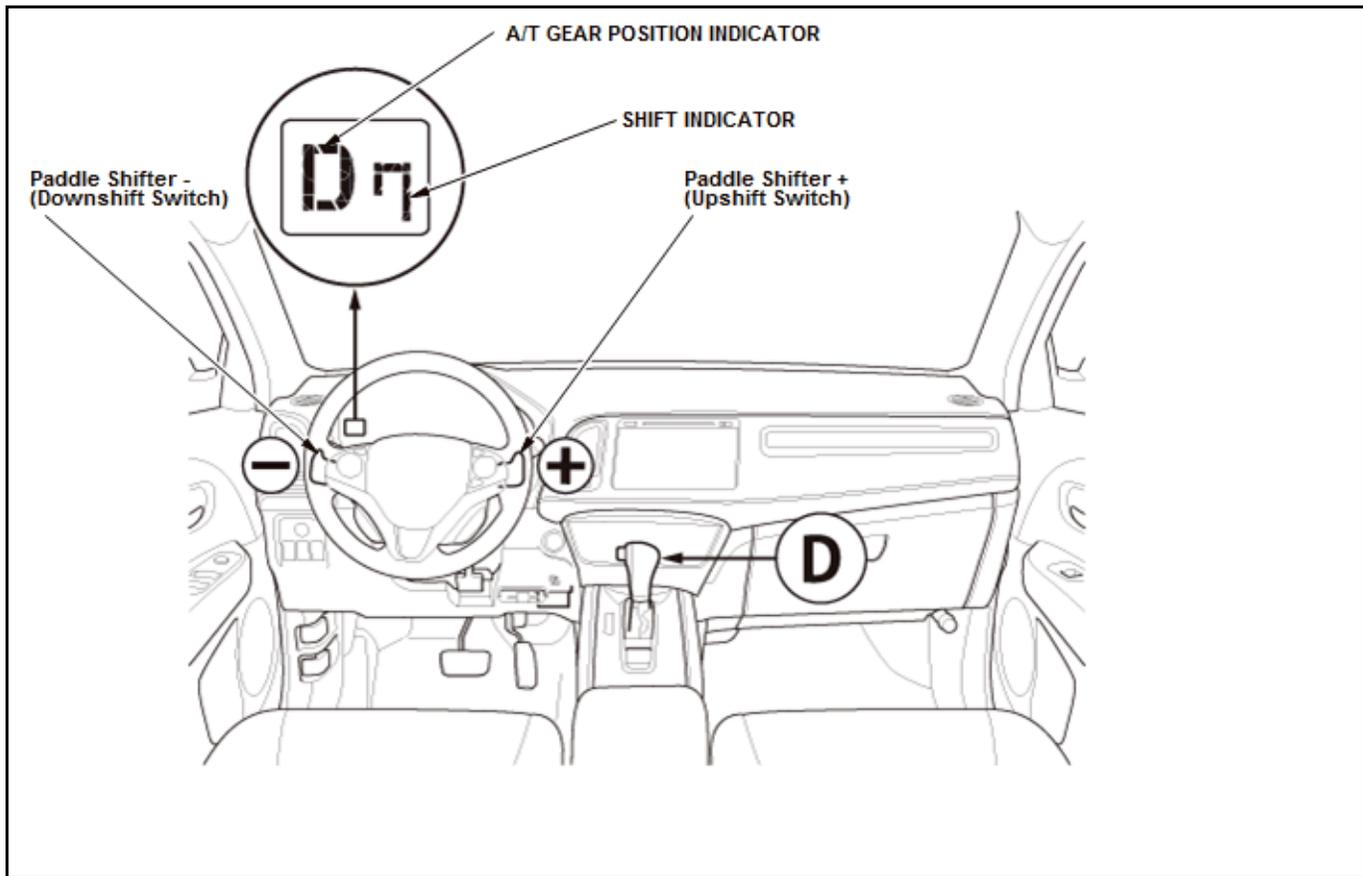


Shift-Hold Control

When negotiating winding roads, the throttle is suddenly released and the brakes are applied, as is the case when decelerating at the entrance of a curve, Shift-Hold Control keeps the transmission in its current (lower) ratio as it negotiates the corner and accelerates out. When the vehicle is driven aggressively on a winding road, the PCM will keep the engine speed on a higher-than-normal setting, so the vehicle can run smooth and have more power. The transmission will resume the normal setting after the PCM determines that normal driving has resumed.

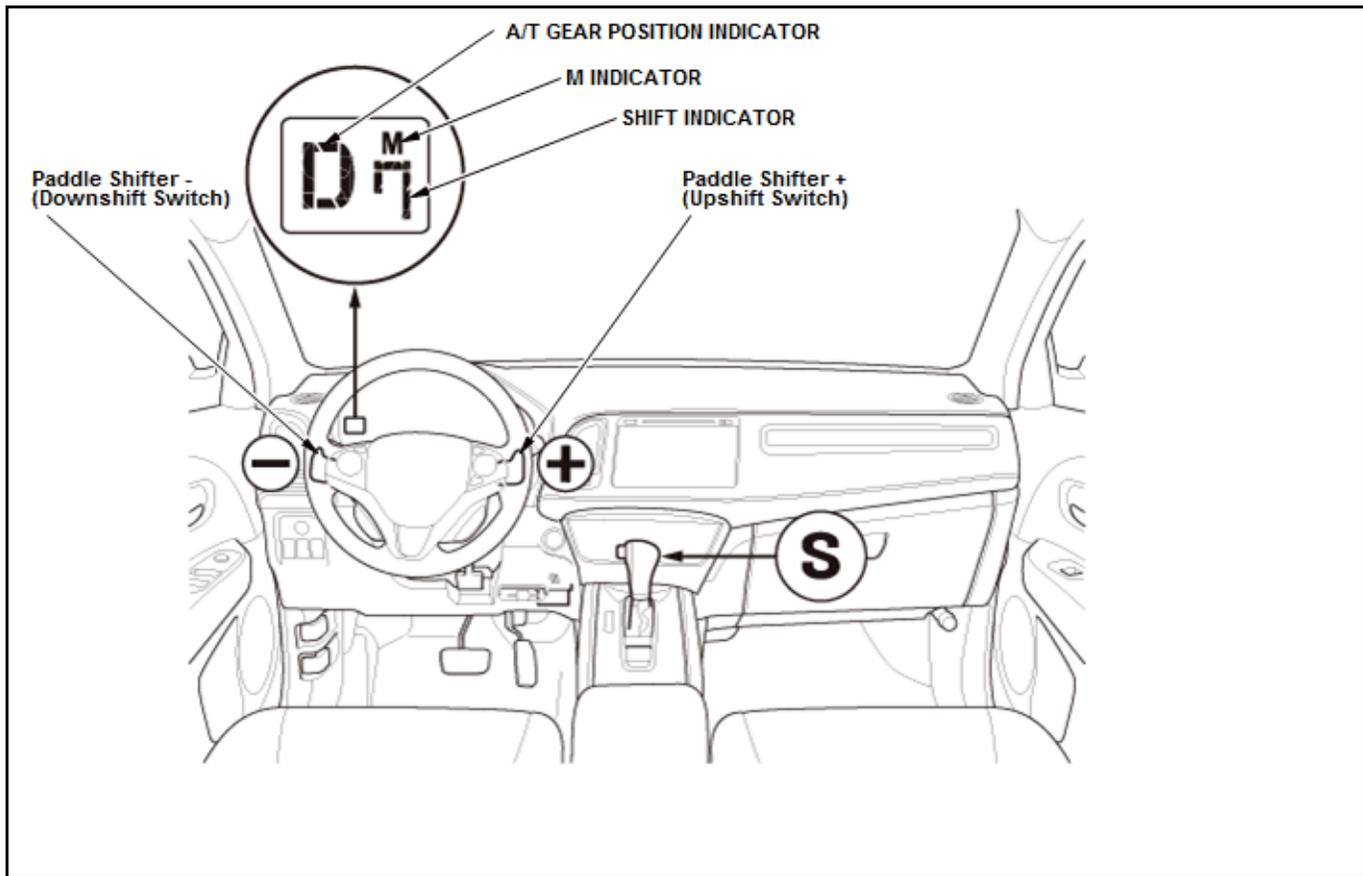
Shift Control - D-Paddle Shift Mode (With Paddle Shifter)

When the transmission is switched into the D-paddle shift mode by pressing steering wheel-mounted paddle shifters while driving in D position/mode, the transmission can shift into a lower speed stage by pressing the paddle shifter - (downshift switch), and it can shift into a higher speed stage by pressing the paddle shifter + (upshift switch). When the transmission shifts into a lower or a higher speed stage by pressing the paddle shifters, the shift indicator in the gauge control module displays the number of currently-selected stage. This number of the speed stage goes off when the transmission downshifts automatically, or when the transmission upshifts automatically while coasting.



Shift Control - S-Paddle Shift Mode (With Paddle Shifter)

In S position/mode has two shifting modes; the sport driving mode and the S-paddle shift mode. In S position/mode with the sport driving mode, the transmission automatically adjusts to keep the engine at a higher RPM than D position/mode setting, and steering wheel-mounted paddle shifters are ready to be activated to switch to the S-paddle shift mode. In the sport driving mode, the shift indicator and the M indicator in the gauge control module do not come on. When the paddle shifter + (upshift switch) or the paddle shifter - (downshift switch) is pressed, the sport driving mode is canceled and the S-paddle shift mode comes into operation. The shift indicator displays the number of the selected speed stage, and the M indicator comes on. In the S-paddle shift mode, the driver can shift up and down manually from 1st through 7th speed stage by using the paddle shifters, much like a manual transmission. The paddle shifters are installed on the back of the steering wheel, and the driver can shift speed stages by pressing the paddle shifters without taking either hand off the steering wheel. In the S-paddle shift mode, the transmission must be shifted up and down by pressing the paddle shifters. However, the transmission cannot downshift and stays in the current stage if the paddle shifter - (downshift switch) is pressed while the vehicle is coasting at a speed that would cause the engine to over-rev by downshifting the transmission, and the shift indicator blinks the number of the selected stage several times, then returns to the number of the current stage. If the vehicle speed reaches an appropriate speed while the shift indicator is blinking the number of the selected stage, the transmission downshifts and the shift indicator displays the selected stage. The transmission also cannot upshift and stays in the current stage if the paddle shifter + (upshift switch) is pressed while driving below an appropriate upshifting speed, the shift indicator blinks the number of the selected stage several times, then returns to the number of the current stage. If the vehicle speed reaches an appropriate upshift speed while the shift indicator is blinking the number of the selected stage, the transmission upshifts and the shift indicator displays the selected stage. This mode has automatic upshifting areas to prevent engine over-revving, and downshifting areas so the vehicle can run smoothly with more power to cope with upcoming acceleration. When coasting, the transmission downshifts to the next lower stage if the vehicle slows down to the programmed speed, or by pressing the brake pedal. When the transmission decelerates to a stop, the transmission shifts to 1st stage automatically. The transmission can be shifted to 2nd stage by pressing the paddle shifter + (upshift switch) while the vehicle is stopped, and the vehicle can start off in 2nd stage. The S-paddle shift mode is canceled when moving the shift lever to any positions / modes other than S position/mode.



Clutch Pressure Control

The PCM actuates the CVT clutch pressure control solenoid valve to control the forward clutch pressure and the reverse brake pressure. When the transmission is in-gear, the forward clutch pressure and the reverse brake pressure regulated by the CVT clutch pressure control solenoid valve engage and disengage the forward clutch and the reverse brake smoothly. The PCM receives input signals from the various sensors and switches, processes data, and outputs current to the CVT clutch pressure control solenoid valve.

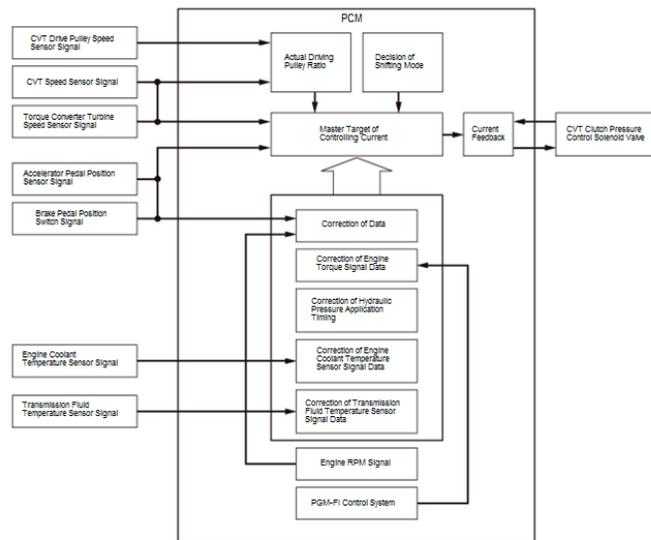


Fig. 16: Clutch Pressure Control - System Diagram

Courtesy of HONDA, U.S.A., INC.

Lock-Up Control

Shift solenoid valve B controls the hydraulic pressure to switch the LC shift valve and lock-up ON and OFF. The PCM actuates shift solenoid valve B and the CVT lock-up clutch control solenoid valve to start lock-up. The CVT lock-up clutch control solenoid valve applies and regulates hydraulic pressure to the LC control valve to control the volume of the lock-up. The lock-up mechanism operates in D position/mode, S position/mode, L position/mode*¹, S-paddle shift mode (from 3rd through 7th speed stage)*², and ECON mode*³, at transmission fluid temperature exceeding 68 Â°F (20 Â°C).

*1: Without paddle shifter *2: With paddle shifter *3: With ECON switch

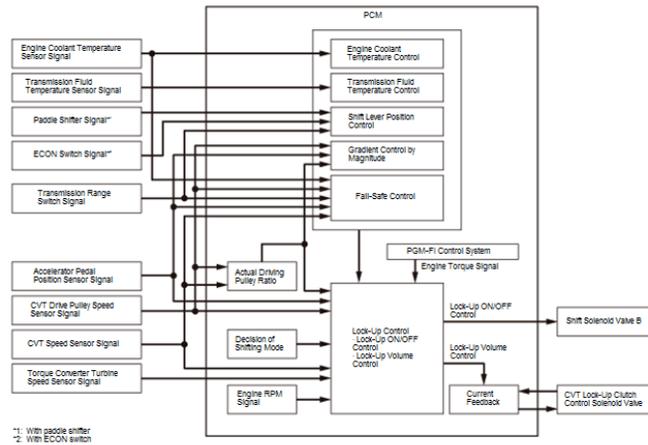


Fig. 17: Lock-Up Control - System Diagram

Courtesy of HONDA, U.S.A., INC.

CVT SYSTEM DESCRIPTION - GENERAL OPERATION (CVT)

The continuously variable transmission (CVT) is an electronically controlled automatic transmission with drive and driven pulleys, steel belt, and new transmission fluid (HCF-2). The CVT provides non-stage speeds forward and non-stage speeds reverse. The entire unit is positioned in line with the engine.

Transmission

The torque converter consists of a pump, a turbine, and a stator assembly in a single unit. The torque converter cover 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 drive gear when the engine is being started. The torque converter assembly serves as a flywheel, transmitting power to the transmission input shaft. The transmission has four parallel shafts: the input shaft, the drive pulley shaft, the driven pulley shaft, and the final drive shaft. The input shaft is connected to the torque converter turbine, and integrates the forward clutch on the drive pulley shaft end. The drive pulley shaft and the driven pulley shaft consist of movable and fixed face pulleys. Both pulleys are linked by the steel belt. The input shaft includes the forward clutch. The drive pulley shaft connects the drive pulley, the ring gear, and the forward clutch hub/sun gear. The input shaft is connected with the drive pulley shaft by the forward clutch hub/sun gear, and by the ring gear and the planetary carrier. The planetary carrier is positioned between the ring gear and the sun gear, and engaged with the planetary pinion gears. The driven pulley shaft includes the driven pulley (with the park gear). The secondary drive gear is splined to the driven pulley shaft. The final drive shaft is positioned between the secondary drive gear and the final driven gear. The final drive shaft integrates the secondary driven gear and the final drive gear which serves to change the rotational direction of the drive and driven pulley shafts, because the drive pulley shaft and the driven pulley shaft rotate the same direction. When the input shaft is joined with the drive pulley shaft by engaging the forward clutch or by engaging the reverse brake, power is transmitted through the input shaft, the drive pulley shaft, the driven pulley shaft, then to the final drive shaft 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 in the engine compartment.

Hydraulic Control

The hydraulic control system consists of the transmission fluid pump, the valve body assembly, and the manual valve body. The transmission fluid pump is located on the transmission housing in the transmission, and it is linked with the stator shaft by the drive/driven sprockets and the drive chain. The valve body assembly is located on the transmission housing in the transmission. The valve body assembly includes the main valve body, the secondary valve body, and the clutch reducing valve body. The valve body assembly must not be disassembled. The manual valve body is located on the stator shaft flange.

Shift Control

To shift pulley ratio, the PCM controls shift solenoid valve B, the CVT drive pulley pressure control solenoid valve, the CVT driven pulley pressure control solenoid valve, the CVT clutch pressure control solenoid valve, and the CVT lock-up clutch control solenoid valve while receiving input signals from various sensors and switches located throughout the vehicle. The PCM actuates the CVT drive pulley pressure control solenoid valve and the CVT driven pulley pressure control solenoid valve to change drive and driven pulley pressures. The drive pulley pressure is applied to the drive pulley, and the driven pulley pressure is applied to the driven pulley, and pulley ratio is changed to their effective ratio.

Lock-Up Mechanism

The lock-up mechanism of the torque converter clutch operates in D position/mode, S position/mode, L position/mode*¹, S-paddle shift mode (from 3rd through 7th speed stage)*², and ECON mode*³, at transmission fluid temperature exceeding 68 Â°F (20 Â°C). 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 transmission fluid pump. As this takes place, the input shaft and drive pulley shaft rotate as the same as the engine crankshaft. Together with hydraulic control, the PCM optimizes the timing of the lock-up mechanism. When shift solenoid valve B activates, the shift solenoid valve B pressure changes to switch lock-up ON and OFF. The LC control valve controls the volume of lock-up according to the CVT lock-up clutch control solenoid valve. Shift solenoid valve B is mounted on the clutch reducing valve body, and the CVT lock-up clutch control solenoid valve is included in the secondary valve body located in the transmission housing. They are all controlled by the PCM.

*1: Without paddle shifter *2: With paddle shifter *3: With ECON switch

Gear Selection

The shift lever has following position/mode;

Position	Description
P: PARK	Front wheels locked; the park pawl engages with the park gear on the driven pulley. The forward clutch disengage.
R: REVERSE	The reverse brake engages, and it locks with the planetary carrier to the transmission housing.
N: NEUTRAL	The forward clutch disengage.

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Position	Description	
D: DRIVE	Transmission automatically adjusts to keep the engine at the best RPM for driving under all conditions. The lock-up mechanism operates in this position/mode.	
S: SPORT	Automatic Shift Mode (Sport Driving Mode)	Transmission automatically adjusts to keep the engine at a higher RPM than in D driving conditions for sport driving. The lock-up mechanism operates in this position/mode.
	S-Paddle Shift Mode*1	The transmission can be manually shifted from 1st through 7th speed stage using the steering wheel-mounted paddle shifters. The lock-up mechanism operates in this position/mode.
L: LOW*2	For engine braking and power for climbing; the transmission shifts into the lowest pulley ratio. The lock-up mechanism operates in this position/mode.	

*1: With paddle shifter *2: Without paddle shifter

Starting the engine is possible only the transmission is in P or N position/mode because of a neutral-safety switch.

Automatic Transmission (A/T) Gear Position Indicator

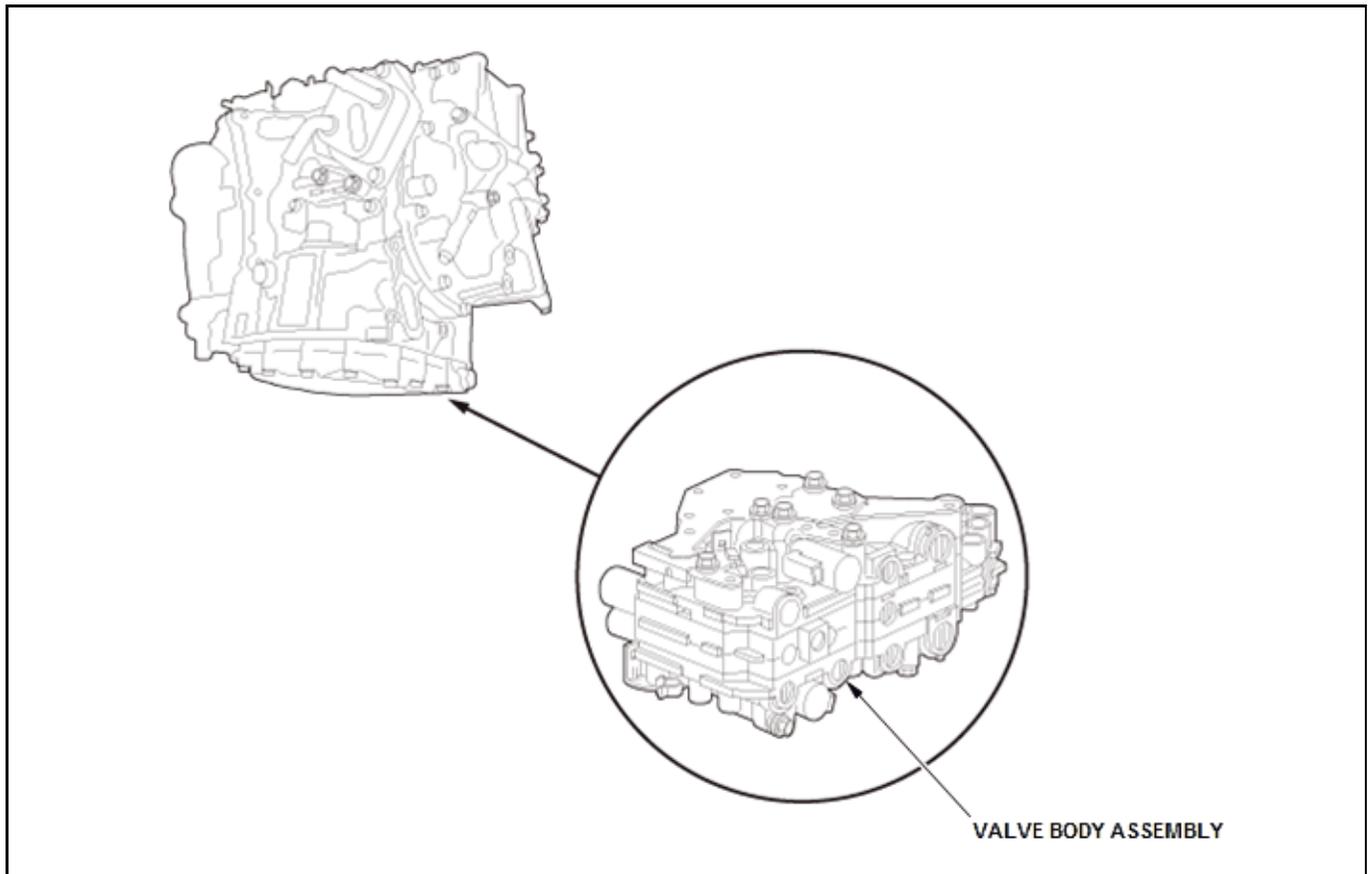
The A/T gear position indicator in the gauge control module shows which shift lever position/mode has been selected without having look down at the console.

Transfer Assembly (With AWD)

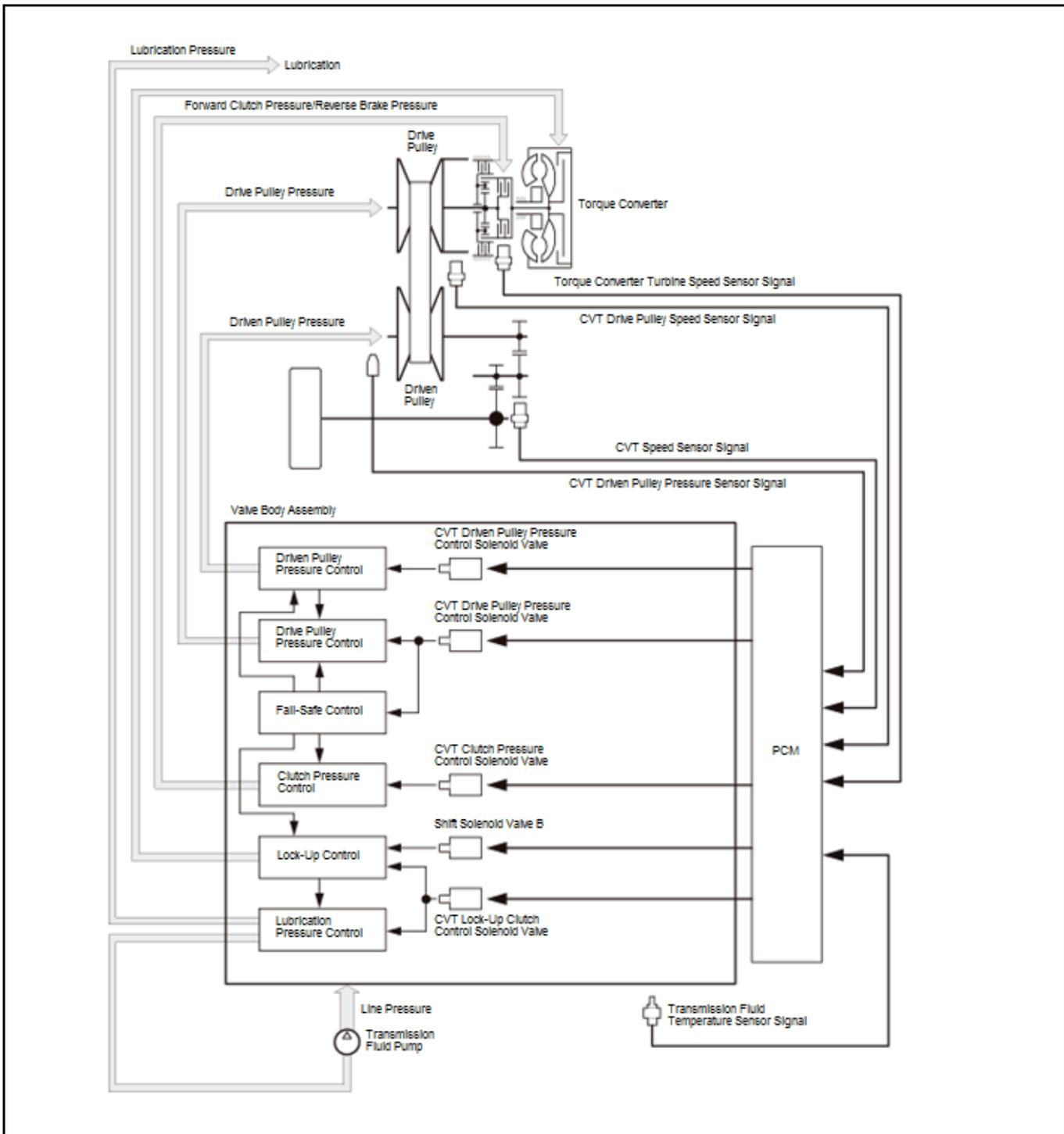
The transfer assembly consists of the transfer hypoid drive gear/shaft assembly, the transfer output shaft (hypoid gear), and the companion flange. The transfer assembly is on the rear side of the transmission, beside the differential. The transfer drive gear on the differential drives the transfer output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

CVT SYSTEM DESCRIPTION - HYDRAULIC CONTROLS (CVT)

The hydraulic control system is controlled by the transmission fluid pump, the valves, and the solenoid valves. The transmission fluid pump is driven by the engine turns. The transmission fluid pump drive sprocket is connected to the stator shaft, turns as the engine turns, and drives the transmission fluid pump driven sprocket by the transmission fluid pump drive chain. The transmission fluid pump supplies hydraulic pressure to the hydraulic circuit. Fluid from the transmission fluid pump passes through the valve body assembly, the drive/driven pulleys, the forward clutch, and the reverse brake. This valve body assembly is installed on the transmission housing in the transmission, and it must not be disassembled.



CVT SYSTEM DESCRIPTION - HYDRAULIC FLOW (CVT)



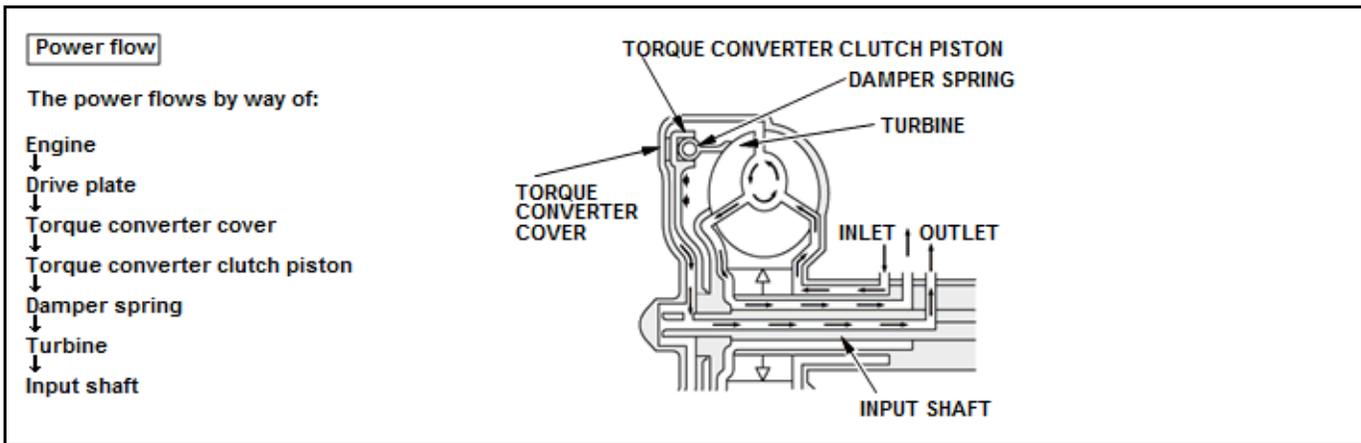
CVT SYSTEM DESCRIPTION - LOCK-UP SYSTEM (CVT)

The lock-up mechanism of the torque converter clutch operates in D position/mode, S position/mode, L position/mode^{*1}, S-paddle shift mode (from 3rd through 7th speed stage)^{*2}, and ECON mode^{*3}, at transmission fluid temperature exceeding 68 °F (20 °C). 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 transmission fluid pump. As this takes place, the input shaft and the drive pulley shaft rotate as the same as the engine crankshaft. Together with hydraulic control, the PCM optimizes the timing of the lock-up mechanism. When shift solenoid valve B is turned on by the PCM, shift solenoid B pressure switches lock-up ON and OFF. The LC control valve controls the volume of lock-up according to the CVT lock-up clutch control solenoid valve.

*1: Without paddle shifter *2: With paddle shifter *3: With ECON switch

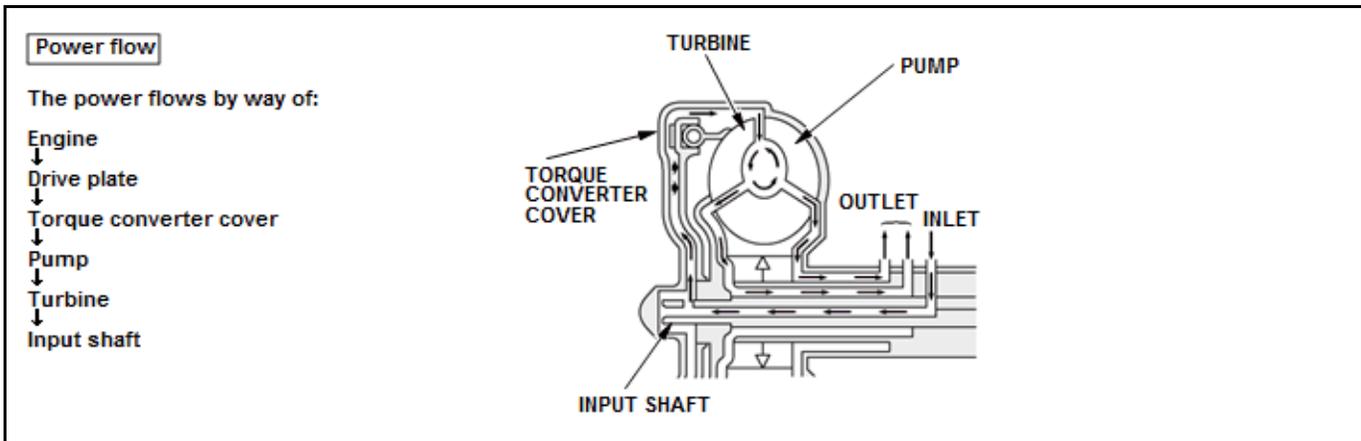
Torque Converter Clutch Lock-Up ON (Engaging Torque Converter Clutch)

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 the 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; torque converter clutch lock-up ON, and the input shaft rotates at the same as the engine.



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 from 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 clutch lock-up is released; torque converter clutch lock-up OFF.



Lock-Up System Hydraulic Pressure Flow Circuit

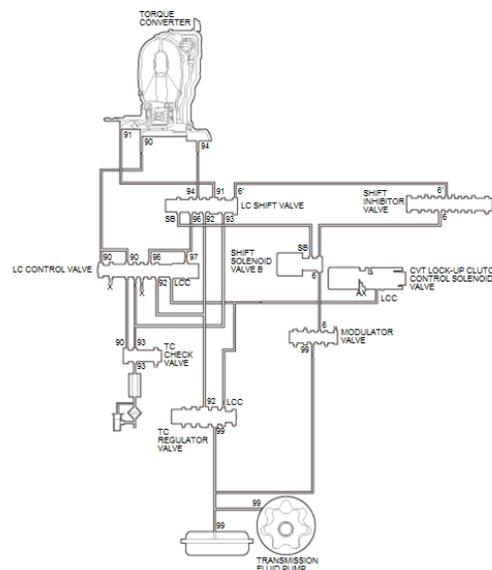


Fig. 18: Lock-Up System Hydraulic Pressure Flow Circuit Diagram
Courtesy of HONDA, U.S.A., INC.

No Lock-Up

Shift solenoid valve B is turned off by the PCM. The LC shift valve receives shift solenoid B pressure (SB). The LC shift valve uncovers the port leading torque converter pressure (92) to the back of the torque converter. Torque converter pressure (92) becomes torque converter pressure (94), and enters into the back of the torque converter not to engage the torque converter clutch. While shift solenoid valve B keeps off, torque converter clutch lock-up does not start; the torque converter clutch is OFF.

Partial Lock-Up

As the speed of the vehicle reaches the prescribed value, shift solenoid valve B is turned on by the PCM to release shift solenoid B pressure (SB) in the LC shift valve. Modulator pressure (6') is applied to the right side of the LC shift valve, then the LC shift valve is moved to the left side to switch the port leading torque converter pressure (91) to the torque converter. Torque converter pressure (91) is applied to the torque converter to engage the lock-up clutch. The PCM also controls the CVT lock-up clutch control solenoid valve, and LC control pressure (LCC) is applied to the LC control valve. When LC control pressure (LCC) is lower, torque converter pressure (91) from the torque converter regulator valve is lower. The torque converter clutch is engaged partially. LC control pressure (LCC) increases, and the LC control valve is moved to the left side to release torque converter pressure (96). The torque converter clutch is then engaged securely. Under this condition, the torque converter clutch is engaged by pressure from the torque converter; this condition is partial lock-up.

Full Lock-Up

When the vehicle speed further increases, the PCM controls the CVT lock-up clutch control solenoid valve to increase LC control pressure (LCC). LC control pressure (LCC) is applied to the LC control valve, and moves the LC control valve. Under this condition, torque converter back pressure is released fully, causing the torque converter clutch to be fully engaged.

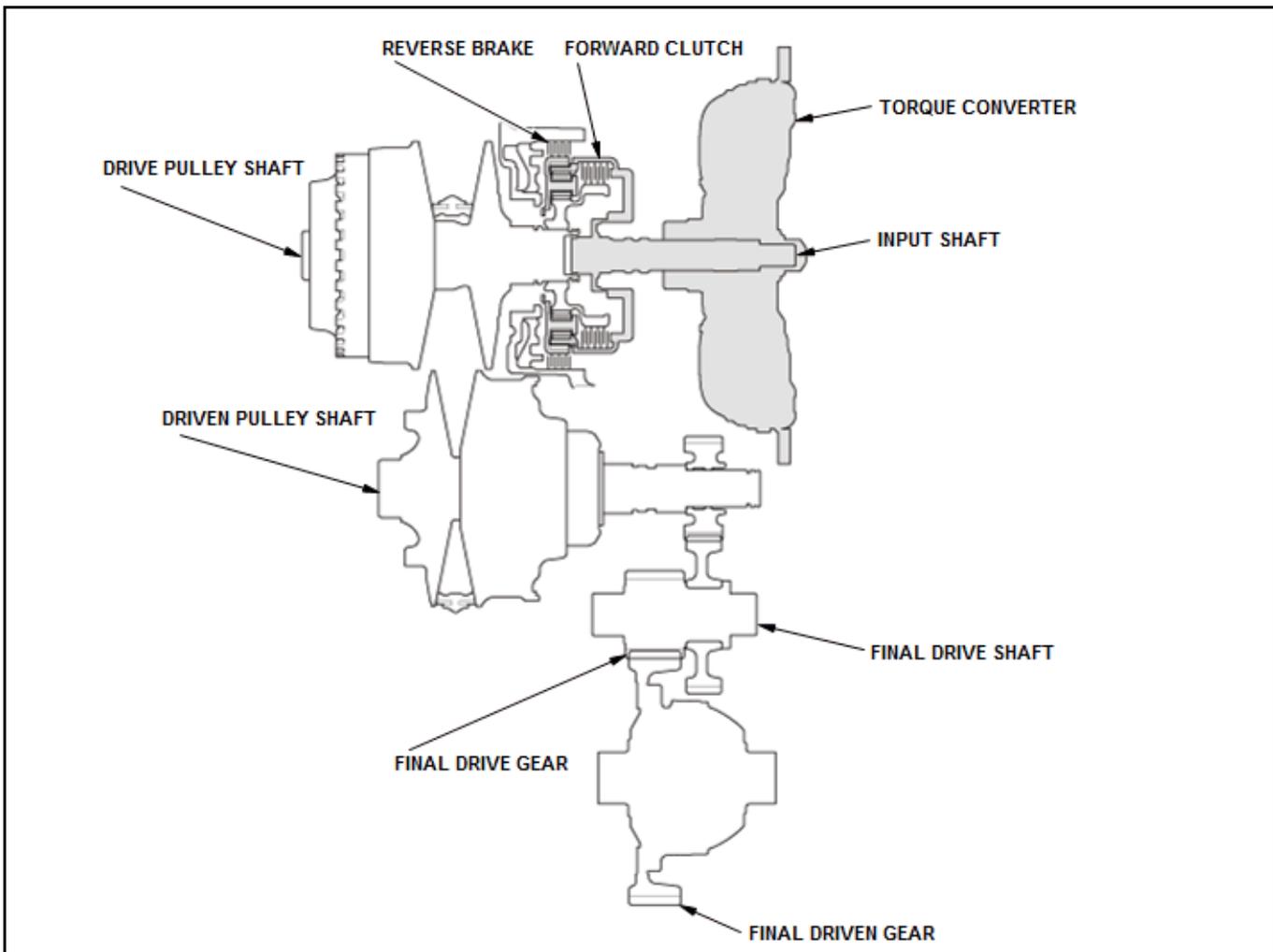
CVT SYSTEM DESCRIPTION - POWER FLOW (CVT)

P Position

Hydraulic pressure is not applied to the forward clutch and the reverse brake. Power is not transmitted to the secondary drive gear. The driven pulley is locked by the park pawl interlocking the park gear.

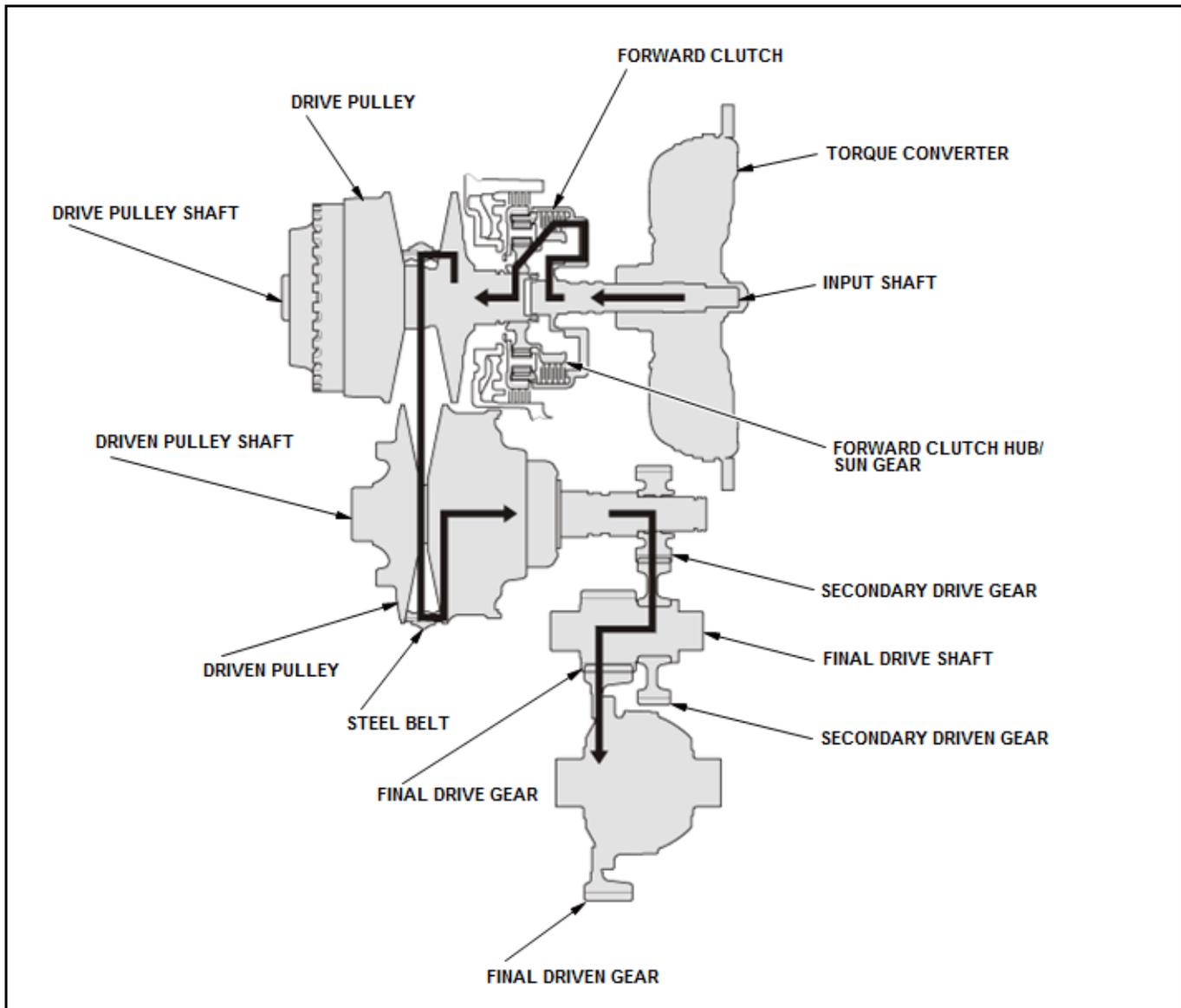
N Position

Engine power transmitted from the torque converter drives the input shaft, but the hydraulic pressure is not applied to the forward clutch and the reverse brake. Power is not transmitted to the drive pulley shaft.



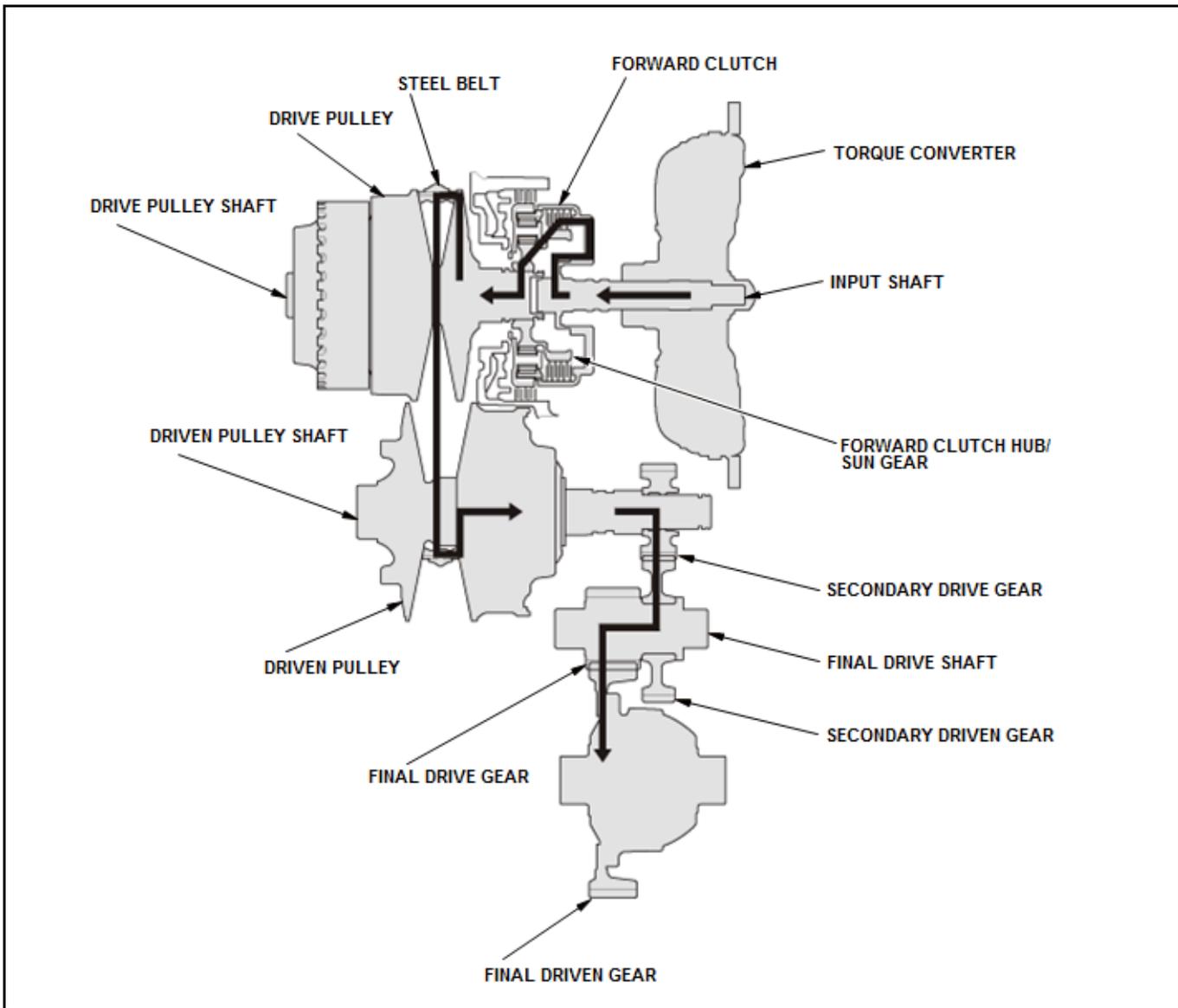
Low Speed Range

- Hydraulic pressure is applied to the forward clutch, then the forward clutch engages the forward clutch hub/sun gear with the drive pulley shaft.
- The drive pulley shaft drives the driven pulley shaft linked by the steel belt.
- The driven pulley shaft drives the secondary driven gear via the secondary drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear.
- At low speed range; pulley ratio high, the drive pulley receives lower pressure than driven pulley received pressure, the drive pulley applies the small-pulley-diameter to the steel belt.



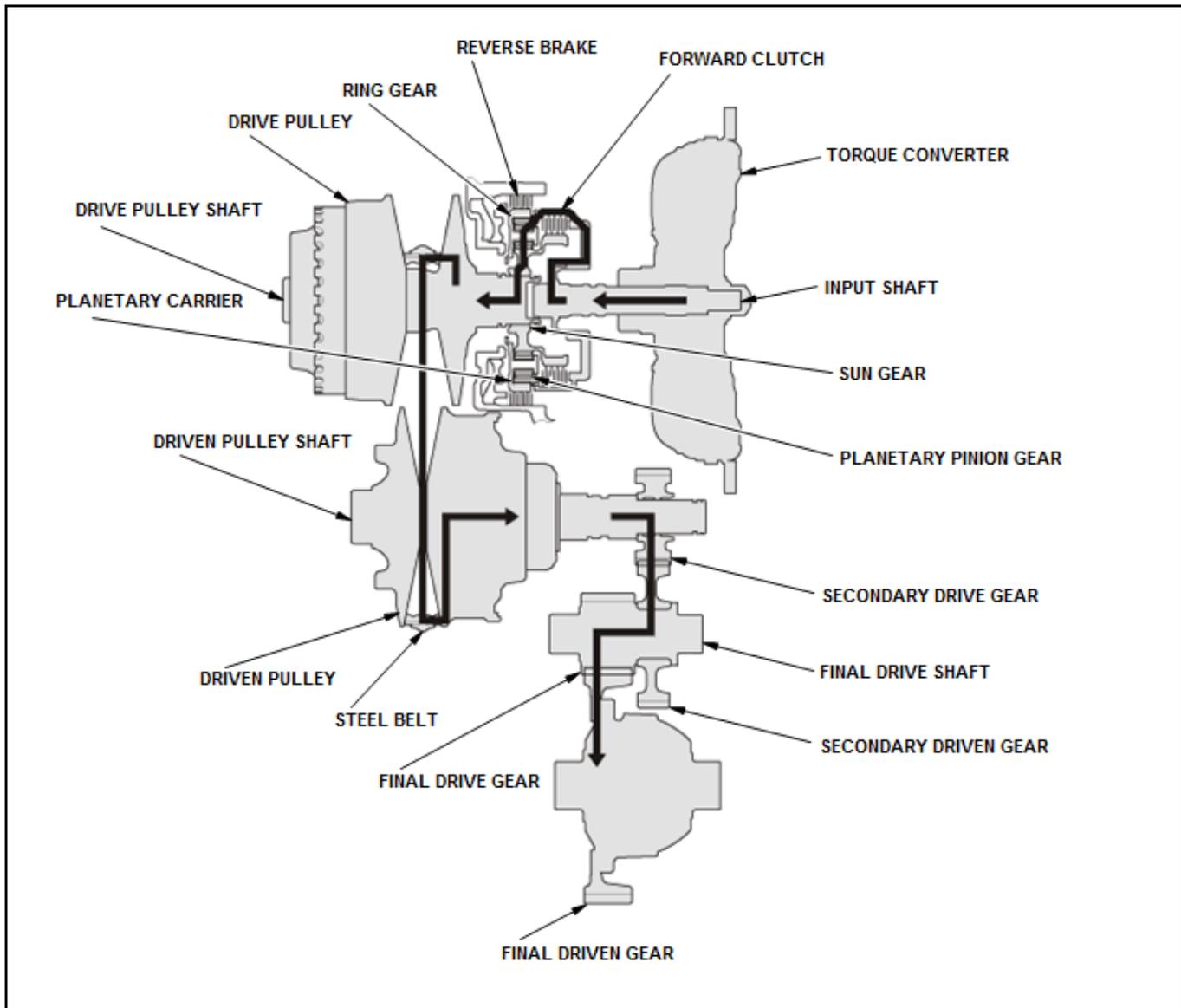
High Speed Range

- Power flow to the final driven gear is the same as at the low speed range.
- As the vehicle speed is increased, the drive pulley pressure is increased by the CVT drive pulley pressure control solenoid valve, and the driven pulley pressure is decreased by the CVT driven pulley pressure control solenoid valve.
- At high speed range; pulley ratio low, the drive pulley receives higher pressure than driven pulley received pressure, the drive pulley applies the large-pulley-diameter to the steel belt.



R Position

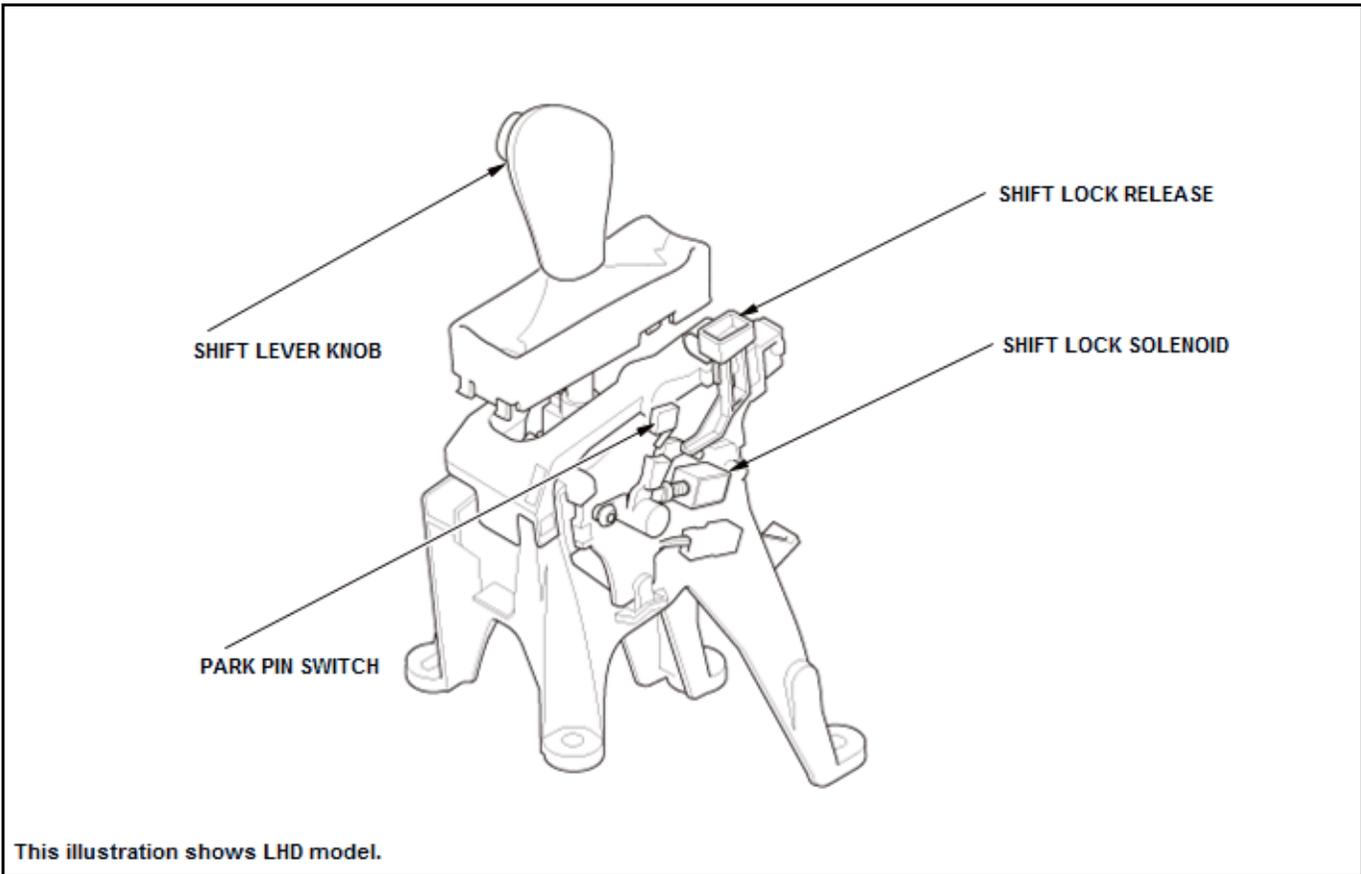
- Hydraulic pressure is applied to the reverse brake, and the planetary carrier locks with the reverse brake.
- The ring gear joined with the forward clutch drum and the input shaft drives the sun gear via the planetary pinion gears.
- The sun gear rotates in the reverse direction from the input shaft rotational direction, and drives the drive pulley shaft.
- The drive pulley shaft drives the driven pulley shaft linked by the steel belt.
- The driven pulley shaft drives the secondary driven gear via the secondary drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear.



CVT SYSTEM DESCRIPTION - SHIFT LOCK SYSTEM (CVT)

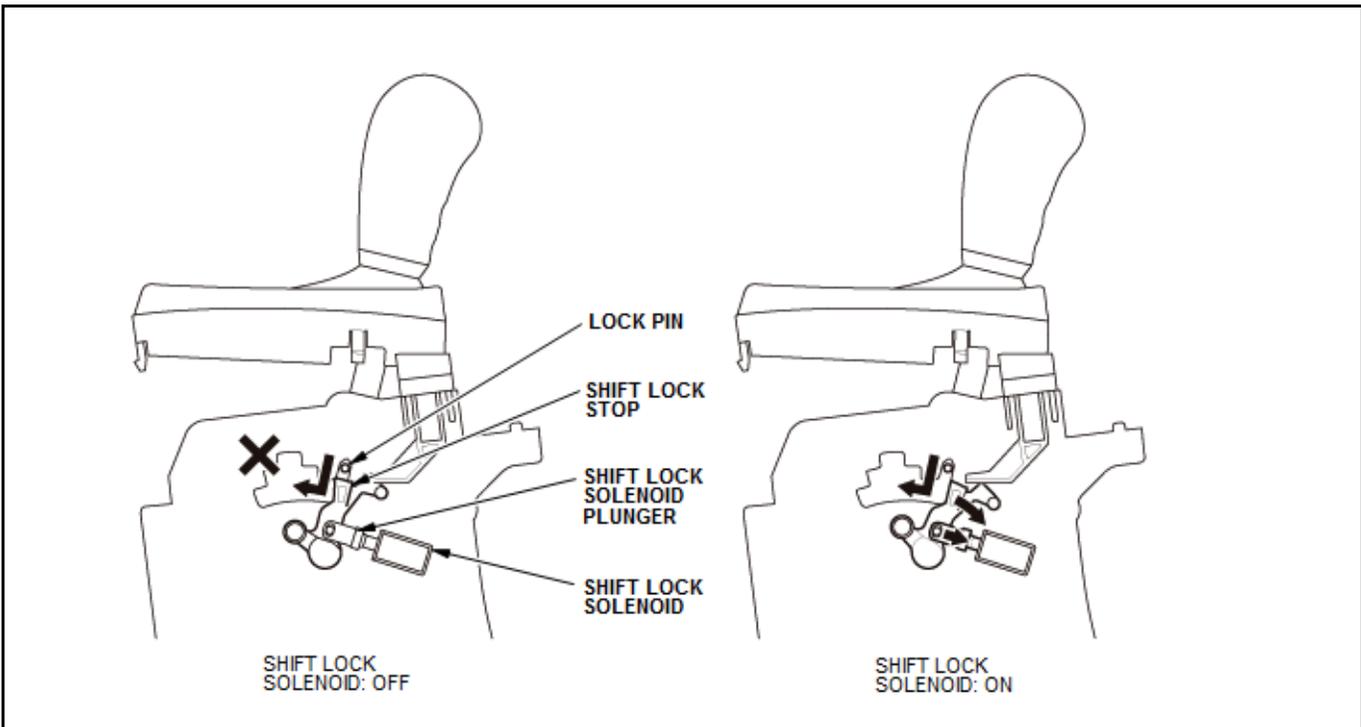
Shift Lever Assembly

The shift lever equips the shift lock function. Also, the parking pin switch is used for one of the key interlock system and installed on the shift lever, and sends the parking position signal (shift lever is in P position/mode) to the Multiplex Integrated Control Unit (MICU). The MICU controls that the ignition key can be pulled out from the key cylinder only when the shift lever is in P position/mode.



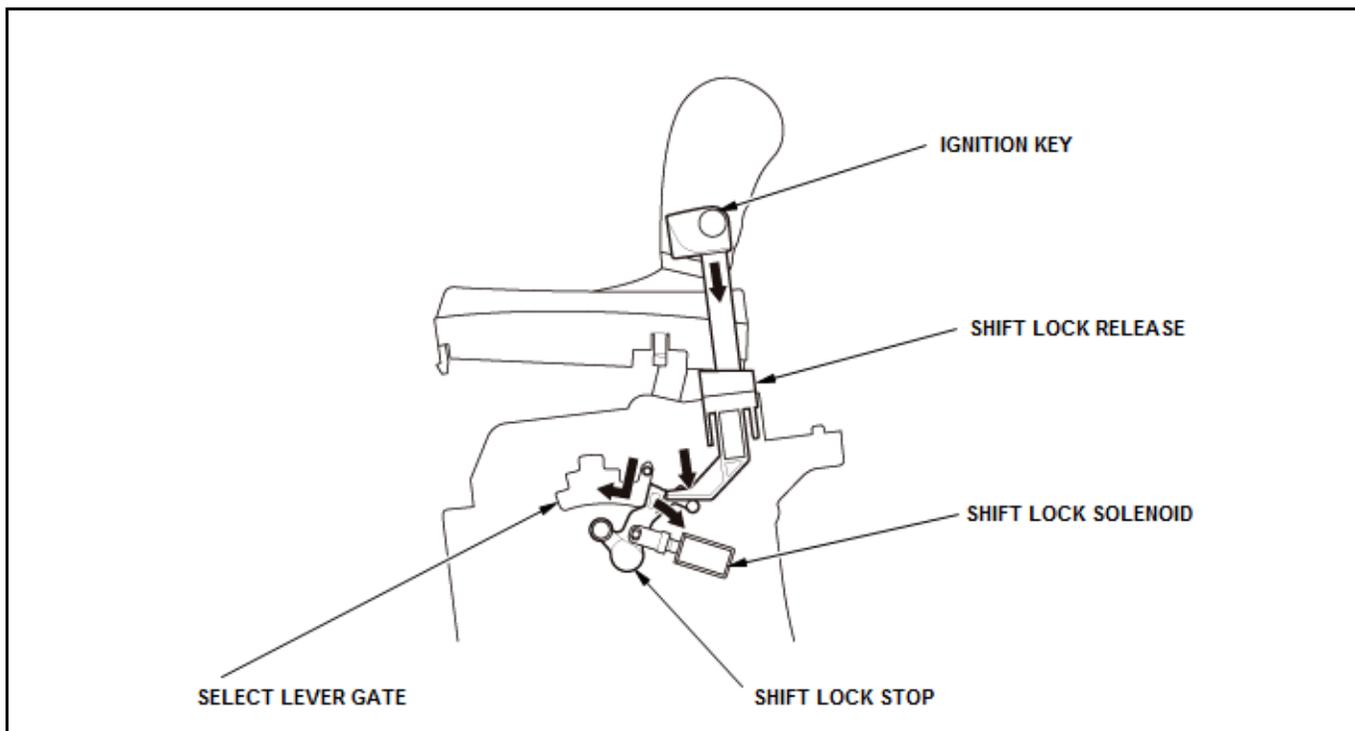
Shift Lock System

The shift lock system prevents the shift lever from moving unless certain conditions are met. The shift lock solenoid is normally OFF. After starting the engine in P position/mode, the shift lock stop prevents the shift lever from moving to any other positions / modes from P position/mode. When the brake pedal is pressed and the accelerator pedal is not pressed, the PCM commands the shift lock solenoid ON; the shift lock solenoid plunger in the shift lock solenoid pulls the shift lock stop to release the lock pin. Pressing the shift lever button allows the shift lever to move to any other positions / modes. When the brake pedal and the accelerator pedal are pressed at the same time, the PCM commands the shift lock solenoid OFF and the shift lock system is locked.



Shift Lock Release

When the shift lock system does not operate due to mechanical or electrical problem, you can unlock the shift lock temporarily by inserting the ignition key into the shift lock release hole and pressing the shift lock release. When the shift lock release is pressed, the shift lock stop releases the lock pin, and the shift lever can move to any other positions / modes.



DTC TROUBLESHOOTING INDEX

CVT SYSTEM DTC TROUBLESHOOTING INDEX (KA/KC CVT)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information - Refer to: [How to Troubleshoot the Fuel and Emissions Systems](#), or [How to Troubleshoot the CVT System \(CVT\)](#).

DTC ^{*(1)}	Two Drive Cycle Detection	A/T Gear Position Indicator	MIL	Detection Item
P0501 (36) ^{*(2)}	-	Blinks	ON	CVT Speed Sensor Circuit Range/Performance
P0502 (36) ^{*(2)}	-	Blinks	ON	CVT Speed Sensor Circuit Open/Short
P0705 (5) ^{*(2)}	-	Blinks	ON	Transmission Range Switch Multiple Shift Position Input
P0706 (6) ^{*(2)}	-	OFF	ON	Transmission Range Switch Open
P0711 (28) ^{*(2)}	-	Blinks	OFF	CVT Fluid Temperature Sensor (Rang/Performance)
P0712 (28) ^{*(2)}	-	Blinks	OFF	CVT Fluid Temperature Sensor (Short)
P0713 (28) ^{*(2)}	-	Blinks	OFF	CVT Fluid Temperature Sensor (Open)
P0714 (28) ^{*(2)}	-	Blinks	OFF	CVT Fluid Temperature Sensor (Intermittent Failure)
P0716 (52) ^{*(2)}	-	Blinks	ON	Input/Turbine Speed Sensor "A" Circuit Range/Performance
P0717 (52) ^{*(2)}	-	Blinks	ON	Input/Turbine Speed Sensor "A" Circuit No Signal
P0741 (40)	-	Blinks	ON	Torque Converter Clutch Circuit Performance or Stuck OFF
P0746 (104)	-	Blinks	ON	CVT Drive Pulley Pressure Control Solenoid Valve Stuck OFF
P0777 (105)	-	Blinks	ON	CVT Driven Pulley Pressure Control Solenoid Valve Stuck ON
P0780 (100) ^{*(3)}	-	Blinks	ON	Shift Error
P0792 (34) ^{*(2)}	-	Blinks	ON	Intermediate Shaft Speed Sensor "A" Circuit Range/Performance
P0793 (34) ^{*(2)}	-	Blinks	ON	Intermediate Shaft Speed Sensor "A" Circuit No Signal
P0796 (106)	-	Blinks	ON	Pressure Control Solenoid Valve "C" Performance or Stuck OFF
P0797 (106)	-	Blinks	ON	Pressure Control Solenoid Valve "C" Stuck ON
P0842 (56) ^{*(2)}	-	Blinks	OFF	Transmission Fluid Pressure Sensor/Switch "A" Circuit Low
P0843 (56) ^{*(2)}	-	Blinks	OFF	Transmission Fluid Pressure Sensor/Switch "A" Circuit High
P0962 (38) ^{*(2)}	-	Blinks	ON	CVT Drive Pulley Pressure Control Valve Circuit Low
P0963 (38) ^{*(2)}	-	Blinks	ON	CVT Drive Pulley Pressure Control Valve Circuit High
P0966 (39) ^{*(2)}	-	Blinks	ON	CVT Driven Pulley Pressure Control Valve Circuit Low
P0967 (39) ^{*(2)}	-	Blinks	ON	CVT Driven Pulley Pressure Control Valve Circuit High
P0970 (50) ^{*(2)}	-	Blinks	ON	Pressure Control Solenoid "C" Control Circuit Low
P0971 (50) ^{*(2)}	-	Blinks	ON	Pressure Control Solenoid "C" Control Circuit High
P0976 (8) ^{*(2)}	-	Blinks	ON	Shift Solenoid Valve "B" Circuit Low
P0977 (8) ^{*(2)}	-	Blinks	ON	Shift Solenoid Valve "B" Circuit High
P1717 (62) ^{*(2)}	-	Blinks	OFF	Transmission Range Switch ATP RVS Switch (Open or Short)
P1840 (36) ^{*(2)}	-	Blinks	OFF	CVT Speed Sensor Circuit Forward Rotation Range/Performance
P1841 (36) ^{*(2)}	-	Blinks	OFF	CVT Speed Sensor Circuit Reverse Rotation Range/Performance
P1844 (34) ^{*(2)}	-	Blinks	OFF	CVT Input Shaft Speed Sensor Circuit Forward Rotation Range/Performance
P1845 (34) ^{*(2)}	-	Blinks	OFF	CVT Input Shaft Speed Sensor Circuit Reverse Rotation Range/Performance
P1855 (58) ^{*(2)}	-	OFF	OFF	Inclination Sensor Circuit Range/Performance

DTC*(1)	Two Drive Cycle Detection	A/T Gear Position Indicator	MIL	Detection Item
P1890 (42)	-	Blinks	OFF	CVT Speed Control System
P1898 (100)	-	Blinks	ON	CVT Drive Pulley Pressure Control Valve Stuck ON or CVT Driven Pulley Pressure Control Valve Stuck OFF
P1899 (100)	-	Blinks	ON	CVT Drive Pulley Pressure Control Valve Stuck OFF or CVT Driven Pulley Pressure Control Valve Stuck ON
P2715 (102)	-	Blinks	ON	Pressure Control Solenoid "D" Stuck On
P2720 (51) *(2)	-	Blinks	ON	Pressure Control Solenoid "D" Control Circuit Low
P2721 (51) *(2)	-	Blinks	ON	Pressure Control Solenoid "D" Control Circuit High

NOTE: *(1): The DTC in parentheses is the flash code the A/T gear position 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. *(3): This code is stored whenever DTCs P1898 or P1899 are detected.

TESTING

CVT CLUTCH PRESSURE CONTROL SOLENOID VALVE TEST (CVT)

Test

1. **Vehicle - Lift**
2. **Engine Undercover - Remove** (With 2WD)
3. CVT Clutch Pressure Control Solenoid Valve - Test

1. Disconnect the connector (A).

NOTE:

- To prevent damage, cover the connector using a shop towel.
- Check the connector for corrosion, dirt, or oil, and clean or repair if necessary.

2. Measure the CVT clutch pressure control solenoid valve resistance between connector (B) terminal No. 6 and body ground.

Standard:	4.6-6.3 Ω
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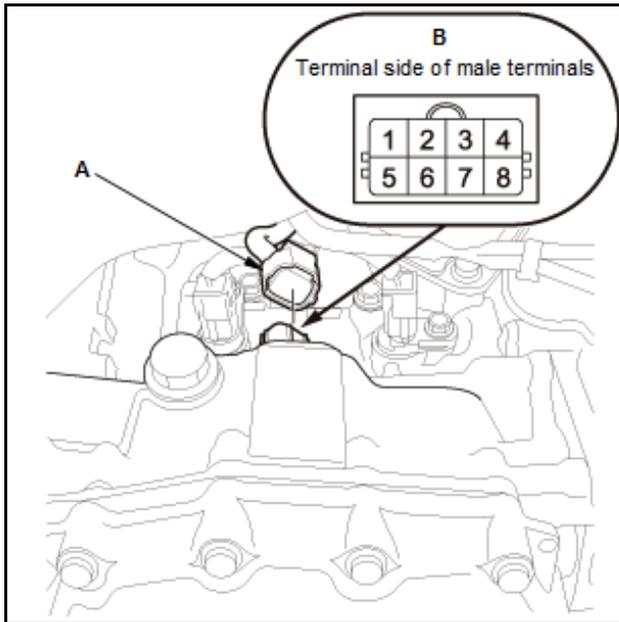
- If the resistance is within the standard, go to the next step, and check the CVT clutch pressure control solenoid valve operation.
 - If the resistance is out of the standard, check for open or short in the solenoid wire harness, and check for poor connection at ground T12. If the solenoid wire harness is OK, **replace the CVT clutch pressure control solenoid valve**.
3. Connect a jumper wire from the positive battery terminal to connector (B) terminal No. 6, and connect another jumper wire from the negative battery terminal to body ground. A clicking sound should be heard.
 - If a clicking sound is heard, the test is complete.
 - If no clicking sound is heard, **replace the CVT clutch pressure control solenoid valve**.
 4. All Removed Parts - Install

A	1. Install the parts in the reverse order of removal.
----------	---

CVT DRIVE PULLEY PRESSURE CONTROL SOLENOID VALVE TEST (CVT)

Test

1. **Vehicle - Lift**
2. **Engine Undercover - Remove** (With 2WD)
3. CVT Drive Pulley Pressure Control Solenoid Valve - Test



1. Disconnect the connector (A).

NOTE:

- To prevent damage, cover the connector using a shop towel.
- Check the connector for corrosion, dirt, or oil, and clean or repair if necessary.

2. Measure the CVT drive pulley pressure control solenoid valve resistance between connector (B) terminal No. 8 and body ground.

Standard:	4.6-6.3 Ω
------------------	-----------

- If the resistance is within the standard, go to the next step, and check the CVT drive pulley pressure control solenoid valve operation.
- If the resistance is out of the standard, check for open or short in the solenoid wire harness, and check for poor connection at ground T12. If the solenoid wire harness is OK, **replace the CVT drive pulley pressure control solenoid valve**.

3. Connect a jumper wire from the positive battery terminal to connector (B) terminal No. 8, and connect another jumper wire from the negative battery terminal to body ground. A clicking sound should be heard.

- If a clicking sound is heard, the test is complete.
- If no clicking sound is heard, **replace the CVT drive pulley pressure control solenoid valve**.

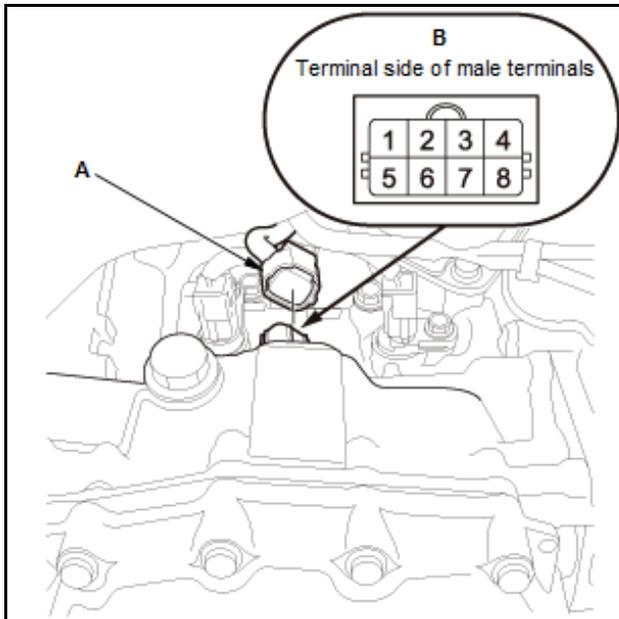
4. All Removed Parts - Install

A	1. Install the parts in the reverse order of removal.
----------	---

CVT DRIVEN PULLEY PRESSURE CONTROL SOLENOID VALVE TEST (CVT)

Test

1. **Vehicle - Lift**
2. **Engine Undercover - Remove** (With 2WD)
3. CVT Driven Pulley Pressure Control Solenoid Valve - Test



1. Disconnect the connector (A).

NOTE:

- To prevent damage, cover the connector using a shop towel.
- Check the connector for corrosion, dirt, or oil, and clean or repair if necessary.

2. Measure the CVT driven pulley pressure control solenoid valve resistance between connector (B) terminal No. 7 and body ground.

Standard:	4.6-6.3 Ω
------------------	-----------

- If the resistance is within the standard, go to the next step, and check the CVT driven pulley pressure control solenoid valve operation.
- If the resistance is out of the standard, check for open or short in the solenoid wire harness, and check for poor connection at ground T12. If the solenoid wire harness is OK, **replace the**

CVT driven pulley pressure control solenoid valve .

3. Connect a jumper wire from the positive battery terminal to connector (B) terminal No. 7, and connect another jumper wire from the negative battery terminal to body ground. A clicking sound should be heard.

- If a clicking sound is heard, the test is complete.
- If no clicking sound is heard, **replace the CVT driven pulley pressure control solenoid valve .**

4. All Removed Parts - Install

A	1. Install the parts in the reverse order of removal.
---	---

CVT LOCK-UP CLUTCH CONTROL SOLENOID VALVE TEST (CVT)

Test

1. **Vehicle - Lift**
2. **Engine Undercover - Remove** (With 2WD)
3. CVT Lock-Up Clutch Control Solenoid Valve - Test (On Vehicle)

	<p>1. Disconnect the connector (A).</p> <p>NOTE:</p> <ul style="list-style-type: none"> • To prevent damage, cover the connector using a shop towel. • Check the connector for corrosion, dirt, or oil, and clean or repair if necessary. <p>2. Measure the CVT lock-up clutch control solenoid valve resistance between connector (B) terminal No. 5 and body ground.</p>
--	---

Standard:	4.6-6.3 Ω
------------------	-----------

- If the resistance is within the standard, go to the next step, and check the CVT lock-up clutch control solenoid valve operation.
- If the resistance is out of the standard, check for open or short in the solenoid wire harness, and check for poor connection at ground T12. If the solenoid wire harness is OK, **replace the CVT lock-up clutch control solenoid valve .**

3. Connect a jumper wire from the positive battery terminal to connector (B) terminal No. 5, and connect another jumper wire from the negative battery terminal to body ground. A clicking sound should be heard.

- If a clicking sound is heard, the test is complete.
- If no clicking sound is heard, **replace the CVT lock-up clutch control solenoid valve .**

4. **Transmission Fluid Pan - Remove**

NOTE: The actual transmission fluid (HCF-2) capacity will vary from the specified capacity based on the length of time the transmission fluid pan is off the transmission. Avoid leaving the transmission fluid pan off for extend periods of time.

5. **Valve Body Assembly - Remove**

6. CVT Driven Pulley Pressure Control Solenoid Valve - Remove

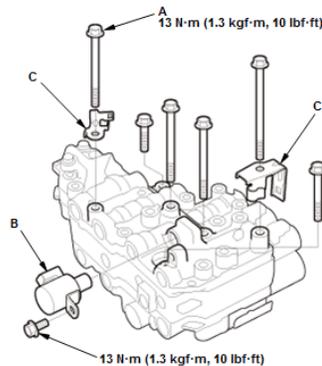


Fig. 19: CVT Driven Pulley Pressure Control Solenoid Valve With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

	1. Remove these parts in the following order. <ul style="list-style-type: none"> • Shift solenoid valve B • Bolts (A) • Harness clamp brackets (C)
--	---

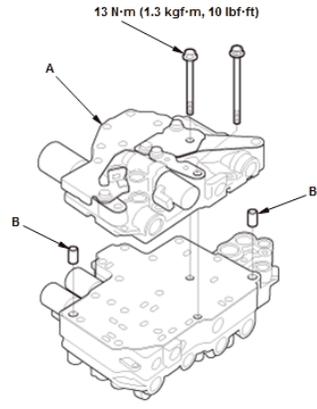
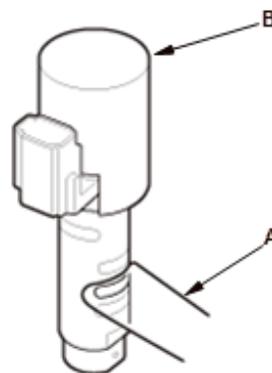
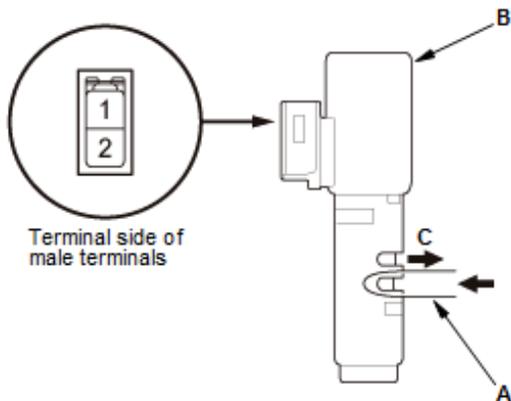


Fig. 20: Secondary Valve Body With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

	2. Remove the secondary valve body (A) with the dowel pins (B).
--	---

	3. Remove the lock pin (A), then remove the CVT lock-up clutch control solenoid valve (B).
--	--

7. CVT Lock-Up Clutch Control Solenoid Valve - Test (Off Vehicle)



1. Connect a tube (A) to the CVT lock-up clutch control solenoid valve (B)

2. Connect a jumper wire from the positive battery terminal to connector terminal No. 2, and connect another jumper wire from the negative battery terminal to connector terminal No. 1. Blow air into the tube (A).

- If the air goes out of the port (C), go to the next step.
- If the air does not go out of the port (C), [replace the CVT lock-up clutch control solenoid valve](#).

3. Disconnect the jumper wires. Blow air into the tube.

- If the air goes out of the port (C), [replace the CVT lock-up clutch control solenoid valve](#).
- If the air does not go out of the port (C), repair the wire between the CVT lock-up clutch control solenoid valve and the PCM.

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8. All Removed Parts - Install

1	1. Install the parts in the reverse order of removal.
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CVT PRESSURE TEST (CVT)

Special Tools Required

Image	Description/Tool Number
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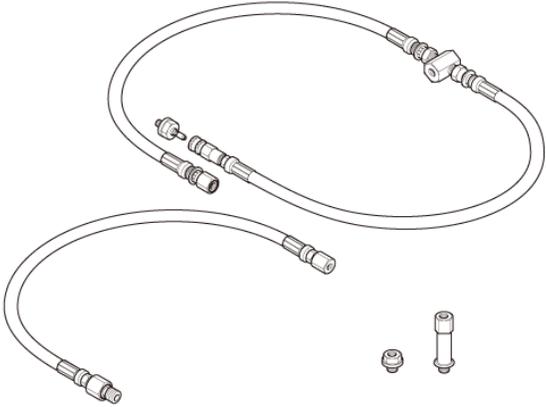
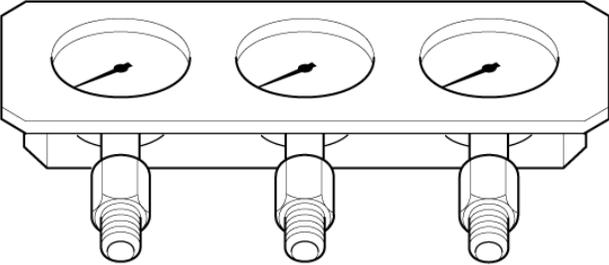
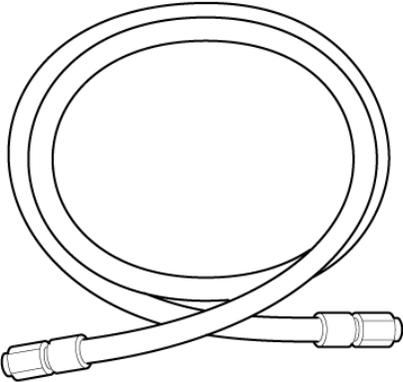
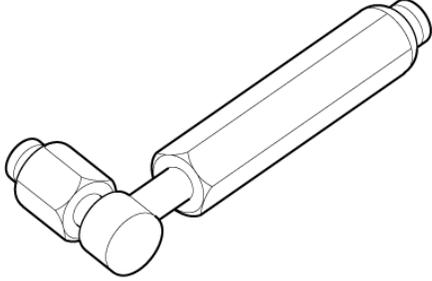
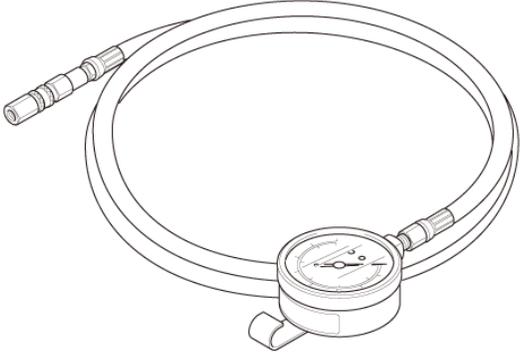
Image	Description/Tool Number
 <p>The image shows a pressure gauge adapter consisting of a long, flexible hose with several fittings. One end has a larger fitting, and the other has a smaller one. There are also two small, separate components shown below the main assembly: a small nut and a small plug.</p>	<p>Pressure Gauge Adapter 070AJ-RT4A101</p>
 <p>The image shows a rectangular manifold with three circular gauges mounted on top. Each gauge has a needle and a scale. Below each gauge is a threaded fitting for a hose connection.</p>	<p>A/T Oil Pressure Gauge Set 07406-0020400 or 07406-0020401</p>
 <p>The image shows a coiled pressure test hose with two fittings at the ends. The hose is made of a flexible material and is shown in a loose coil.</p>	<p>A/T Pressure Test Hose 07AAJ-PY4A100</p>

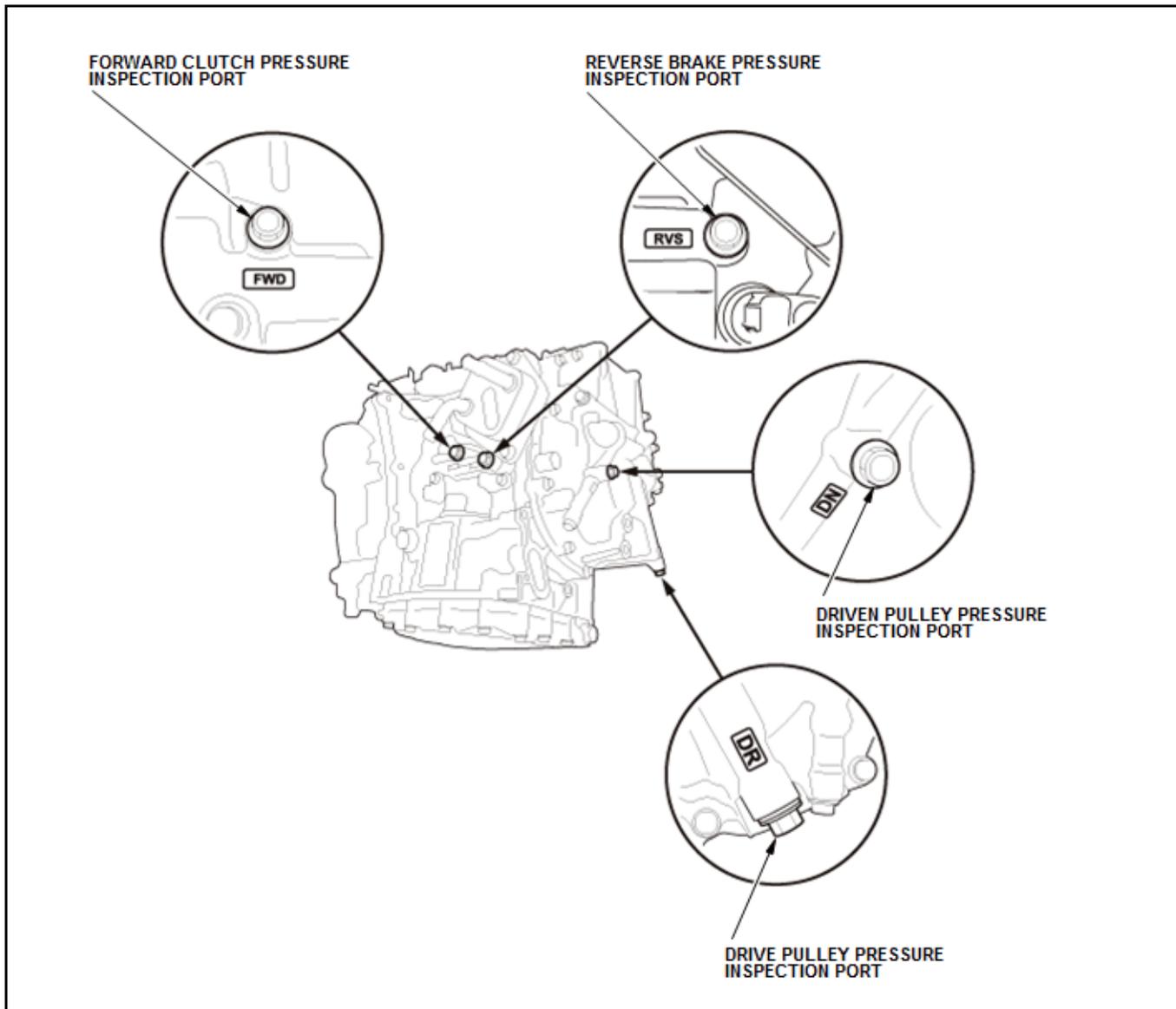
Image	Description/Tool Number
	A/T Pressure Adapter 07MAJ-PY40120
	A/T High Pressure Gauge 07AAJ-PLYA100

Test

NOTE:

- Check for DTCs. If any DTCs are stored, troubleshoot and clear them first.
- Do not allow dust or other foreign particles to enter the port while installing the A/T oil pressure gauge.
- Do not allow dust or other foreign particles to enter the inspection port.
- Do not test pressure for more than 10 seconds at a time.
- Do not change the transmission position/mode while raising the engine speed.
- Be sure to check the transmission fluid level after each pressure test. When installing or removing the A/T oil pressure gauge, transmission fluid may run out of the inspection ports.
- VSA DTC(s) may come on during the test-drive. If the VSA DTC(s) come on, clear the DTC(s) after testing is done with the HDS.

Pressure Inspection Port



1. Vehicle - Lift
2. Engine Undercover - Remove (With 2WD)
3. Left Front Splash Shield - Remove
4. Engine - Warm Up

<p>Ā</p>	<ol style="list-style-type: none"> 1. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice) 2. Turn the engine off.
----------	--

5. Transmission Fluid Level - Check
6. Forward Clutch Pressure - Test

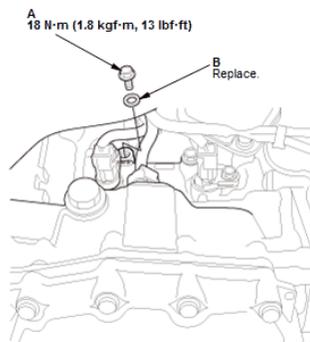
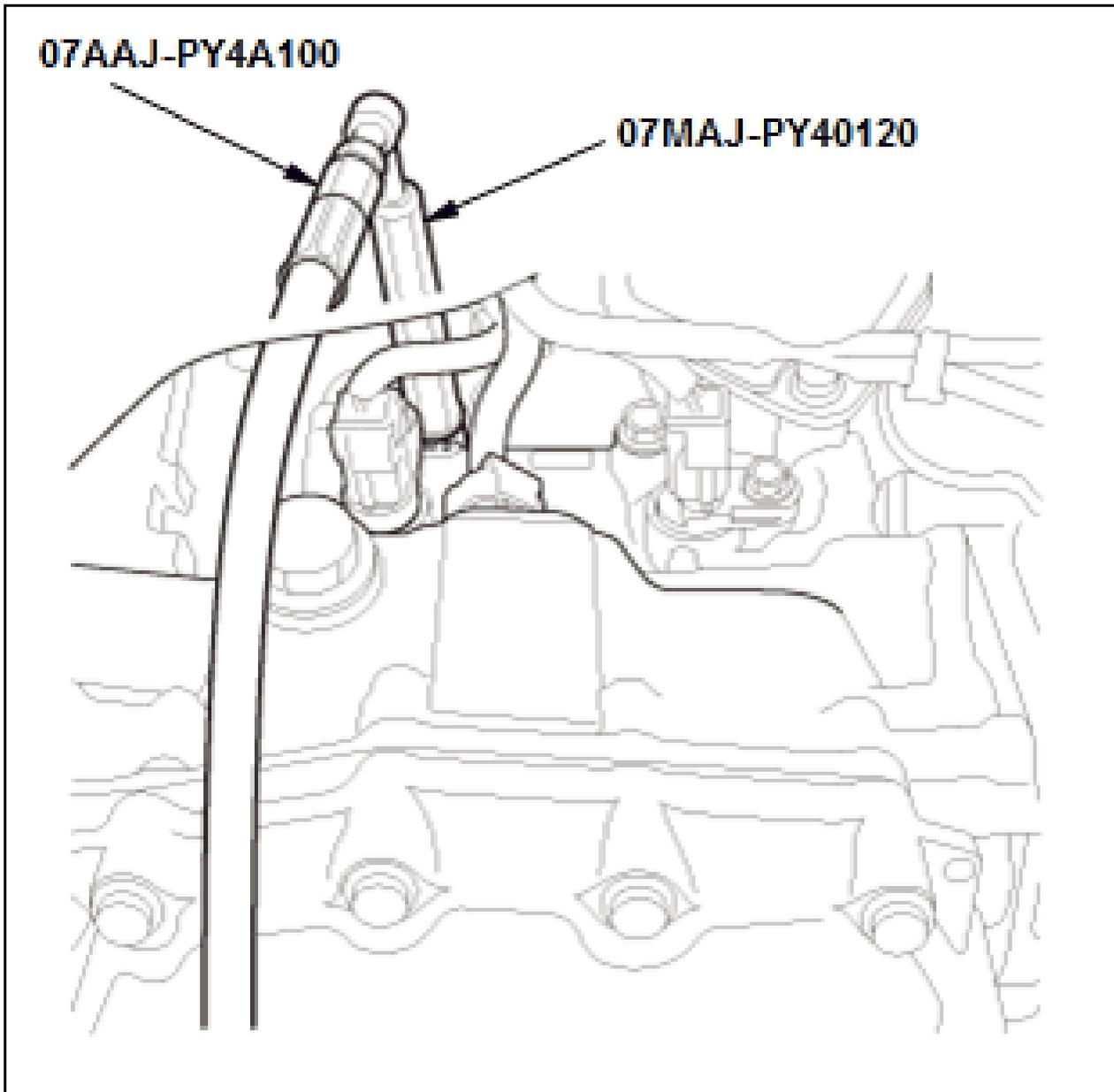


Fig. 21: Forward Clutch Pressure Test Port With Torque Specifications

A	1. Remove the sealing bolt (A) with the sealing washer (B).
---	---

2. Install the A/T oil pressure gauge set to the forward clutch pressure inspection port.



3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice)

4. Shift the transmission to D position/mode

5. Measure the forward clutch pressure at the engine idling while firmly pressing the brake pedal.

Pressure	Standard
Forward clutch	390-880 kPa (3.98-8.97 kgf/cm ² , 56.6-127.6 psi)

6. Turn the engine off

7. If the forward clutch pressure is out of the standard, refer to the problem and probable cause(s) listed in the table.

Problem	Probable cause(s)
No or low forward clutch pressure	<ul style="list-style-type: none"> • Transmission fluid pump defective • Valve body defective • CVT clutch pressure control solenoid valve defective • Forward clutch defective

8. Remove the A/T oil pressure gauge

9. Install the sealing bolt with a new sealing washer to the forward clutch pressure inspection port.

7. Reverse Brake Pressure - Test

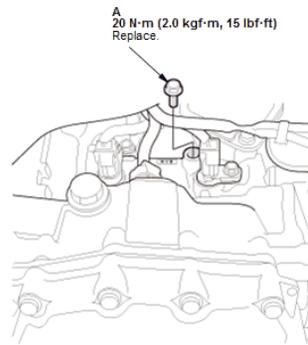
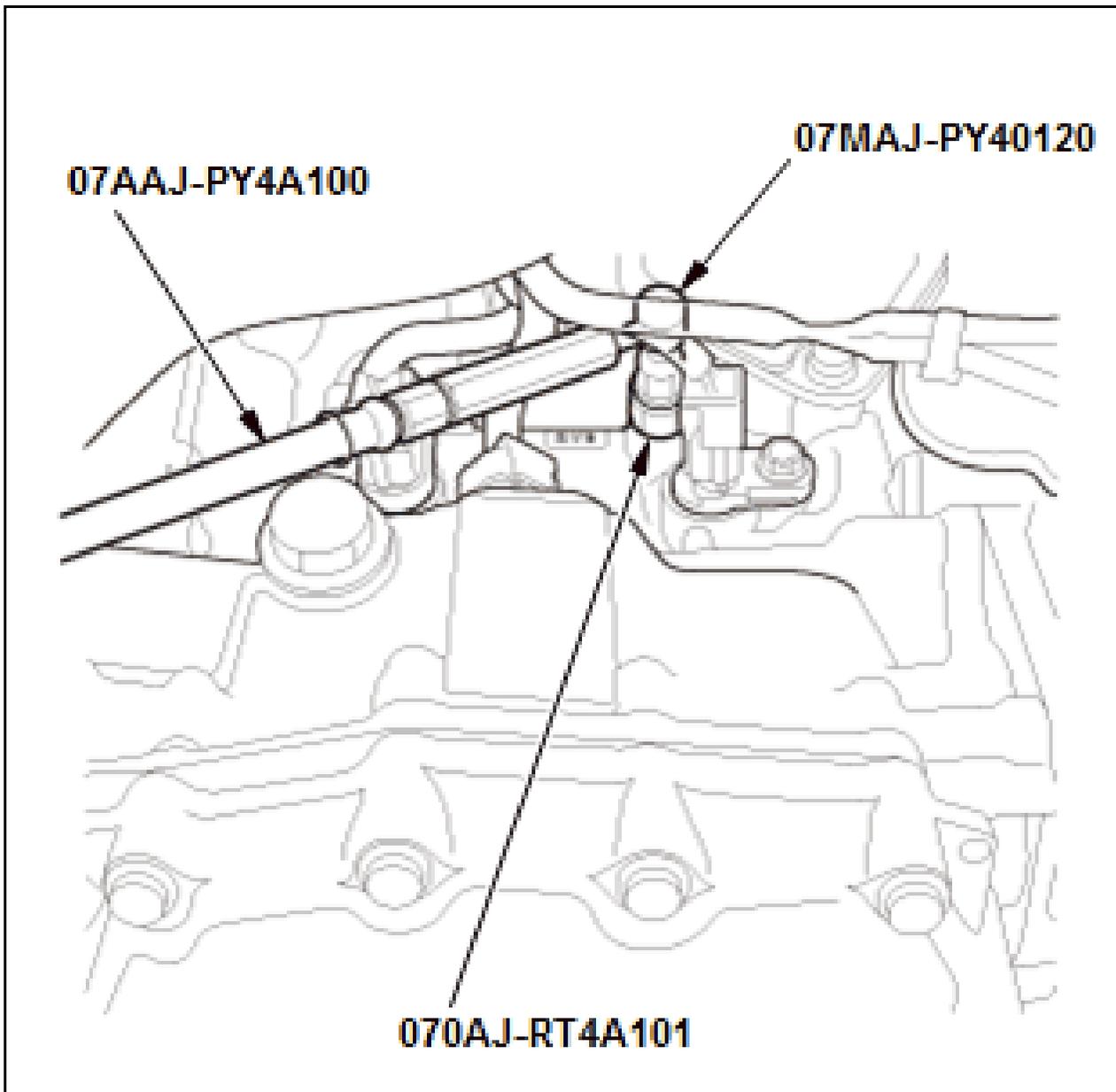


Fig. 22: Reverse Brake Pressure Test Port With Torque Specifications
Courtesy of HONDA, U.S.A., INC.

Ã	1. Remove the sealing bolt (A).
---	---------------------------------

2. Install pressure gauge adapter C to the reverse brake pressure inspection port.



3. Install the A/T oil pressure gauge set to pressure gauge adapter C

4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice)

5. Shift the transmission to R position/mode

6. Measure the reverse brake pressure at engine idling while firmly pressing the brake pedal.

Pressure	Standard
Reverse brake	390-880 kPa (3.98-8.97 kgf/cm ² , 56.6-127.6 psi)

7. Turn the engine off

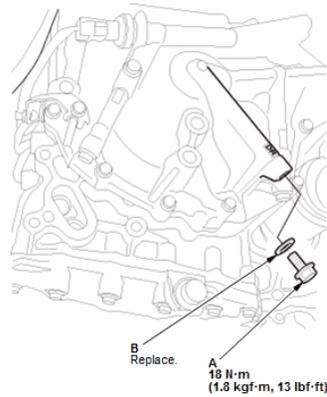
8. If the reverse brake pressure is out of the standard, refer to the problem and probable cause(s) listed in the table.

Problem	Probable cause(s)
No or low reverse brake pressure	<ul style="list-style-type: none"> • Transmission fluid pump defective • Valve body defective • CVT clutch pressure control solenoid valve defective • Reverse brake defective

9. Remove the A/T oil pressure gauge

10. Install a new sealing bolt to the reverse brake pressure inspection port.

8. Drive Pulley Pressure - Test



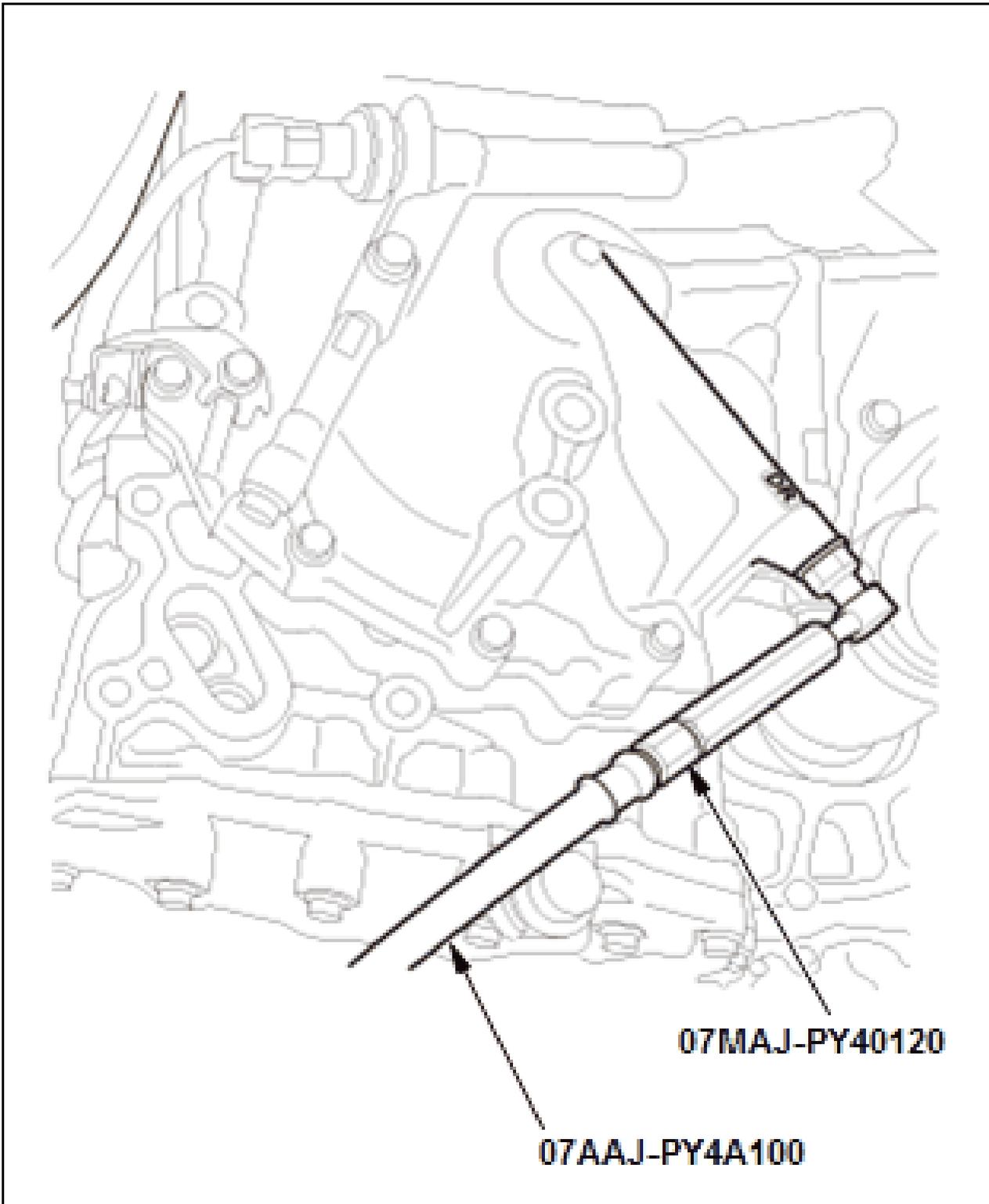
This illustration shows without auto idle stop system.

Fig. 23: Drive Pulley Pressure Test Port With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

1. Remove the sealing bolt (A) with the sealing washer (B).

2. Install the A/T oil pressure gauge set to the drive pulley pressure inspection port.



3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice)
4. Shift the transmission to N position/mode
5. Measure the drive pulley pressure at engine idling while firmly pressing the brake pedal.

Pressure	Standard
Drive pulley	590-1, 140 kPa (6.02-11.62 kgf/cm ² , 85.6-165.3 psi)

6. Turn the engine off
7. If the drive pulley pressure is out of the standard, refer to the problem and probable cause(s) listed in the table.

Problem	Probable cause(s)
No or low drive pulley pressure	<ul style="list-style-type: none"> • Transmission fluid pump defective

Problem	Probable cause(s)
	<ul style="list-style-type: none"> • Valve body defective • CVT drive pulley pressure control solenoid valve defective
Drive pulley pressure too high	<ul style="list-style-type: none"> • Valve body defective • CVT drive pulley pressure control solenoid valve defective

8. Remove the A/T oil pressure gauge

9. Install the sealing bolt with a new sealing washer to the drive pulley pressure inspection port.

9. Driven Pulley Pressure - Test

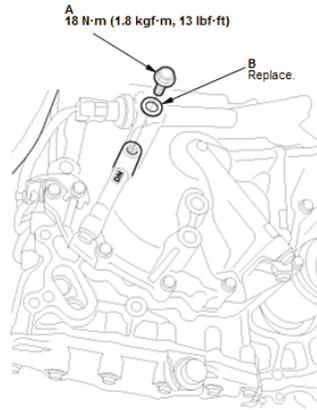
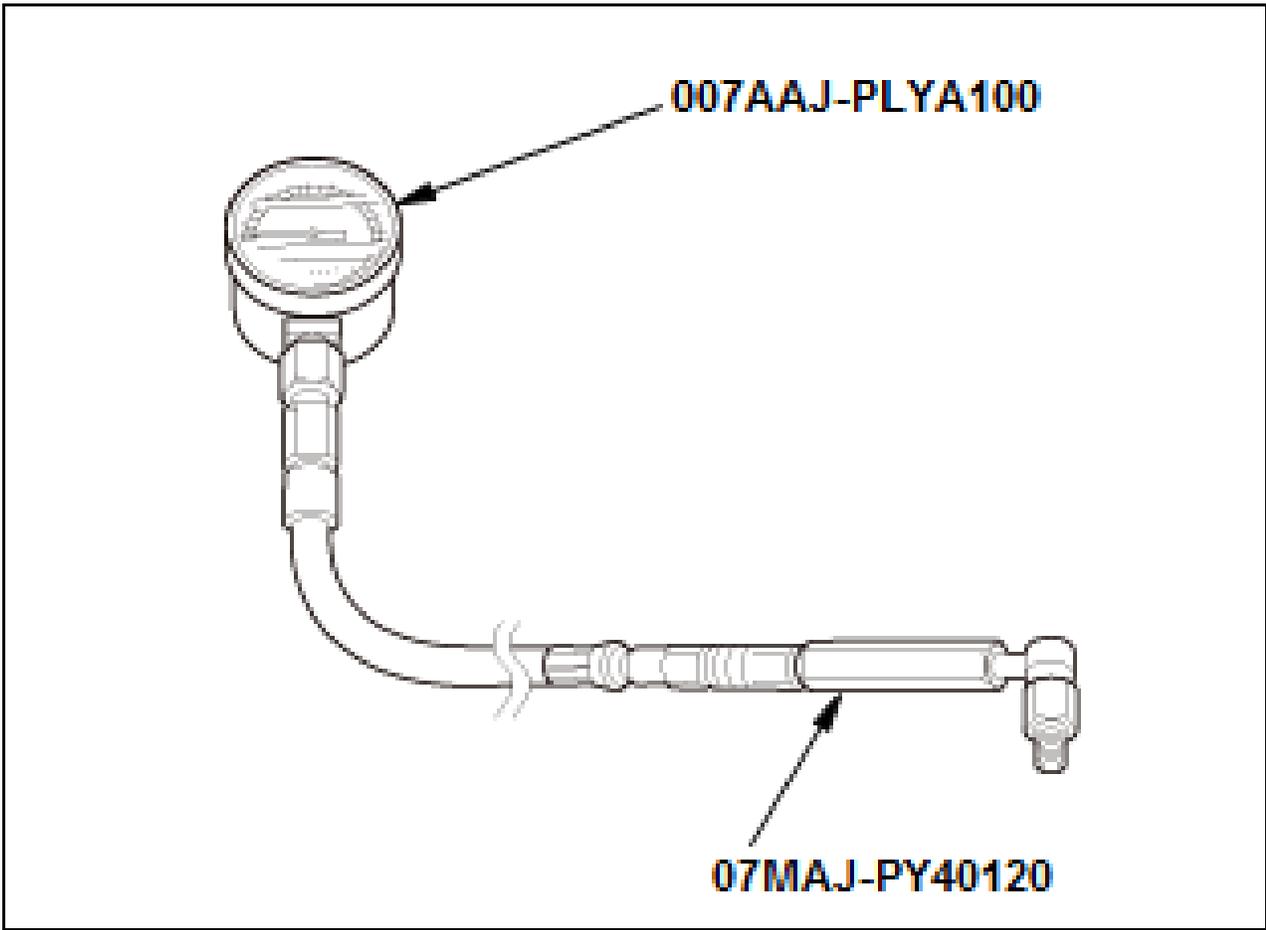


Fig. 24: Driven Pulley Pressure Test Port With Torque Specifications

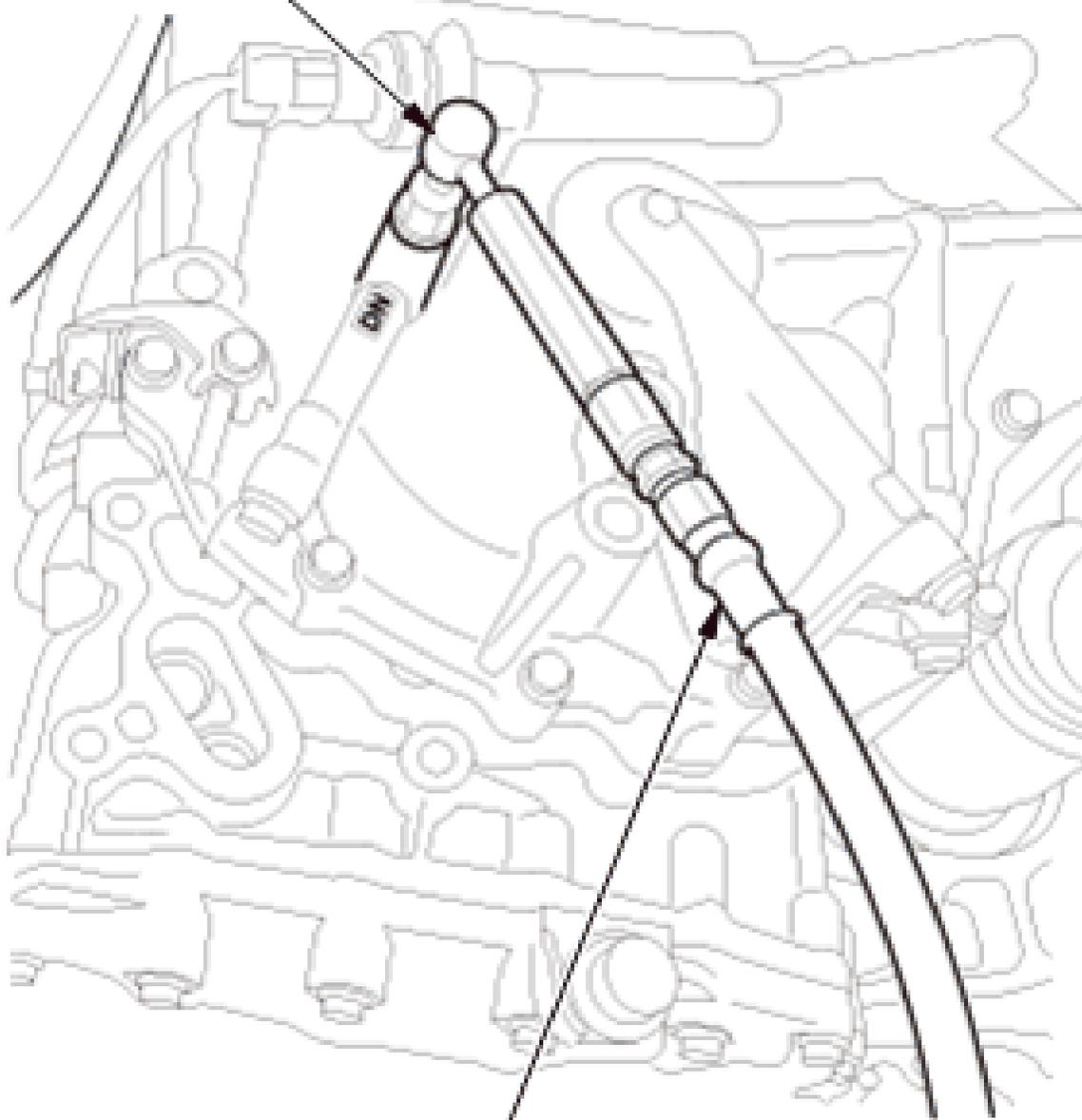
Courtesy of HONDA, U.S.A., INC.

<p>Â</p>	<p>NOTE:</p> <ul style="list-style-type: none"> • Driven pulley pressure may be above 5,000 kPa (51.0 kgf/cm², 725.2 psi) when there is a transmission problem that causes the PCM to go into fail-safe mode. • When troubleshooting, you must use the A/T high pressure gauge to measure driven pulley pressure. <p>1. Remove the sealing bolt (A) with the sealing washer (B).</p>
----------	--

2. Install the A/T high pressure gauge and the A/T pressure adapter to the driven pulley pressure inspection port.



07MAJ-PY40120



007AAJ-PLYA100

3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice)
4. Shift the transmission to N position/mode
5. Measure the driven pulley pressure at engine idling while firmly pressing the brake pedal.

Pressure	Standard
Driven pulley	850-1,400 kPa (8.67- 14.28 kgf/cm ² , 123.3-203.1 psi)

6. Turn the engine off
7. If the driven pulley pressure is out of the standard, refer to the problem and probable cause(s) listed in the table.

Problem	Probable cause(s)
No or low driven pulley pressure	<ul style="list-style-type: none">• Transmission fluid pump defective

Problem	Probable cause(s)
	<ul style="list-style-type: none"> Valve body defective CVT driven pulley pressure control solenoid valve defective
Driven pulley pressure too high	<ul style="list-style-type: none"> Valve body defective CVT driven pulley pressure control solenoid valve defective

8. Remove the A/T oil pressure gauge

9. Install the sealing bolt with a new sealing washer to the driven pulley pressure inspection port.

10. **Transmission Fluid Level - Check**

11. All Removed Parts - Install

Ã	1. Install the parts in the reverse order of removal.
---	---

CVT ROAD TEST (CVT)

Test

- HDS - Connect**
- Engine - Warm Up

Ã	1. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
---	--

3. CVT - Road Test

- Park the vehicle on the level ground.
- Apply the parking brake, and block all four wheels
- Start the engine
- Shift the transmission to D position/mode while pressing the brake pedal. Press the accelerator pedal, and release it suddenly. The engine should not stall
- Repeat step 4 in all positions / modes
- Prepare the HDS and the MVCI to take a SNAPSHOT (refer to the HDS user's guide for more details if needed):
 - Set the Trigger Type to Parameter.
 - Adjust the Parameter setting to APP Sensor A above 1.20 V.
 - Set the Record Time to 60 seconds.
 - Set the Trigger Point to (Negative) - 30 seconds.
- Find a suitable level road
- When you are ready to do the test, press OK on the HDS
- Accelerate quickly until APP Sensor A reads 1.21 V. Maintain a steady throttle at 1.21 V until the vehicle reaches a reasonable speed, then slow the vehicle, and come to a stop
- Save the snapshot if the entire event was recorded, or increase the recording time setting as necessary, and repeat step 9
- Adjust the parameter setting to 2.30 V
- Test-drive the vehicle again. Accelerate quickly until APP Sensor A reads 2.31 V. Maintain a steady throttle until the vehicle reaches a reasonable speed, then slow the vehicle, and come to a stop
- Save the snapshot if the entire event was recorded, or increase the recording time setting as necessary, and repeat step 12
- Accelerate quickly until the accelerator pedal is to the floor. Maintain a steady pedal until the vehicle reaches to reasonable speed, then slow to a stop, and save the snapshot.
- Review each snapshot individually, and compare APP Sensor A (V), the Vehicle Speed, and the Engine Speed to the following table:

D Position/Mode:

APP Sensor A (V)	Vehicle Speed	Engine Speed
1.21 V	25 mph (40 km/h)	750-1, 350 RPM
	37 mph (60 km/h)	786-1, 386 RPM
	62 mph (100 km/h)	1, 510-2, 110 RPM
2.31 V	25 mph (40 km/h)	2, 340-2, 940 RPM
	37 mph (60 km/h)	2, 600-3, 200 RPM
	62 mph (100 km/h)	3, 060-3, 660 RPM
4.50 V	25 mph (40 km/h)	4, 300-4, 900 RPM
	37 mph (60 km/h)	5, 300-5, 900 RPM
	62 mph (100 km/h)	6, 250-6, 850 RPM

S Position/Mode:

APP Sensor A (V)	Vehicle Speed	Engine Speed
1.21 V	25 mph (40 km/h)	1, 320-1, 920 RPM
	37 mph (60 km/h)	1, 600-2, 200 RPM
	62 mph (100 km/h)	2, 460-3, 060 RPM
2.31 V	25 mph (40 km/h)	2, 380-2, 980 RPM
	37 mph (60 km/h)	2, 620-3, 220 RPM

APP Sensor A (V)	Vehicle Speed	Engine Speed
	62 mph (100 km/h)	3, 060-3, 660 RPM
4.50 V	25 mph (40 km/h)	4, 300-4, 900 RPM
	37 mph (60 km/h)	5, 300-5, 900 RPM
	62 mph (100 km/h)	6, 250-6, 850 RPM

L Position/Mode: (Without Paddle Shifter)

APP Sensor A (V)	Vehicle Speed	Engine Speed
1.21 V	25 mph (40 km/h)	2, 300-2, 900 RPM
	37 mph (60 km/h)	3, 040-3, 640 RPM
	62 mph (100 km/h)	3, 900-4, 500 RPM
2.31 V	25 mph (40 km/h)	2, 640-3, 240 RPM
	37 mph (60 km/h)	3, 040-3, 640 RPM
	62 mph (100 km/h)	3, 900-4, 500 RPM
4.50 V	25 mph (40 km/h)	4, 300-4, 900 RPM
	37 mph (60 km/h)	5, 300-5, 900 RPM
	62 mph (100 km/h)	6, 250-6, 850 RPM

Sequential Sportshift Mode: (With Paddle Shifter)

Gear Position	Vehicle Speed	Engine Speed
1st	25 mph (40 km/h)	3, 839-4, 439 RPM
	37 mph (60 km/h)	5, 528-6, 128 RPM
	62 mph (100 km/h)	-
2nd	25 mph (40 km/h)	2, 487-3, 087 RPM
	37 mph (60 km/h)	3, 881-4, 481 RPM
	62 mph (100 km/h)	-
3rd	25 mph (40 km/h)	1, 845-2, 445 RPM
	37 mph (60 km/h)	2, 918-3, 518 RPM
	62 mph (100 km/h)	5, 064-5, 664 RPM
4th	25 mph (40 km/h)	1, 372-1, 972 RPM
	37 mph (60 km/h)	2, 209-2, 809 RPM
	62 mph (100 km/h)	3, 881-4, 481 RPM
5th	25 mph (40 km/h)	1, 038-1, 638 RPM
	37 mph (60 km/h)	1, 707-2, 307 RPM
	62 mph (100 km/h)	3, 045-3, 645 RPM
6th	25 mph (40 km/h)	769-1, 369 RPM
	37 mph (60 km/h)	1, 304-1, 904 RPM
	62 mph (100 km/h)	2, 373-2, 973 RPM
7th	25 mph (40 km/h)	-
	37 mph (60 km/h)	1, 014-1, 614 RPM
	62 mph (100 km/h)	1, 889-2, 489 RPM

16. Park the vehicle on an upward slope (about 16 degrees), apply the parking brake, and shift the transmission to P position/mode. Release the brake; the vehicle should not move.

NOTE: Always use the parking brake to hold the vehicle when stopped on an incline. Depending on the grade of the incline, the vehicle could roll if the brake is released.

CORRECTION OF INCLINATION SENSOR LEARN PROCEDURE WITH DRIVING THE VEHICLE (CVT)

Procedure

NOTE:

- The correction of inclination sensor learn procedure must be done with the HDS when:
 - On an ascending road, if you relieved the brake pedal with the transmission is in D position/mode, the vehicle would fall back because of weak creep torque.
 - On a flat road, if you relieved the brake pedal with the transmission is in D position/mode while the vehicle stopped, the vehicle would move forward excessively because of strong creep torque.
- There are two procedures depending on a work area:
 - On a level ground; the learning procedure is performed once.
 - On a slope; the learning procedure must be performed twice.
- Do the procedure twice when a work area is not verified the level.
- Do the procedure with a one-man, in a vibration free environment, and do not develop the vibration during the procedure.
- Do the procedure after the inclination sensor initial learn procedure is completed.

1. Inclination Sensor - Correction of Initial Learn Procedure

On a Level Ground

1. Apply the parking brake.
2. Check the tire pressures, refer to the tire information label on the driver's doorjamb. Adjust the pressures to the specified value if necessary.
3. **Connect the HDS to the DLC .**

NOTE: For specific operations, refer to the user's manual that came with the Honda Diagnostic System (HDS). Make sure the HDS is loaded with the latest software.

4. Select the Inclination Sensor Learn in the Miscellaneous Test Menu, then select the Correction of Inclination Sensor Learn Procedure with Driving the Vehicle and learning procedure once with the HDS.
5. Follow the HDS screen, and learn the initial settings. The correction of inclination sensor learn procedure is completed when the HDS indicates the TEST COMPLETE.

NOTE: If the HDS does not indicate the TEST COMPLETE, follow the HDS screen and learn again.

On a Slope

1. Apply the parking brake.
2. Check the tire pressures, refer to the tire information label on the driver's doorjamb. Adjust the pressures to the specified value if necessary.
3. Make the aligning marks on all tires and ground.
4. [Connect the HDS to the DLC](#) .

NOTE: For specific operations, refer to the user's manual that came with the Honda Diagnostic System (HDS). Make sure the HDS is loaded with the latest software.

5. Select the Inclination Sensor Learn in the Miscellaneous Test Menu, then select the Correction of Inclination Sensor Learn Procedure with Driving the Vehicle and learning procedure twice with the HDS.
6. Follow the HDS screen, and do the first learning procedure.
7. Turn the vehicle around to do the second procedure from the front to the rear. Park the vehicle with aligning the marks on the tires with the marks on the ground, and apply the parking brake.
8. Follow the HDS screen, and do the second procedure. The correction of inclination sensor learn procedure is completed when the HDS indicates the TEST COMPLETE.

NOTE: If the HDS does not indicate the TEST COMPLETE, follow the HDS screen and learn again.

INCLINATION SENSOR INITIAL LEARN PROCEDURE (CVT)

Procedure

NOTE:

- The inclination sensor initial learn procedure must be done with the HDS when:
 - The PCM is replaced.
 - The inclination sensor is removed/installed, or replaced.
 - The inclination sensor malfunction occurs.
- There are two procedures depending on a work area:
 - On a level ground; the learning procedure is performed once.
 - On a slope; the learning procedure must be performed twice.
- Do the procedure twice when a work area is not verified the level.
- If the inclination sensor initial learn procedure is not carried out, the R indicator in the gauge control module will come on or blink.
- Do the procedure with a one-man, in a vibration free environment, and do not develop the vibration during the procedure.
- If any DTCs were indicated with the HDS, go to the indicated DTC's troubleshooting first.
- The learning of the inclination sensor initial settings overwrites the existing driving information data of the inclination sensor system in the PCM.

1. Inclination Sensor - Initial Learn Procedure

On a Level Ground

1. Apply the parking brake.
2. Check the tire pressures, refer to the tire information label on the driver's doorjamb. Adjust the pressures to the specified value if necessary.
3. [Connect the HDS to the DLC](#) .

NOTE: For specific operations, refer to the user's manual that came with the Honda Diagnostic System (HDS). Make sure the HDS is loaded with the latest software.

4. Select the Inclination Sensor Learn in the Miscellaneous Test Menu, then select the Inclination Sensor Initial Learn Procedure and learning procedure once with the HDS.
5. Follow the HDS screen, and learn the initial settings. The inclination sensor initial learn procedure is completed when the HDS indicates the TEST COMPLETE.

NOTE: If the HDS does not indicate the TEST COMPLETE, follow the HDS screen and learn again.

On a Slope

1. Apply the parking brake.
2. Check the tire pressures, refer to the tire information label on the driver's doorjamb. Adjust the pressures to the specified value if necessary.
3. Make the aligning marks on all tires and ground.
4. [Connect the HDS to the DLC](#) .

NOTE: For specific operations, refer to the user's manual that came with the Honda Diagnostic System (HDS). Make sure the HDS is loaded with the latest software.

5. Select the Inclination Sensor Learn in the Miscellaneous Test Menu, then select the Inclination Sensor Initial Learn Procedure and learning procedure twice with the HDS.
6. Follow the HDS screen, and do the first learning procedure.
7. Turn the vehicle around to do the second procedure from the front to the rear. Park the vehicle with aligning the marks on the tires with the marks on the ground, and apply the parking brake.
8. Follow the HDS screen, and do the second procedure. The inclination sensor initial learn procedure is completed when the HDS indicates the TEST COMPLETE.

NOTE: If the HDS does not indicate the TEST COMPLETE, follow the HDS screen and learn again.

PCM RESET (CVT)

Procedure

1. [HDS - Connect](#)
2. PCM - Reset

Ã	<ol style="list-style-type: none">1. Select the A/T SYSTEM with the HDS2. Reset the PCM with the HDS while the engine is stopped3. Turn the vehicle to the OFF (LOCK) mode4. Turn the vehicle to the ON mode, then wait for 30 seconds5. Turn the vehicle to the OFF (LOCK) mode, then disconnect the HDS from the DLC.
---	---

Fuel and Emissions Systems Learning Procedure

3. [Fuel and Emissions Systems - Learn](#)

CVT Control System Learning Procedure

4. [Inclination Sensor - Initial Learn](#)

SHIFT LOCK SOLENOID TEST (CVT)

Test

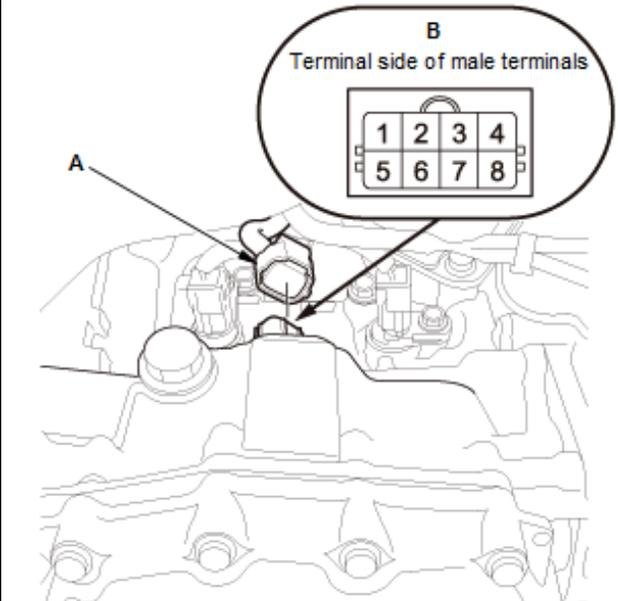
1. [HDS - Connect](#)
2. Shift Lock Solenoid - Test

Ã	<ol style="list-style-type: none">1. Select the Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.2. Check that the shift lever can be moved out of P position/mode when the Shift Lock Solenoid is ON. Move the shift lever back to P position/mode, and check that it locks when the Shift Lock Solenoid is OFF.3. 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.4. If the shift lock solenoid does not work properly, go to the shift lock system circuit troubleshooting.
---	--

SHIFT SOLENOID VALVE B TEST (CVT)

Test

1. [Vehicle - Lift](#)
2. [Engine Undercover - Remove](#) (With 2WD)
3. Shift Solenoid Valve B - Test (On Vehicle)

	<ol style="list-style-type: none">1. Disconnect the connector (A). <p>NOTE:</p> <ul style="list-style-type: none">• To prevent damage, cover the connector using a shop towel.• Check the connector for corrosion, dirt, or oil, and clean or repair if necessary. <ol style="list-style-type: none">2. Measure the shift solenoid valve B resistance between connector (B) terminal No. 1 and body ground.
---	---

Standard:	8.9 - 12.2 Ω
------------------	---------------------

- If the resistance is within the standard, go to the next step, and check the shift solenoid valve B operation.
- If the resistance is out of the standard, check for open or short in the solenoid wire harness, and check for poor connection at ground T13. If the solenoid wire harness is OK, [replace shift solenoid valve B](#).

3. Connect a jumper wire from the positive battery terminal to connector (B) terminal No. 1, and connect another jumper wire from the negative battery terminal to body ground. A clicking sound should be heard.

- If a clicking sound is heard, the test is complete.
- If no clicking sound is heard, [replace shift solenoid valve B](#).

4. [Transmission Fluid Pan - Remove](#)

NOTE: The actual transmission fluid (HCF-2) capacity will vary from the specified capacity based on the length of time the transmission fluid pan is off the transmission. Avoid leaving the transmission fluid pan off for extend periods of time.

5. Shift Solenoid Valve B - Remove

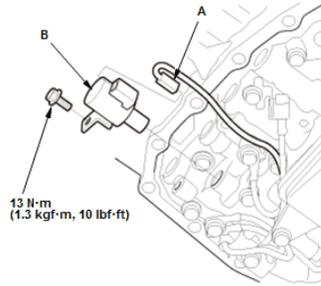


Fig. 25: Shift Solenoid Valve B With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

	<p>1. Disconnect the connector (A), then remove shift solenoid valve B.</p> <p>NOTE: Check the connector for corrosion, dirt, or oil, and clean or repair if necessary.</p>
--	--

6. Shift Solenoid Valve B - Test (Off Vehicle)

	<p>1. Connect a tube (A) to shift solenoid valve B</p> <p>2. Connect a jumper wire from the positive battery terminal to connector terminal No. 2, and connect another jumper wire from the negative battery terminal to connector terminal No. 1. Blow air into the tube (A).</p> <ul style="list-style-type: none"> • If the air does not go out of the port (C), go to the next step. • If the air goes out of the port (C), replace shift solenoid valve B. <p>3. Disconnect the jumper wires. Blow air into the tube.</p> <ul style="list-style-type: none"> • If the air does not go out of the port (C), replace shift solenoid valve B. • If the air goes out of the port (C), repair the wire between shift solenoid valve B and the PCM.
--	--

7. All Removed Parts - Install

	1. Install the parts in the reverse order of removal.
--	---

STALL SPEED TEST (CVT)

Test

1. [Transmission Fluid Level - Check](#)
2. [HDS - Connect](#)
3. Engine - Warm Up

	1. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
--	--

4. CVT Stall Speed - Test

1. Apply the parking brake, and block all four wheels.
2. Make sure the A/C switch is OFF
3. Shift the transmission to D position/mode while pressing the brake pedal firmly, then press the accelerator pedal for 6 to 8 seconds, and note the engine speed.

NOTE: Do not move the shift lever or remove your foot off the brake pedal, while raising the engine speed

4. Allow 2 minutes for cooling, then repeat the test in the all positions / modes.

NOTE:

- Do not test stall speed for more than 10 seconds at a time.
- Record the engine speed at 6 to 8 seconds after pressing the accelerator pedal. Higher engine speed will be indicated for 5 seconds.

- Stall speed tests should be used for diagnostic purposes only.
- The stall speed should be the same in all positions / modes.
- Do not test stall speed with a pressure gauge installed.

Stall Speed RPM
Specification: 2, 250 RPM
Service Limit: 2, 000-2, 400 RPM

5. If any of the stall speeds are out of the service limit, refer to the problems and probable causes listed in the table.

Problem	Probable Causes
Stall speed RPM high in all positions / modes	<ul style="list-style-type: none"> • Transmission fluid pump worn, binding, or foreign material in transmission fluid pump • CVT clutch pressure control solenoid valve defective • Forward clutch slippage • Valve body assembly defective • Transmission fluid strainer clogged
Stall speed RPM high in R position/mode	Reverse brake slippage
Stall speed RPM low in all positions / modes	<ul style="list-style-type: none"> • Engine output low • Transmission fluid pump worn, binding, or foreign material in transmission fluid pump • CVT drive pulley pressure control solenoid valve defective • CVT driven pulley pressure control solenoid valve defective • Valve body assembly defective • Torque converter one-way clutch slippage

TRANSMISSION FLUID TEMPERATURE SENSOR TEST (CVT)

Test

1. **Vehicle - Lift**
2. **Engine Undercover - Remove** (With 2WD)
3. Transmission Fluid Temperature Sensor - Test

	<p>1. Disconnect the connector (A).</p> <p>NOTE:</p> <ul style="list-style-type: none"> • To prevent damage, cover the connector using a shop towel. • Check the connector for corrosion, dirt, or oil, and clean or repair if necessary. <p>2. Measure the transmission fluid temperature sensor resistance between connector (B) terminals No. 2 and No. 3.</p>
--	--

Standard:	50 Ω -25 kΩ
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- If the resistance is within the standard, the test is complete.
- If the resistance is out of the standard, check for open or short in the solenoid wire harness. If the solenoid wire harness is OK, **replace the transmission fluid temperature sensor**.

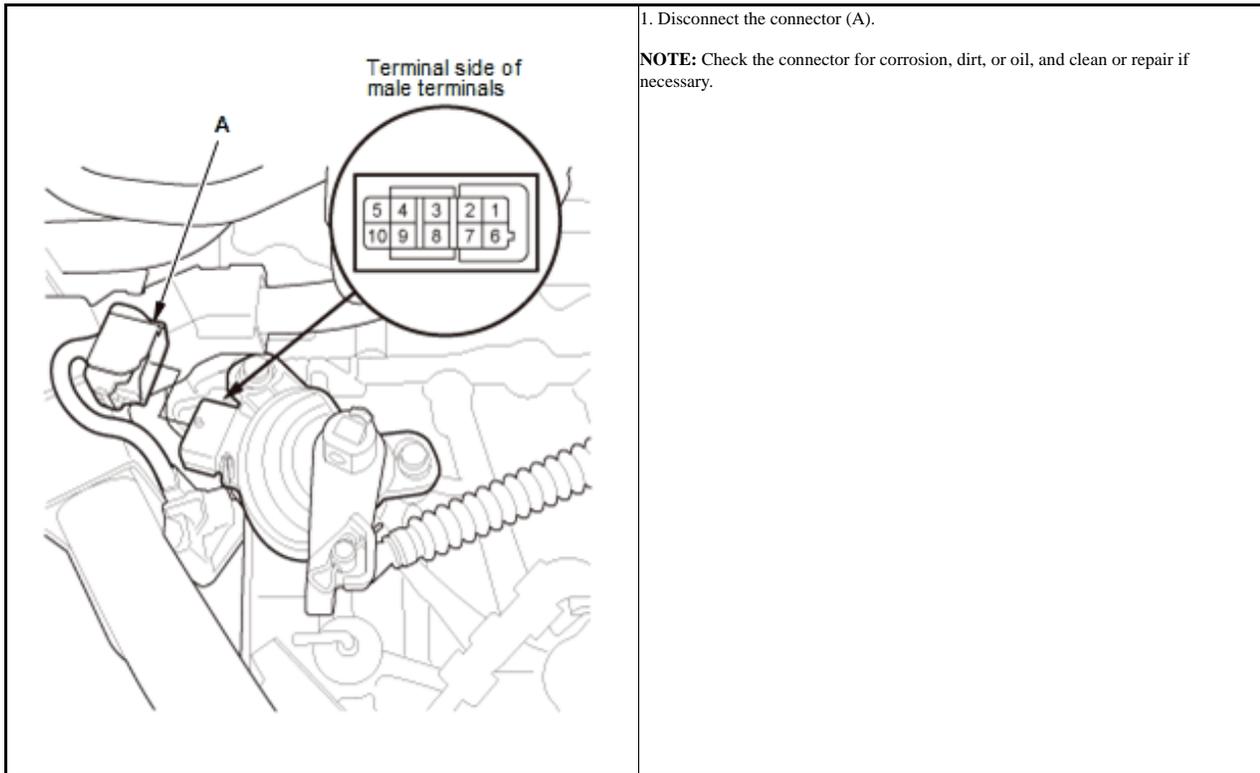
4. All Removed Parts - Install

Ā	1. Install the parts in the reverse order of removal.
----------	---

TRANSMISSION RANGE SWITCH TEST (CVT)

Test

1. **Front Grille Cover - Remove**
2. **Air Cleaner - Remove**
3. Transmission Range Switch - Test



2. Check for continuity between the terminals at the transmission range switch side. There should be continuity between the terminals in the following table for each transmission range switch position.

- If the test results are OK, the transmission range switch test is finished.
- If there is no continuity between any terminals, check the transmission range switch installation. If the switch installation is OK, [replace the transmission range switch](#).

Without paddle shifter

Position/Connector Terminal/Signal Connections										
	1	2	3	4	5	6	7	8	9*	10
	ATP-L	ATP-D	ATP-R	ATP-P	PG3	ATP-FWD	ATP-S	ATP-N	ATP-NP*	ATP-RVS
P				○	○				○	
R			○		○					○
N					○			○	○	
D		○			○	○				
S					○	○	○			
L	○				○	○				

*: Without keyless access system

With paddle shifter

Position/Connector Terminal/Signal Connections										
	1	2	3	4	5	6	7	8	9	10
	—	ATP-D	ATP-R	ATP-P	PG3	ATP-FWD	ATP-S	ATP-N	—	ATP-RVS
P				○	○					
R			○	○	○	○	○	○	○	○
N					○			○		
D		○	○	○	○	○				
S					○	○	○			

4. All Removed Parts - Install

Á	1. Install the parts in the reverse order of removal.
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CHECK

TRANSMISSION FLUID (HCF-2) LEVEL CHECK (CVT)

Check

NOTE:

- Keep all foreign particles out of the transmission.
- Check the transmission fluid level after the shift lever operation without spending too much time.

1. **Vehicle - Lift Set**
2. **Engine Undercover - Remove** (With 2WD)
3. **Transmission Fluid Level - Check**

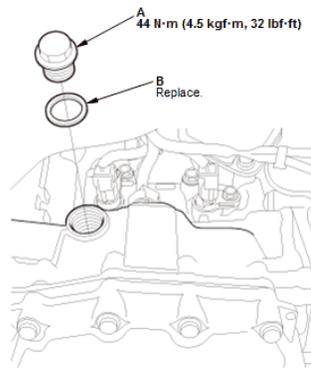
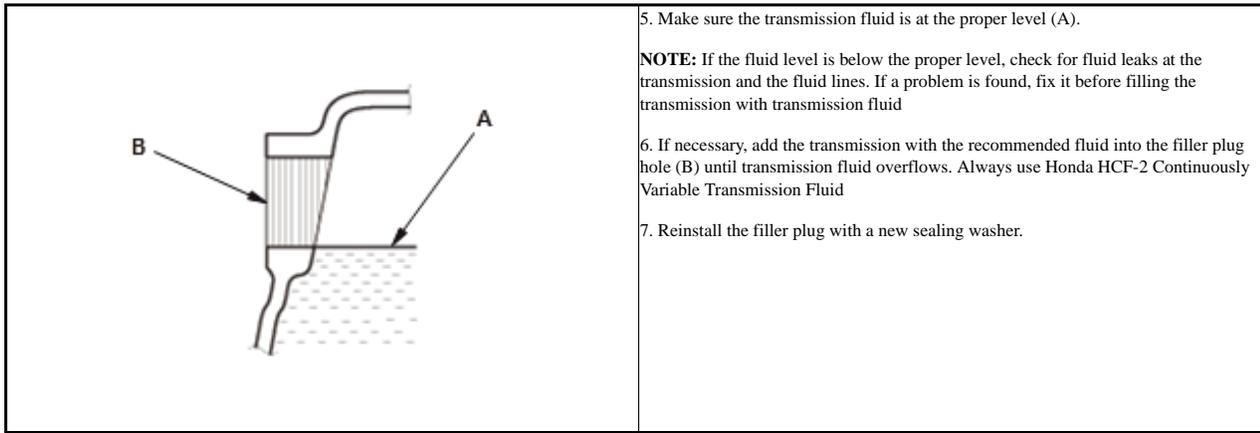


Fig. 26: Transmission Fluid Level - Check Filler Plug With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

Á	<ol style="list-style-type: none"> 1. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice) 2. While pressing the brake pedal firmly, shift in turn the transmission to P→R→N→D→S→L→S→D→N→R→P (without paddle shifter) or P→R→N→D→S→D→N→R→P (with paddle shifter) position/mode, and wait for at least 3 seconds to each position. 3. Turn the engine off. 4. Remove the filler plug (A) and the sealing washer (B). <p>NOTE: Be careful not to burn yourself by the hot part.</p>
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5. Make sure the transmission fluid is at the proper level (A).
- NOTE:** If the fluid level is below the proper level, check for fluid leaks at the transmission and the fluid lines. If a problem is found, fix it before filling the transmission with transmission fluid
6. If necessary, add the transmission with the recommended fluid into the filler plug hole (B) until transmission fluid overflows. Always use Honda HCF-2 Continuously Variable Transmission Fluid
 7. Reinstall the filler plug with a new sealing washer.

4. All Removed Parts - Install

A	1. Install the parts in the reverse order of removal.
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SYMPTOM TROUBLESHOOTING

CVT SYMPTOM TROUBLESHOOTING INDEX (CVT)

NOTE: Do an all DTC check with the HDS, and troubleshoot any DTCs first before following the repair procedures listed in the index.

Symptom	Probable cause(s)	Notes
When the vehicle in the ON mode, the A/T gear position indicator displays an improper indication, or it never displays at all	<ul style="list-style-type: none"> • F-CAN communication line error • Gauge control module defective • PCM defective 	<ul style="list-style-type: none"> • Check the F-CAN communication line . • Check the F-CAN communication line by using the gauge control module self-diagnostic function . • Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function .
A/T gear position indicator does not indicate with the shift lever in that position/mode	<ul style="list-style-type: none"> • F-CAN communication line error • Gauge control module defective • Transmission range switch defective or out of adjustment • Shift cable broken or out of adjustment • PCM defective 	<ul style="list-style-type: none"> • Check the F-CAN communication line . • Check the F-CAN communication line by using the gauge control module self-diagnostic function . • Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function . • Inspect the transmission range switch. • Check for a loose shift cable at the shift lever and the transmission control lever.
Shift lever cannot be moved from P position/mode while pressing on the brake pedal	<ul style="list-style-type: none"> • Shift lock solenoid defective • Shift lock solenoid control circuit • Shift lock mechanism defective • Brake pedal position switch circuit • Brake pedal position switch defective • Accelerator pedal position sensor circuit • Accelerator pedal position sensor defective • Transmission range switch ATPP switch stuck OFF • Transmission range switch ATPP switch line opened • Relative throttle position sensor value too high • Throttle body defective 	<ul style="list-style-type: none"> • Troubleshoot the shift lock system circuit. • Test the shift lock solenoid. • Inspect the transmission range switch. • Inspect the APP sensor signal . • Reset the PCM.
A/T gear position indicator does not work	<ul style="list-style-type: none"> • F-CAN communication line error • Gauge control module defective • Transmission range switch defective or out of adjustment • PCM defective 	<ul style="list-style-type: none"> • Check the F-CAN communication line . • Check the F-CAN communication line by using the gauge control module self-diagnostic function . • Check the indicator drive circuit in the gauge control module by gauge control module self-diagnostic function . • Inspect the transmission range switch.
When you press the paddle shifter + (upshift switch) in D or S position/mode, the transmission does not upshift (with paddle shifter)	A problem in the paddle shifter + (upshift switch) circuit	Troubleshoot the paddle shifter + (upshift switch) circuit.
When you press the paddle shifter - (downshift switch) in D or S position/mode, the transmission does not downshift (with paddle shifter)	A problem in the paddle shifter - (downshift switch) circuit	Troubleshoot the paddle shifter - (downshift switch) circuit.
M indicator does not come on even though the paddle shifter is operated in the S-paddle shift mode (with paddle shifter)	<ul style="list-style-type: none"> • F-CAN communication line error • Gauge control module defective • PCM defective • Transmission range switch defective or out of adjustment 	<ul style="list-style-type: none"> • Check the F-CAN communication line . • Check the F-CAN communication line by using the gauge control module self-diagnostic function . • Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function .

Symptom	Probable cause(s)	Notes
		<ul style="list-style-type: none"> • Inspect the transmission range switch.
HDS does not communicate with the PCM	<ul style="list-style-type: none"> • DLC circuit error • PCM defective 	Troubleshoot the DLC circuit
Engine does not start	<ul style="list-style-type: none"> • Shift cable broken or out of adjustment • Transmission range switch defective or out of adjustment • Torque converter assembly defective • Drive plate defective 	<ul style="list-style-type: none"> • Check for a loose shift cable at the shift lever and the transmission control lever. • Inspect the transmission range switch. • Inspect the torque converter assembly for wear and damage.
Engine runs, but vehicle does not move in any positions / modes	<ul style="list-style-type: none"> • Drive pulley, driven pulley, pulley shaft, steel belt, and pulley related parts worn or damaged • Transmission fluid feed pipe worn, damaged, or out of round • Input shaft worn or damaged • Secondary drive gear or secondary driven gear worn or damaged • Final driven gear worn or damaged • Sun gear worn or damaged • Control shaft assembly worn or damaged • Control lever worn or damaged • Park pawl and pawl shaft worn or damaged • Manual valve lever and lever pin worn or damaged • Transmission fluid pump worn, binding, or foreign material in transmission fluid pump • Transmission fluid pump drive chain or transmission fluid pump drive/driven sprocket worn or damaged • Low transmission fluid (HCF-2) level • Transmission fluid strainer or transmission fluid filter clogged • Valve body assembly defective • Transmission range switch defective or out of adjustment • Torque converter assembly defective • Engine output low • Stator shaft worn or damaged • Axle damaged or worn 	<ul style="list-style-type: none"> • Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. • Check the transmission fluid feed pipe for wear, damage, and out of round. • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Check the secondary drive gear, the secondary driven gear, and the final driven gear for wear and damage. • Check the final driven gear for wear and damage. • Check the sun gear for wear and damage. If the sun gear is worn or damaged, replace it and also check the planetary carrier pinion gears, the forward clutch, and the drive pulley shaft splines for wear and damage. • Check the control shaft assembly for wear and damage. • Check the control lever for wear and damage. • Check the park pawl and the pawl shaft for wear and damage. If the park pawl or the pawl shaft are worn or damaged, replace them and also check the park gear for wear and damage. • Check the manual valve lever and the lever pin for wear and damage. • Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly . • Check the transmission fluid pump drive chain and the transmission fluid pump drive/driven sprocket for wear and damage. • Check the transmission fluid (HCF-2) level. • Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. • Check the valve body assembly for wear and damage. • Inspect the transmission range switch. • Inspect the torque converter assembly for wear and damage. • Check the stator shaft for wear and damage.
Vehicle does not move in D, S, or L positions / modes	<ul style="list-style-type: none"> • Forward clutch assembly defective • Reverse brake piston stuck • Sun gear worn or damaged • Shift cable broken or out of adjustment • Manual valve lever and lever pin worn or damaged • Valve body assembly defective • Transmission range switch defective or out of adjustment • Engine output low • Stator shaft worn or damaged 	<ul style="list-style-type: none"> • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the sun gear for wear and damage. If the sun gear is worn or damaged, replace it and also check the planetary carrier pinion gears, the forward clutch, and the drive pulley shaft splines for wear and damage. • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the manual valve lever and lever pin for wear and damage. • Check the valve body assembly for wear and damage. • Inspect the transmission range switch. • Check the stator shaft for wear and damage.
Vehicle does not move in R position/mode	<ul style="list-style-type: none"> • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck • Planetary carrier worn or damaged • Sun gear worn or damaged • Ring gear worn or damaged • Thrust needle bearing or thrust washers on planetary carrier seized, worn or damaged • Thrust washer on planetary carrier seized, worn, or damaged • Shift cable broken or out of adjustment • Manual valve lever and lever pin worn or damaged. 	<ul style="list-style-type: none"> • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the planetary carrier for wear and damage. If the planetary carrier is worn or damaged, replace it and also check the planetary carrier pinion gears, the reverse brake, and the drive pulley shaft splines for wear and damage. • Check the sun gear for wear and damage. If the sun gear is worn or damaged, replace it and also check the planetary carrier pinion gears, the forward

Symptom	Probable cause(s)	Notes
	<ul style="list-style-type: none"> Valve body assembly defective. Transmission range switch defective or out of adjustment. Stator shaft worn or damaged. 	<ul style="list-style-type: none"> clutch, and the drive pulley shaft splines for wear and damage. Check the ring gear for wear and damage. If the ring gear is worn or damaged, replace it and also check the planetary carrier and the reverse brake for wear and damage. Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. Check for a loose shift cable at the shift lever and the transmission control lever. Check the manual valve lever and lever pin for wear and damage. Check the valve body assembly for wear and damage. Inspect the transmission range switch. Check the stator shaft for wear and damage.
Engine stops when shifted to D position/mode from N position/mode.	<ul style="list-style-type: none"> Drive pulley, driven pulley, pulley shaft, steel belt, and pulley related parts worn or damaged. Reverse brake defective. Reverse brake piston stuck. Torque converter assembly defective. Engine output low. 	<ul style="list-style-type: none"> Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. Inspect the torque converter assembly for wear and damage.
Engine stops when shifted to R position/mode from N position/mode	<ul style="list-style-type: none"> Drive pulley, driven pulley, pulley shaft, steel belt, and pulley related parts worn or damaged Forward clutch assembly defective Planetary carrier worn or damaged Thrust needle bearing on planetary carrier seized, worn or damaged Thrust washer on planetary carrier seized, worn, or damaged Torque converter assembly defective Engine output low 	<ul style="list-style-type: none"> Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. Inspect the clearance between the forward clutch end-plate and the top disc. Check the planetary carrier for wear and damage. If the planetary carrier is worn or damaged, replace it and also check the planetary carrier pinion gears, the reverse brake, and the drive pulley shaft splines for wear and damage. Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. Inspect the torque converter assembly for wear and damage.
No shift to higher or lower ratio	<ul style="list-style-type: none"> Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged Transmission fluid feed pipe worn, damaged, or out of round Transmission fluid pump worn, binding, or foreign material in transmission fluid pump Low transmission fluid (HCF-2) level Transmission fluid strainer or transmission fluid filter clogged Valve body assembly defective Stator shaft worn or damaged Solenoid wire harness worn or damaged PCM defective 	<ul style="list-style-type: none"> Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. Check the transmission fluid feed pipe for wear, damage, and out of round. Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly. Check the transmission fluid (HCF-2) level. Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. Check the valve body assembly for wear and damage. Check the stator shaft for wear and damage. Inspect the solenoid wire harness for open and short.
Poor acceleration	<ul style="list-style-type: none"> Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged Transmission fluid feed pipe worn, damaged, or out of round Transmission fluid pump worn, binding, or foreign material in transmission fluid pump Valve body assembly defective CVT drive pulley speed sensor defective Torque converter assembly defective Engine output low Stator shaft worn or damaged Solenoid wire harness worn or damaged PCM defective 	<ul style="list-style-type: none"> Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. Check the transmission fluid feed pipe for wear, damage, and out of round. Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly. Check the valve body assembly for wear and damage. Check the CVT drive pulley speed sensor for wear and damage, and also check the O-ring for wear and damage. Inspect the torque converter assembly for wear and damage. Check the stator shaft for wear and damage. Inspect the solenoid wire harness for open and short.
Engine revs up abnormally high while driving, and no acceleration	<ul style="list-style-type: none"> Low transmission fluid (HCF-2) level Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged Transmission fluid feed pipe worn, damaged, or out of round 	<ul style="list-style-type: none"> Check the transmission fluid (HCF-2) level. Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. Check the transmission fluid feed pipe for wear, damage, and out of round.

Symptom	Probable cause(s)	Notes
	<ul style="list-style-type: none"> • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck • Transmission fluid pump worn, binding, or foreign material in transmission fluid pump • Transmission fluid pump drive chain or transmission fluid pump drive/driven sprocket worn or damaged • Valve body assembly defective • Stator shaft worn or damaged • Solenoid wire harness worn or damaged • PCM defective 	<ul style="list-style-type: none"> • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly . • Check the transmission fluid pump drive chain and the transmission fluid pump drive/driven sprocket for wear and damage. • Check the valve body assembly for wear and damage. • Check the stator shaft for wear and damage. • Inspect the solenoid wire harness for open and short.
Excessive shock when accelerating and decelerating	<ul style="list-style-type: none"> • Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged • Transmission fluid feed pipe worn, damaged, or out of round • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck • Low transmission fluid (HCF-2) level • Transmission fluid (HCF-2) deteriorated • Valve body assembly defective • Torque converter assembly defective • Stator shaft worn or damaged • PCM defective • Worn or damaged engine mounts 	<ul style="list-style-type: none"> • Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. • Check the transmission fluid feed pipe for wear, damage, and out of round. • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the transmission fluid (HCF-2) level. • Check the transmission fluid (HCF-2) condition. If necessary, replace the transmission fluid (HCF-2) . • Check the valve body assembly for wear and damage. • Inspect the torque converter assembly for wear and damage. • Check the stator shaft for wear and damage. • Check the engine mounts for wear and damage.
No engine braking	<ul style="list-style-type: none"> • Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged • Transmission fluid feed pipe worn, damaged, or out of round • Valve body assembly defective • Stator shaft worn or damaged • Solenoid wire harness worn or damaged • PCM defective 	<ul style="list-style-type: none"> • Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. • Check the transmission fluid feed pipe for wear, damage, and out of round. • Check the valve body assembly for wear and damage. • Check the stator shaft for wear and damage. • Inspect the solenoid wire harness for open and short.
Vehicle does not creep on a flat road in D, S, or L positions / modes	<ul style="list-style-type: none"> • Inclination sensor out of adjustment • Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged • Transmission fluid feed pipe worn, damaged, or out of round • Transmission fluid pump worn, binding, or foreign material in transmission fluid pump • Low transmission fluid (HCF-2) level • Transmission fluid strainer or transmission fluid filter clogged • Valve body assembly defective • CVT drive pulley speed sensor defective • Stator shaft worn or damaged • Solenoid wire harness worn or damaged • Torque converter assembly defective • Engine output low • PCM defective 	<ul style="list-style-type: none"> • Do the inclination sensor initial learn procedure. • Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. • Check the transmission fluid feed pipe for wear, damage, and out of round. • Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly . • Check the transmission fluid (HCF-2) level. • Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. • Check the valve body assembly for wear and damage. • Check the CVT drive pulley speed sensor for wear and damage, and also check the O-ring for wear and damage. • Check the stator shaft for wear and damage. • Inspect the solenoid wire harness for open and short. • Inspect the torque converter assembly for wear and damage.
Vehicle moves in N position/mode, shift cable is properly adjusted	<ul style="list-style-type: none"> • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck • Reverse brake return springs/retainer worn or damaged • Input shaft thrust needle bearing seized, worn or damaged • Manual valve lever and lever pin worn or damaged • Stator shaft worn or damaged 	<ul style="list-style-type: none"> • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the input shaft assembly for wear and damage. If the input shaft or the

Symptom	Probable cause(s)	Notes
		<ul style="list-style-type: none"> input shaft thrust needle bearings are worn or damaged, replace them and also check the related part of the input shaft assembly for wear and damage. Check the manual valve lever and lever pin for wear and damage. Check the stator shaft for wear and damage.
Late shift after shifting to D position/mode from N position/mode, and return to N position/mode	<ul style="list-style-type: none"> Forward clutch assembly defective Shift cable broken or out of adjustment Manual valve lever and lever pin worn or damaged Low transmission fluid (HCF-2) level Transmission fluid strainer or transmission fluid filter clogged Valve body assembly defective Transmission fluid feed pipe worn, damaged, or out of round Transmission range switch defective Stator shaft worn or damaged Torque converter turbine speed sensor defective PCM defective 	<ul style="list-style-type: none"> Inspect the clearance between the forward clutch end-plate and the top disc. Check for a loose shift cable at the shift lever and the transmission control lever. Check the manual valve lever and lever pin for wear and damage. Check the transmission fluid (HCF-2) level. Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. Check the Valve body assembly for wear and damage. Check the transmission fluid feed pipe for wear, damage, and out of round. Inspect the transmission range switch. Check the stator shaft for wear and damage. Check the torque converter turbine speed sensor for wear and damage, and also check the O-ring for wear and damage.
Late shift after shifting to R position/mode from N position/mode, and return to N position/mode	<ul style="list-style-type: none"> Reverse brake defective Reverse brake piston stuck Shift cable broken or out of adjustment Manual valve lever and lever pin worn or damaged Low transmission fluid (HCF-2) level Transmission fluid strainer or transmission fluid filter clogged Valve body assembly defective Transmission fluid feed pipe worn, damaged, or out of round Transmission range switch defective or out of adjustment Stator shaft worn or damaged Torque converter turbine speed sensor defective PCM defective 	<ul style="list-style-type: none"> Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. Check for a loose shift cable at the shift lever and the transmission control lever. Check the manual valve lever and lever pin for wear and damage. Check the transmission fluid (HCF-2) level. Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. Check the valve body assembly for wear and damage. Check the transmission fluid feed pipe for wear, damage, and out of round. Inspect the transmission range switch. Check the stator shaft for wear and damage. Check the torque converter turbine speed sensor for wear and damage, and also check the O-ring for wear and damage.
Unstable engine speed	<ul style="list-style-type: none"> Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged Transmission fluid feed pipe worn, damaged, or out of round Forward clutch assembly defective Reverse brake defective Transmission fluid pump worn, binding, or foreign material in transmission fluid pump Low transmission fluid (HCF-2) level Transmission fluid strainer or transmission fluid filter clogged Transmission fluid (HCF-2) deteriorated Valve body assembly defective CVT drive pulley pressure control solenoid valve defective CVT driven pulley pressure control solenoid valve defective CVT clutch pressure control solenoid valve defective CVT lock-up clutch control solenoid valve defective Shift solenoid valve B defective Torque converter assembly defective PCM defective 	<ul style="list-style-type: none"> Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. Check the transmission fluid feed pipe for wear, damage, and out of round. Inspect the clearance between the forward clutch end-plate and the top disc. Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly. Check the transmission fluid (HCF-2) level. Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. Check the valve body assembly for wear and damage. Inspect the CVT drive pulley pressure control solenoid valve. Inspect the CVT driven pulley pressure control solenoid valve. Inspect the CVT clutch pressure control solenoid valve defective. Inspect the CVT lock-up clutch control solenoid valve. Inspect shift solenoid valve B. Inspect the torque converter assembly for wear and damage.
Excessive shock when starting off	<ul style="list-style-type: none"> Transmission fluid feed pipe worn, damaged, or out of round Forward clutch assembly defective Reverse brake defective Reverse brake piston stuck 	<ul style="list-style-type: none"> Check the transmission fluid feed pipe for wear, damage, and out of round. Inspect the clearance between the forward clutch end-plate and the top disc. Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and

Symptom	Probable cause(s)	Notes
	<ul style="list-style-type: none"> • Low transmission fluid (HCF-2) level • Transmission fluid strainer or transmission fluid filter clogged • Transmission fluid (HCF-2) deteriorated • Valve body assembly defective • PCM defective 	<ul style="list-style-type: none"> • the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the transmission fluid (HCF-2) level. • Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. • Check the transmission fluid (HCF-2) condition. If necessary, replace the transmission fluid (HCF-2). • Check the valve body assembly for wear and damage.
Vibration in all positions	<ul style="list-style-type: none"> • Input shaft worn or damaged • Torque converter assembly defective • Engine output low • Worn or damaged engine mounts 	<ul style="list-style-type: none"> • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Inspect the torque converter assembly for wear and damage. • Check the engine mounts for wear and damage.
Excessive idle vibration in R, D, S, or L positions / modes	<ul style="list-style-type: none"> • Drive pulley, driven pulley, pulley shaft, pulley belt, and pulley related parts worn or damaged • Forward clutch assembly defective • Input shaft worn or damaged • Reverse brake defective • Reverse brake piston stuck • Thrust needle bearing or thrust washers on planetary carrier seized, worn or damaged • Valve body assembly defective • Transmission fluid feed pipe worn, damaged, or out of round • Torque converter assembly defective • Engine output low • Solenoid wire harness worn or damaged • PCM defective 	<ul style="list-style-type: none"> • Check the drive pulley, the driven pulley, the pulley shafts, the steel belt, and pulley related parts for wear and damage. If there are worn or damaged, replace the transmission housing assembly. • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. • Check the valve body assembly for wear and damage. • Check the transmission fluid feed pipe for wear, damage, and out of round. • Inspect the torque converter assembly for wear and damage. • Inspect the solenoid wire harness for open and short.
Excessive idle vibration in N and P positions / modes	<ul style="list-style-type: none"> • Forward clutch assembly defective • Input shaft worn or damaged • Reverse brake defective • Torque converter assembly defective • Engine output low • PCM defective 	<ul style="list-style-type: none"> • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the torque converter assembly for wear and damage.
Noise from transmission in N and P positions / modes	<ul style="list-style-type: none"> • Forward clutch assembly defective • Input shaft worn or damaged • Reverse brake defective • Planetary carrier worn or damaged • Sun gear worn or damaged • Ring gear worn or damaged • Thrust needle bearing on planetary carrier seized, worn or damaged • Thrust washer on planetary carrier seized, worn or damaged • Transmission fluid pump worn, binding, or foreign material in transmission fluid pump • PCM defective 	<ul style="list-style-type: none"> • Inspect the clearance between the forward clutch end-plate and the top disc. • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the planetary carrier for wear and damage. If the planetary carrier is worn or damaged, replace it and also check the planetary carrier pinion gears, the reverse brake, and the drive pulley shaft splines for wear and damage. • Check the sun gear for wear and damage. If the sun gear is worn or damaged, replace it and also check the planetary carrier pinion gears, the forward clutch, and the drive pulley shaft splines for wear and damage. • Check the ring gear for wear and damage. If the ring gear is worn or damaged, replace it and also check the planetary carrier and the reverse brake for wear and damage. • Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer

Symptom	Probable cause(s)	Notes
		<ul style="list-style-type: none"> are worn or damaged, replace them and adjust the clearance with the thrust shim. Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly.
Noise from transmission in D, S, or L positions / modes	<ul style="list-style-type: none"> Input shaft worn or damaged Secondary drive/driven gear worn or damaged Final driven gear worn or damaged Control shaft assembly worn or damaged Park pawl and pawl shaft worn or damaged 	<ul style="list-style-type: none"> Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. Check the secondary drive/driven gear for wear and damage. Check the final driven gear for wear and damage. Check the control shaft assembly for wear and damage. If the control shaft assembly is worn or damaged, replace it as an assembly. Check the park pawl and the pawl shaft for wear and damage. If the park pawl or the pawl shaft are worn or damaged, replace them and also check the park gear for wear and damage.
Noise from transmission in R position/mode	<ul style="list-style-type: none"> Input shaft worn or damaged Reverse brake defective Reverse brake piston stuck Reverse brake return springs/retainer worn or damaged Input shaft thrust needle bearing seized, worn or damaged Planetary carrier worn or damaged Sun gear worn or damaged Ring gear worn or damaged Thrust needle bearing on planetary carrier seized, worn or damaged Thrust washer on planetary carrier seized, worn or damaged Control shaft assembly worn or damaged Park pawl and pawl shaft worn or damaged 	<ul style="list-style-type: none"> Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. Check the planetary carrier for wear and damage. If the planetary carrier is worn or damaged, replace it and also check the planetary carrier pinion gears, the reverse brake, and the drive pulley shaft splines for wear and damage. Check the sun gear for wear and damage. If the sun gear is worn or damaged, replace it and also check the planetary carrier pinion gears, the forward clutch, and the drive pulley shaft splines for wear and damage. Check the ring gear for wear and damage. If the ring gear is worn or damaged, replace it and also check the planetary carrier and the reverse brake for wear and damage. Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. Check the control shaft assembly for wear and damage. If the control shaft assembly is worn or damaged, replace it as an assembly. Check the park pawl and the pawl shaft for wear and damage. If the park pawl or the pawl shaft are worn or damaged, replace them and also check the park gear for wear and damage.
Stall speed high	<ul style="list-style-type: none"> Forward clutch assembly defective Input shaft worn or damaged Reverse brake defective Transmission fluid pump worn, binding, or foreign material in transmission fluid pump Low transmission fluid (HCF-2) level Transmission fluid (HCF-2) deteriorated Valve body assembly defective Transmission fluid feed pipe worn, damaged, or out of round Torque converter assembly defective Stator shaft worn or damaged PCM defective 	<ul style="list-style-type: none"> Inspect the clearance between the forward clutch end-plate and the top disc. Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly . Check the transmission fluid (HCF-2) level. Check the transmission fluid (HCF-2) condition. If necessary, replace the transmission fluid (HCF-2) . Check the valve body assembly for wear and damage. Check the transmission fluid feed pipe for wear, damage, and out of round. Inspect the torque converter assembly for wear and damage. If the torque converter assembly is worn or damaged, replace it as an assembly . Check the stator shaft for wear and damage.
Stall speed low	<ul style="list-style-type: none"> Valve body assembly defective Transmission fluid feed pipe worn, damaged, or out of round Torque converter assembly defective Engine output low Stator shaft worn or damaged PCM defective 	<ul style="list-style-type: none"> Check the valve body assembly for wear and damage. Check the transmission fluid feed pipe for wear, damage, and out of round. Inspect the torque converter assembly for wear and damage. Check the stator shaft for wear and damage.

Symptom	Probable cause(s)	Notes
Judder when starting off	<ul style="list-style-type: none"> • Transmission fluid pump worn, binding, or foreign material in transmission fluid pump • Low transmission fluid (HCF-2) level • Transmission fluid (HCF-2) deteriorated • Transmission fluid strainer or transmission fluid filter clogged • Valve body assembly defective • Transmission fluid feed pipe worn, damaged, or out of round 	<ul style="list-style-type: none"> • Check the transmission fluid pump assembly for wear and damage. If the transmission fluid pump assembly is worn or damaged, replace it as an assembly. • Check the transmission fluid (HCF-2) level. • Check the transmission fluid (HCF-2) condition. If necessary, replace the transmission fluid (HCF-2). • Check the transmission fluid strainer and the transmission fluid filter for debris. If the transmission fluid strainer or the transmission fluid filter is clogged, find the damaged components that caused debris. • Check the valve body assembly for wear and damage. • Check the transmission fluid feed pipe for wear, damage, and out of round.
Shift lever does not operate smoothly	<ul style="list-style-type: none"> • Control shaft assembly worn or damaged • Control lever worn or damaged • Park pawl and pawl shaft worn or damaged • Shift cable broken or out of adjustment • Manual valve lever and lever pin worn or damaged • Transmission range switch defective or out of adjustment • Stator shaft worn or damaged 	<ul style="list-style-type: none"> • Check the control shaft assembly for wear and damage. If the control shaft assembly is worn or damaged, replace it as an assembly. • Check the control lever for wear and damage. • Check the park pawl and the pawl shaft for wear and damage. If the park pawl or the pawl shaft are worn or damaged, replace them and also check the park gear for wear and damage. • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the manual valve lever and the lever pin for wear and damage. • Inspect the transmission range switch. • Check the stator shaft for wear and damage.
Transmission will not shift into P position/mode, or transmission cannot shift out of P position/mode	<ul style="list-style-type: none"> • Control shaft assembly worn or damaged • Control lever worn or damaged • Park pawl and pawl shaft worn or damaged • Parking gear worn or damaged • Shift cable broken or out of adjustment • Manual valve lever and lever pin worn or damaged • Valve body assembly defective • Transmission range switch defective or out of adjustment • Stator shaft worn or damaged • PCM defective 	<ul style="list-style-type: none"> • Check the control shaft assembly for wear and damage. • Check the control lever for wear and damage. • Check the park pawl and the pawl shaft for wear and damage. If the park pawl or the pawl shaft are worn or damaged, replace them and also check the park gear for wear and damage. • Check the parking gear for wear and damage. • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the manual valve lever and the lever pin for wear and damage. • Check the valve body assembly for wear and damage. • Inspect the transmission range switch. • Check the stator shaft for wear and damage.
A/T gear position indicator does not indicate shift lever positions / modes	<ul style="list-style-type: none"> • Control shaft assembly worn or damaged • Shift cable broken or out of adjustment • Transmission range switch defective or out of adjustment • PCM defective 	<ul style="list-style-type: none"> • Check the control shaft assembly for wear and damage. • Check for a loose shift cable at the shift lever and the transmission control lever. • Inspect the transmission range switch.

CIRCUIT DIAGRAM

CVT ELECTRONIC CONTROL SYSTEM CIRCUIT DIAGRAM (CVT)

1: Without keyless access system
 2: With keyless access system

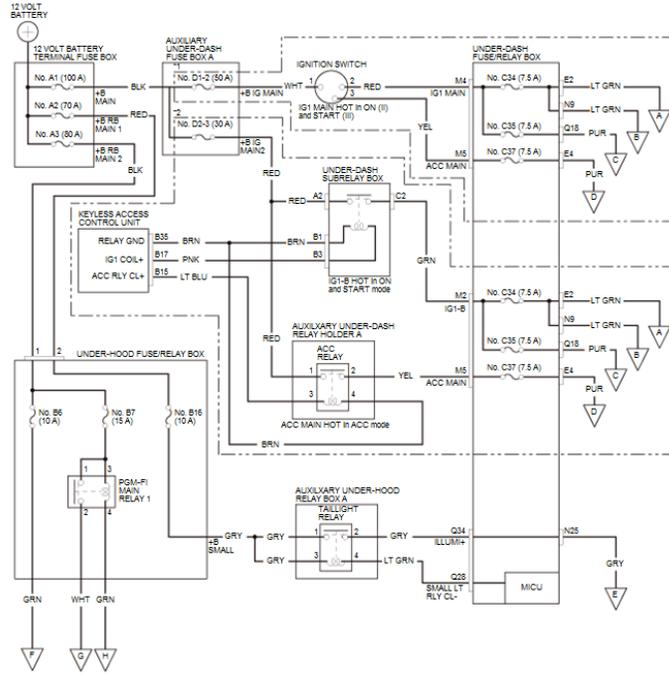


Fig. 27: CVT Electronic Control System Circuit Diagram (1 Of 5)
 Courtesy of HONDA, U.S.A., INC.

1: Without paddle shifter
 2: With paddle shifter
 --- CAN line

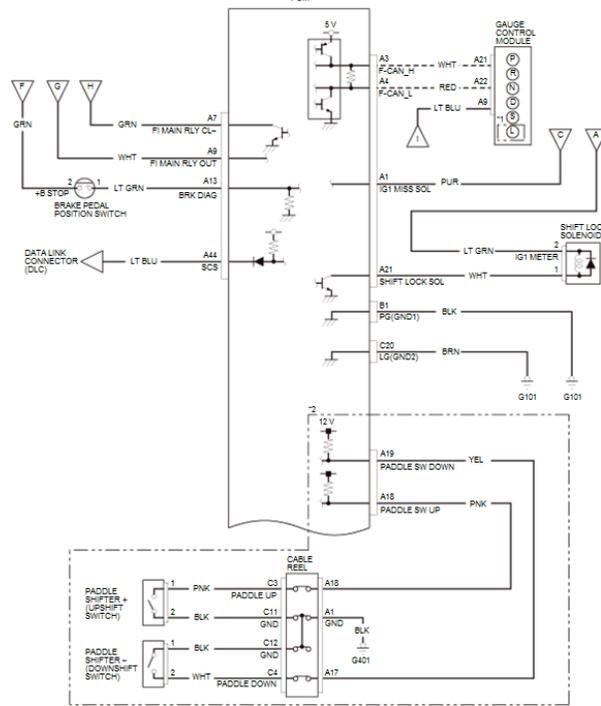


Fig. 28: CVT Electronic Control System Circuit Diagram (2 Of 5)
 Courtesy of HONDA, U.S.A., INC.

cardiagn.com

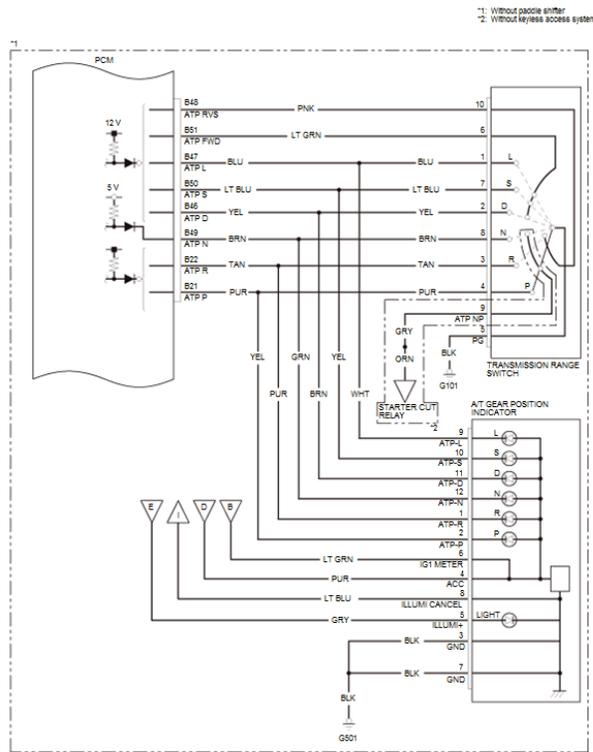


Fig. 29: CVT Electronic Control System Circuit Diagram (3 Of 5)
Courtesy of HONDA, U.S.A., INC.

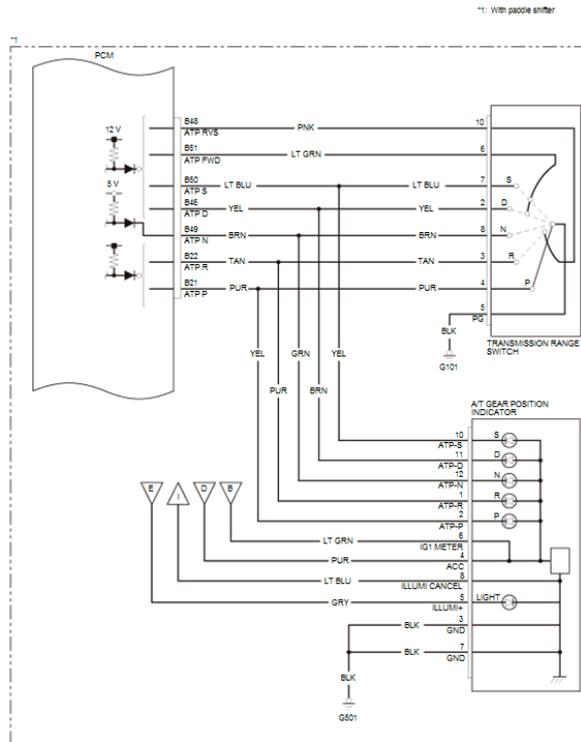


Fig. 30: CVT Electronic Control System Circuit Diagram (4 Of 5)
Courtesy of HONDA, U.S.A., INC.

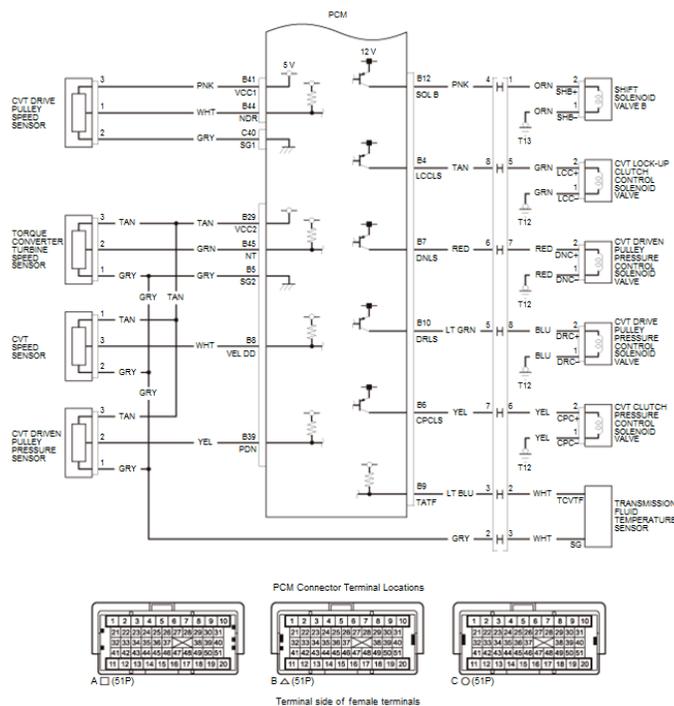


Fig. 31: CVT Electronic Control System Circuit Diagram (5 Of 5)
 Courtesy of HONDA, U.S.A., INC.

TROUBLESHOOTING

PADDLE SHIFTER + (UPSHIFT SWITCH) CIRCUIT TROUBLESHOOTING (CVT)

SRS components are located in this area. Review the SRS component locations - Refer to: [SRS Component Location Index \(KA/KC\)](#), or [SRS Component Location Index \(KA/KC\)](#) and the [precautions and procedures](#) before doing repair or service.

1. Problem verification:

- 1. Connect the HDS to the DLC - Refer to: [How to Troubleshoot the Fuel and Emissions Systems](#), or [How to Troubleshoot the CVT System \(CVT\)](#).
- 2. Turn the vehicle to the ON mode.
- 3. Make sure the HDS communicates with the vehicle. If it does not, [go to the DLC circuit troubleshooting](#).
- 4. Check the parameter(s) below with the HDS when repeatedly pressing and releasing the paddle shifter + (upshift switch).

Signal Ā	Current conditions	
	Ā Values	Unit
Upshift Switch (ST)	Ā	Ā

Is ON indicated when you are pressing the paddle shifter + (upshift switch) and OFF with the switch released?

YES

Intermittent failure, the system is OK at this time.

NO

The failure is duplicated. Go to step 2.

2. Determine possible failure area (PCM, others):

- 1. Turn the vehicle to the OFF (LOCK) mode.
- 2. Jump the SCS line with the HDS.
- 3. Disconnect the following connector.

PCM connector A (51P)

- 4. Check for continuity between test points 1 and 2.

Test condition Ā	Vehicle OFF (LOCK) mode PCM connector A (51P): disconnected
Test point 1	PCM connector A (51P) No. 18
Test point 2	Body ground

Is there continuity when pressing the paddle shifter + (upshift switch) and no continuity when the paddle shifter + (upshift switch) is released?

YES

Update the PCM if it does not have the latest software , or **substitute a known-good PCM** , then recheck. If the symptom goes away and the PCM was updated, troubleshooting is complete. If the symptom goes away and the PCM was substituted, **replace the original PCM** .

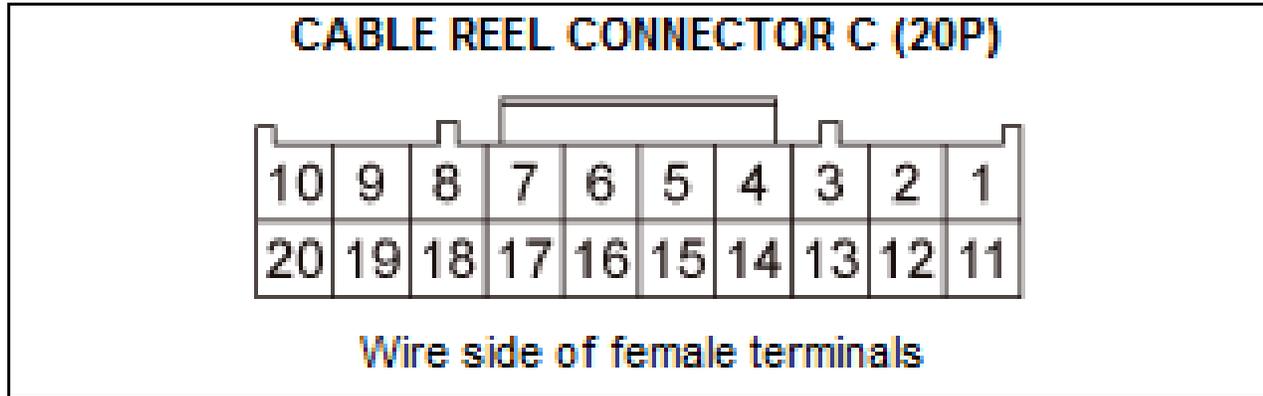
NO

Go to step 3.

3. Determine possible failure area (paddle shifter + (upshift switch), others):

- 1. **Remove the steering wheel** .
- 2. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector C (20P): disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Cable reel connector C (20P) No. 3
Test point 2	Cable reel connector C (20P) No. 11



Is there continuity when pressing the paddle shifter + (upshift switch) and no continuity when the paddle shifter + (upshift switch) is released?

YES

Go to step 5.

NO

Go to step 4.

4. Paddle shifter + (upshift switch) operation check:

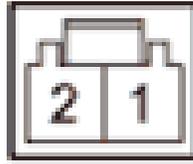
- 1. Disconnect the following connector.

Paddle shifter + (upshift switch) 2P connector
--

- 2. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector C (20P): disconnected
Â	Paddle shifter + (upshift switch) 2P connector: disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Paddle shifter + (upshift switch) 2P connector No. 1
Test point 2	Paddle shifter + (upshift switch) 2P connector No. 2

PADDLE SHIFTER + (UPSHIFT SWITCH) 2P CONNECTOR



Terminal side of male terminals

Is there continuity when pressing the paddle shifter + (upshift switch) and no continuity when the paddle shifter + (upshift switch) is released?

YES

The paddle shifter + (upshift switch) is OK. [Replace the cable reel subharness](#) .

NO

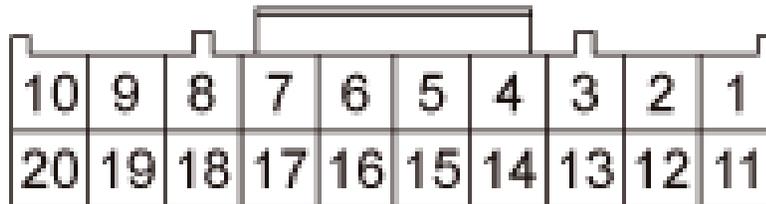
[Replace the paddle shifter + \(upshift switch\)](#) .

5. Open wire check (GND line):

- 1. [Remove the cable reel](#) .
- 2. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector A (20P): disconnected
Â	Cable reel connector C (20P): disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Cable reel connector A (20P) No. 1
Test point 2	Body ground

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

Is there continuity?

YES

The GND wire is OK. Go to step 6.

NO

Repair an open in the GND wire between the cable reel and ground (G401), or repair poor ground (G401).

6. Shorted wire check (PADDLE SW UP line):

- 1. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector A (20P): disconnected
Â	Cable reel connector C (20P): disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Cable reel connector A (20P) No. 18
Test point 2	Body ground

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

Is there continuity?

YES

Repair a short to ground in the PADDLE SW UP wire between the cable reel and the PCM.

NO

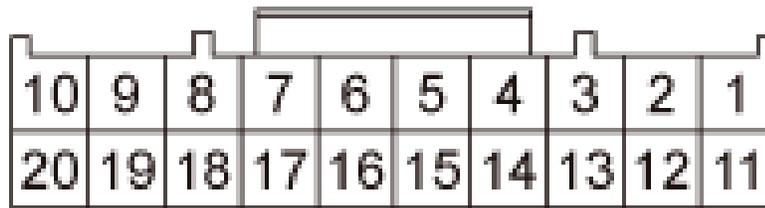
The PADDLE SW UP wire is not shorted. Go to step 7.

7. Open wire check (PADDLE SW UP line):

- 1. Connect terminals A and B with a jumper wire.

Terminal A	Cable reel connector A (20P) No. 18
Terminal B	Body ground

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

- 2. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector A (20P): disconnected
Â	Cable reel connector C (20P): disconnected
Â	PCM connector A (51P): disconnected
Â	Cable reel connector A (20P) No. 18: jumped to body ground
Test point 1	PCM connector A (51P) No. 18
Test point 2	Body ground

Is there continuity?

YES

The PADDLE SW UP wire is OK. [Replace the cable reel](#).

NO

Repair an open in the PADDLE SW UP wire between the cable reel and the PCM.

PADDLE SHIFTER - (DOWNSHIFT SWITCH) CIRCUIT TROUBLESHOOTING (CVT)

SRS components are located in this area. Review the SRS component locations - Refer to: [SRS Component Location Index \(KA/KC\)](#), or [SRS Component Location Index \(KA/KC\)](#) and the [precautions and procedures](#) before doing repair or service.

1. Problem verification:

- 1. Connect the HDS to the DLC - Refer to: [How to Troubleshoot the Fuel and Emissions Systems](#), or [How to Troubleshoot the CVT System \(CVT\)](#).
- 2. Turn the vehicle to the ON mode.
- 3. Make sure the HDS communicates with the vehicle. If it does not, [go to the DLC circuit troubleshooting](#).

- 4. Check the parameter(s) below with the HDS when repeatedly pressing and releasing the paddle shifter - (downshift switch).

Signal A	Current conditions	
	A Values	Unit
Downshift Switch (ST)	A	A

Is ON indicated when you are pressing the paddle shifter - (downshift switch) and OFF with the switch released?

YES

Intermittent failure, the system is OK at this time.

NO

The failure is duplicated. Go to step 2.

2. Determine possible failure area (PCM, others):

- 1. Turn the vehicle to the OFF (LOCK) mode.
- 2. Jump the SCS line with the HDS.
- 3. Disconnect the following connector.

PCM connector A (51P)

- 4. Check for continuity between test points 1 and 2.

Test condition A	Vehicle OFF (LOCK) mode PCM connector A (51P): disconnected
Test point 1	PCM connector A (51P) No. 19
Test point 2	Body ground

Is there continuity when pressing the paddle shifter - (downshift switch) and no continuity when the paddle shifter - (downshift switch) is released?

YES

[Update the PCM if it does not have the latest software](#) , or [substitute a known-good PCM](#) , then recheck. If the symptom goes away and the PCM was updated, troubleshooting is complete. If the symptom goes away and the PCM was substituted, [replace the original PCM](#) .

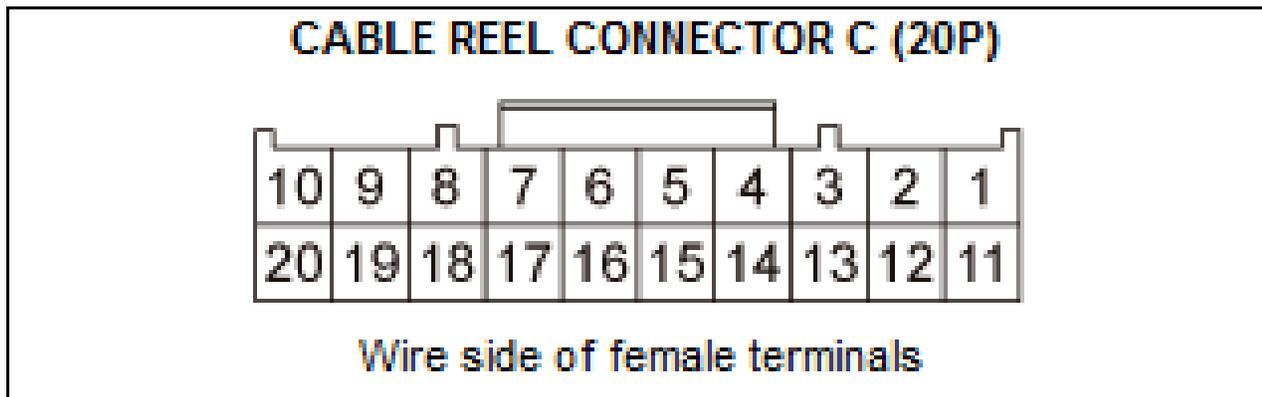
NO

Go to step 3.

3. Determine possible failure area (paddle shifter - (downshift switch), others):

- 1. [Remove the steering wheel](#) .
- 2. Check for continuity between test points 1 and 2.

Test condition A A	Vehicle OFF (LOCK) mode Cable reel connector C (20P): disconnected PCM connector A (51P): disconnected
Test point 1	Cable reel connector C (20P) No. 4
Test point 2	Cable reel connector C (20P) No. 12



Is there continuity when pressing the paddle shifter - (downshift switch) and no continuity when the paddle shifter - (downshift switch) is released?

YES

Go to step 5.

NO

Go to step 4.

4. Paddle shifter - (downshift switch) operation check:

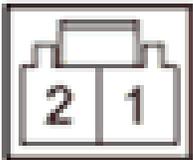
- 1. Disconnect the following connector.

Paddle shifter - (downshift switch) 2P connector

- 2. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector C (20P): disconnected
Â	Paddle shifter - (downshift switch) 2P connector: disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Paddle shifter - (downshift switch) 2P connector No. 1
Test point 2	Paddle shifter - (downshift switch) 2P connector No. 2

PADDLE SHIFTER - (DOWNSHIFT SWITCH) 2P CONNECTOR



Terminal side of male terminals

Is there continuity when pressing the paddle shifter - (downshift switch) and no continuity when the paddle shifter - (downshift switch) is released?

YES

The paddle shifter - (downshift switch) is OK. [Replace the cable reel subharness](#) .

NO

[Replace the paddle shifter - \(downshift switch\)](#) .

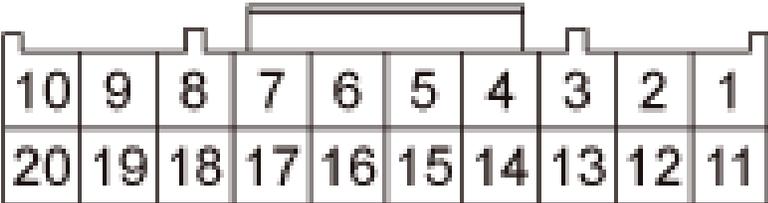
5. Open wire check (GND line):

- 1. [Remove the cable reel](#) .

- 2. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector A (20P): disconnected
Â	Cable reel connector C (20P): disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Cable reel connector A (20P) No. 1
Test point 2	Body ground

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

Is there continuity?

YES

The GND wire is OK. Go to step 6.

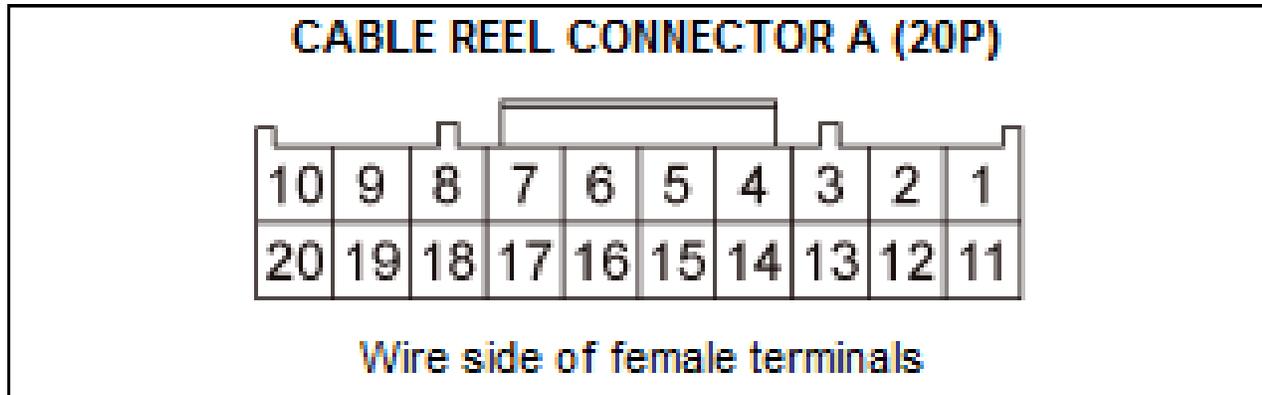
NO

Repair an open in the GND wire between the cable reel and ground (G401), or repair poor ground (G401).

6. Shorted wire check (PADDLE SW DOWN line):

Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector A (20P): disconnected
Â	Cable reel connector C (20P): disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Cable reel connector A (20P) No. 17
Test point 2	Body ground



Is there continuity?

YES

Repair a short to ground in the PADDLE SW DOWN wire between the cable reel and the PCM.

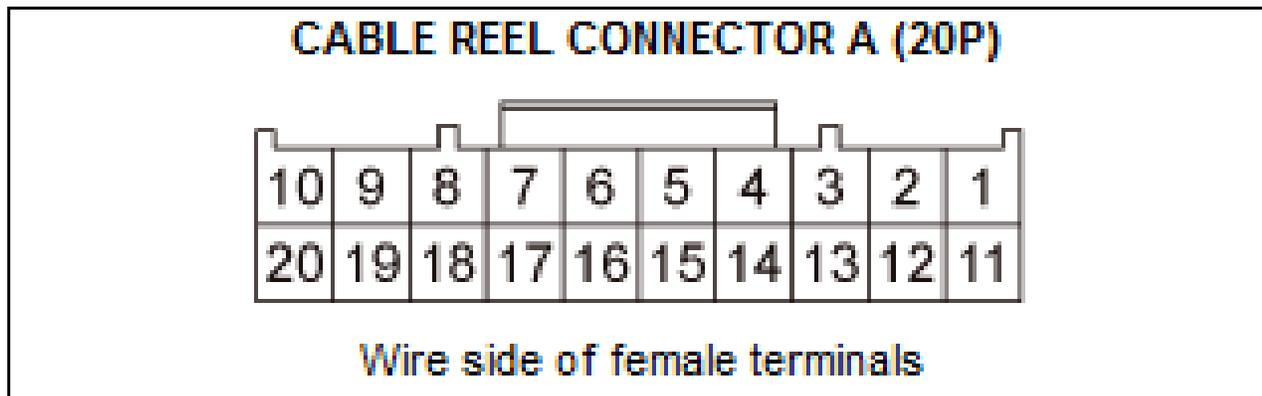
NO

The PADDLE SW DOWN wire is not shorted. Go to step 7.

7. Open wire check (PADDLE SW DOWN line):

- 1. Connect terminals A and B with a jumper wire.

Terminal A	Cable reel connector A (20P) No. 17
Terminal B	Body ground



- 2. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Cable reel connector A (20P): disconnected
Â	Cable reel connector C (20P): disconnected
Â	PCM connector A (51P): disconnected
Â	Cable reel connector A (20P) No. 17: jumped to body ground
Test point 1	PCM connector A (51P) No. 19
Test point 2	Body ground

Is there continuity?

YES

The PADDLE SW DOWN wire is OK. **Replace the cable reel** .

NO

Repair an open in the PADDLE SW DOWN wire between the cable reel and the PCM.

SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING (CVT)

NOTE: Check for PGM-FI DTCs and CVT DTCs. If any DTCs are present, troubleshoot those first.

PGM-FI System

DTC Description	Confirmed DTC	Pending DTC	Freeze Frame
Ä	Ä	Ä	Ä

CVT System

DTC Description	Confirmed DTC	Pending DTC	Freeze Frame
Ä	Ä	Ä	Ä

1. Shift lock solenoid check:

- 1. Connect the HDS to the DLC - Refer to: [How to Troubleshoot the Fuel and Emissions Systems](#), or [How to Troubleshoot the CVT System \(CVT\)](#).
- 2. Turn the vehicle to the ON mode.
- 3. Make sure the HDS communicates with the vehicle. If it does not, [go to the DLC circuit troubleshooting](#).
- 4. Select the Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.

Shift Lock Solenoid Test

Does the shift lock solenoid work properly?

YES

The shift lock solenoid is OK. Go to step 7.

NO

Go to step 2.

2. Fuse check:

- 1. Turn the vehicle to the OFF (LOCK) mode.
- 2. Check the following fuse.

Fuse	No. C34 (7.5 A)
Location	Under-dash fuse/relay box

Is the fuse OK?

YES

The fuse is OK. Go to step 3.

NO

Replace the No. C34 (7.5 A) fuse, and recheck. If the fuse blows again, repair a short to ground in the No. C34 (7.5 A) fuse circuit.

3. Open wire check (IG1 METER line):

- 1. [Remove the center console](#).
- 2. Disconnect the following connector.

Shift lock solenoid 2P connector

- 3. Turn the vehicle to the ON mode.
- 4. Measure the voltage between test points 1 and 2.

Test condition	Vehicle ON mode
Ä	Shift lock solenoid 2P connector: disconnected
Test point 1	Shift lock solenoid 2P connector No. 2
Test point 2	Body ground

SHIFT LOCK SOLENOID 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES

The IG1 METER wire is OK. Go to step 4.

NO

Repair an open in the IG1 METER wire between the shift lock solenoid and the under-dash fuse/relay box.

4. Determine possible failure area (short in SHIFT LOCK SOL line, open in SHIFT LOCK SOL line):

- 1. With the shift lever in P position/mode, press the brake pedal.

NOTE: Do not press the accelerator pedal.

- 2. Measure the voltage between test points 1 and 2.

Test condition	Vehicle ON mode
Â	Shift lock solenoid 2P connector: disconnected
Test point 1	Shift lock solenoid 2P connector No. 1
Test point 2	Shift lock solenoid 2P connector No. 2

SHIFT LOCK SOLENOID 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES

Go to step 5.

NO

Go to step 6.

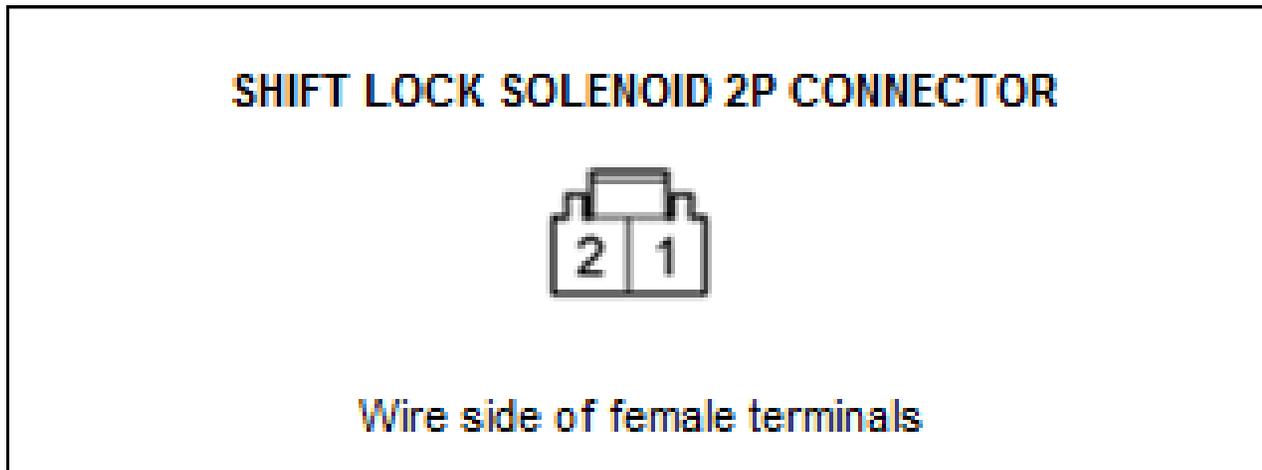
5. Shorted wire check (SHIFT LOCK SOL line):

- 1. Release the brake pedal.

NOTE: The shift lever must be in P position/mode.

- 2. Measure the voltage between test points 1 and 2.

Test condition	Vehicle ON mode
Â	Shift lock solenoid 2P connector: disconnected
Test point 1	Shift lock solenoid 2P connector No. 1



Is there battery voltage?

YES

Repair a short to ground in the SHIFT LOCK SOL wire between the shift lock solenoid and the PCM.

NO

The SHIFT LOCK SOL wire is OK. Check the shift lock mechanism. If the mechanism is OK, [replace the shift lock solenoid](#).

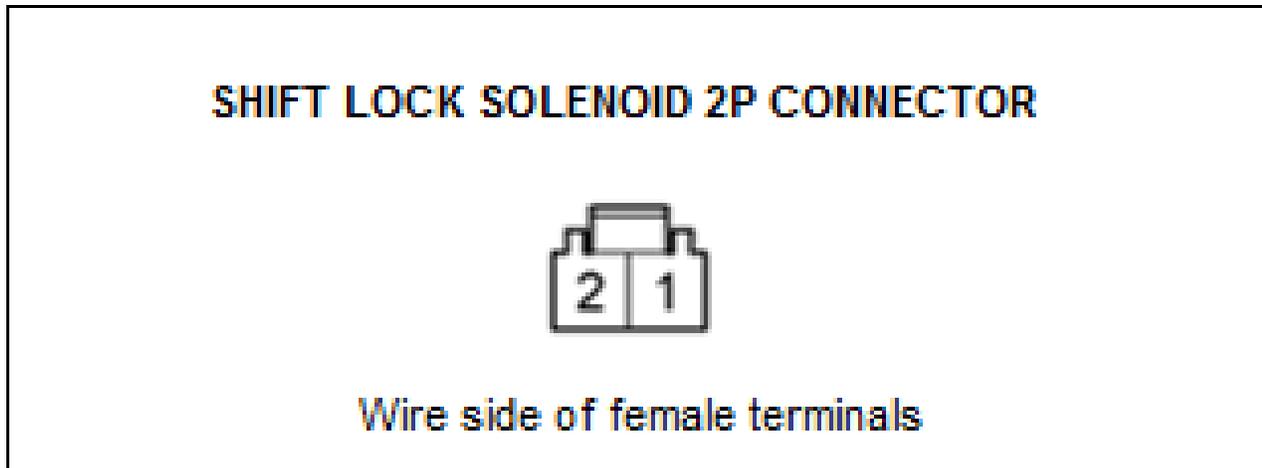
6. Open wire check (SHIFT LOCK SOL line):

- 1. Turn the vehicle to the OFF (LOCK) mode.
- 2. Jump the SCS line with the HDS.
- 3. Disconnect the following connector.

PCM connector A (51P)

- 4. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Â	Shift lock solenoid 2P connector: disconnected
Â	PCM connector A (51P): disconnected
Test point 1	Shift lock solenoid 2P connector No. 1
Test point 2	PCM connector A (51P) No. 21



Is there continuity?

YES

The SHIFT LOCK SOL wire is OK. [Update the PCM if it does not have the latest software](#) , or [substitute a known-good PCM](#) , then recheck. If the symptom goes away and the PCM was updated, troubleshooting is complete. If the symptom goes away and the PCM was substituted, [replace the original PCM](#) .

NO

Repair an open in the SHIFT LOCK SOL wire between the shift lock solenoid and the PCM.

7. Brake pedal position switch check:

Check the parameter(s) below with the HDS while pressing the brake pedal.

Signal	Threshold		Current conditions	
	Values	Unit	Values	Unit
Brake Switch	ON	Å	Å	Å

Do the current condition (s) match the threshold?

YES

The brake pedal position switch is OK. Go to step 9.

NO

If the brake lights come on, go to step 8. If the brake lights do not work, repair faulty brake light circuit.

8. Open wire check (BRK DIAG line):

- 1. Turn the vehicle to the OFF (LOCK) mode.
- 2. Jump the SCS line with the HDS.
- 3. Disconnect the following connector.

PCM connector A (51P)

- 4. Measure the voltage between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Å	PCM connector A (51P): disconnected
Test point 1	PCM connector A (51P) No. 13
Test point 2	Body ground

Is there battery voltage while pressing the brake pedal, and about 0 V when the pedal is released?

YES

The BRK DIAG wire is OK. [Update the PCM if it does not have the latest software](#) , or [substitute a known-good PCM](#) , then recheck. If the symptom goes away and the PCM was updated, troubleshooting is complete. If the symptom goes away and the PCM was substituted, [replace the original PCM](#) .

NO

Repair an open in the BRK DIAG wire between the brake pedal position switch and the PCM.

9. Transmission range switch operation check:

Check the parameter(s) below with the HDS with the shift lever in P position/mode.

Signal	Threshold		Current conditions	
	Values	Unit	Values	Unit
A/T P Switch	ON	Å	Å	Å

Do the current condition (s) match the threshold?

YES

The transmission range switch is OK. Go to step 12.

NO

Go to step 10.

10. Transmission range switch check:

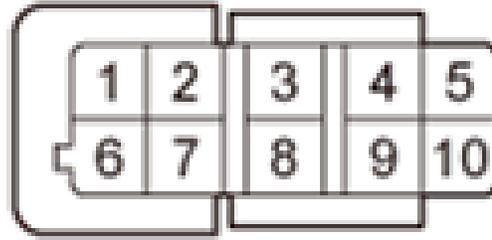
- 1. Turn the vehicle to the OFF (LOCK) mode.
- 2. Disconnect the following connector.

Transmission range switch 10P connector

- 3. Connect terminals A and B with a jumper wire.

Terminal A	Transmission range switch 10P connector No. 4
Terminal B	Body ground

TRANSMISSION RANGE SWITCH 10P CONNECTOR



Terminal side of female terminals

- 4. Turn the vehicle to the ON mode.
- 5. Check the parameter(s) below.

Signal	Threshold		Current conditions	
	Values	Unit	Values	Unit
A/T P Switch	ON	Å	Å	Å

Do the current condition (s) match the threshold?

YES

Replace the transmission range switch .

NO

The transmission range switch is OK. Go to step 11.

11. Open wire check (ATP P line):

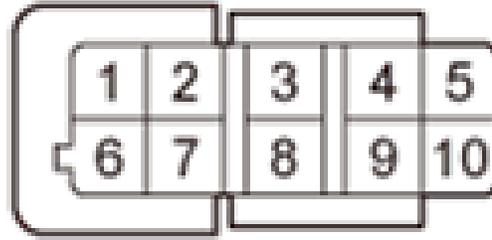
- 1. Turn the vehicle to the OFF (LOCK) mode.
- 2. Remove the jumper wire.
- 3. Jump the SCS line with the HDS.
- 4. Disconnect the following connector.

PCM connector B (51P)

- 5. Check for continuity between test points 1 and 2.

Test condition	Vehicle OFF (LOCK) mode
Å	Transmission range switch 10P connector: disconnected
Å	PCM connector B (51P): disconnected
Test point 1	Transmission range switch 10P connector No. 4
Test point 2	<u>PCM connector B (51P) No. 21</u>

TRANSMISSION RANGE SWITCH 10P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES

The ATP P wire is OK. [Update the PCM if it does not have the latest software](#) , or [substitute a known-good PCM](#) , then recheck. If the symptom goes away and the PCM was updated, troubleshooting is complete. If the symptom goes away and the PCM was substituted, [replace the original PCM](#) .

NO

Repair an open in the ATP P wire between the transmission range switch and the PCM.

12. APP sensor check:

Check the parameter(s) below with the HDS.

NOTE: Do not press the accelerator pedal.

Signal	Threshold		Current conditions	
	Values	Unit	Values	Unit
APP Sensor (%)	More than 5	%	Â	Â
APP Sensor A (V)	Higher than 1.16	V	Â	Â

Do the current condition (s) match the threshold?

YES

The APP sensor is OK. [Update the PCM if it does not have the latest software](#) , or [substitute a known-good PCM](#) , then recheck. If the symptom goes away and the PCM was updated, troubleshooting is complete. If the symptom goes away and the PCM was substituted, [replace the original PCM](#) .

NO

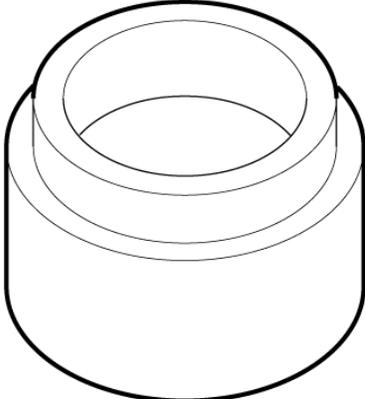
[Check the APP sensor](#) .

DISASSEMBLY AND REASSEMBLY

CVT DIFFERENTIAL CARRIER DISASSEMBLY AND REASSEMBLY (CVT)

Special Tools Required

Image	Description/Tool Number
-------	-------------------------

Image	Description/Tool Number
	Installer Attachment 40 mm 07LAD-PW50601

Exploded View

1. Differential - Exploded View

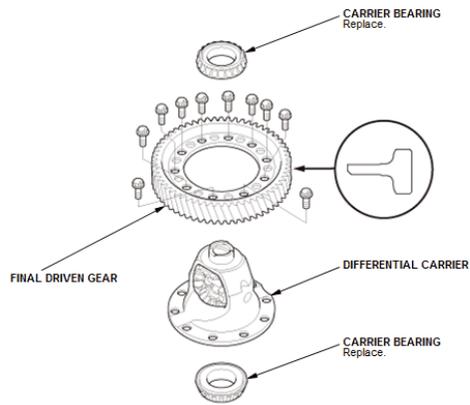
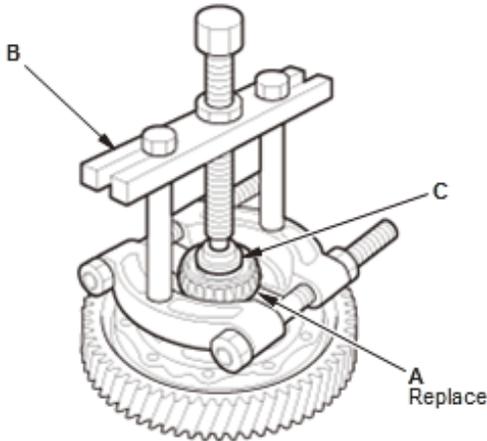


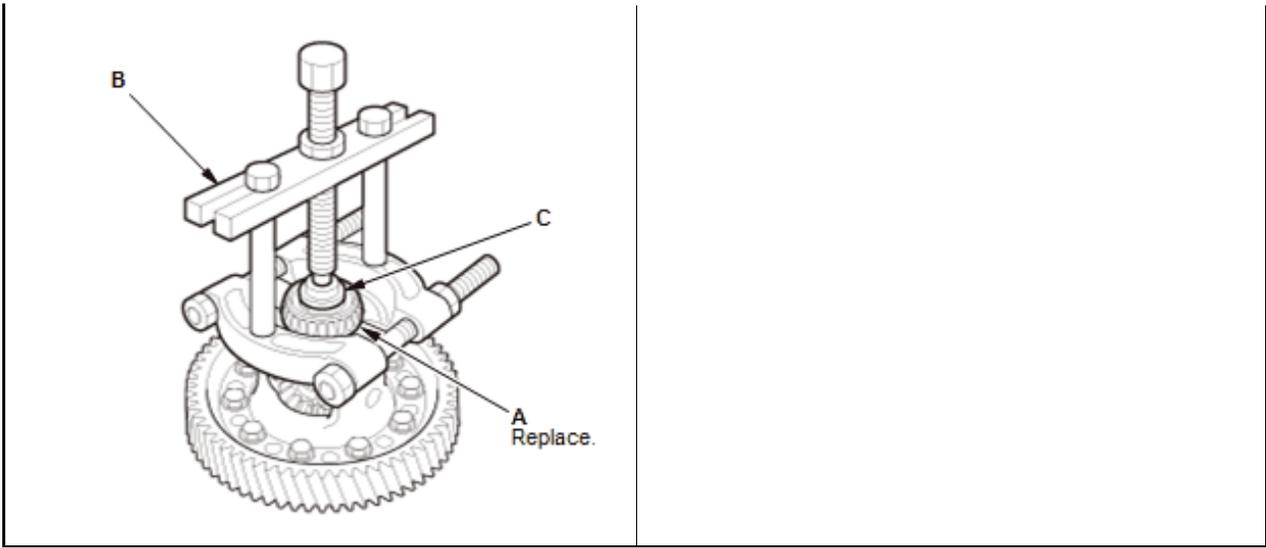
Fig. 32: Exploded View Of Differential
 Courtesy of HONDA, U.S.A., INC.

Disassembly

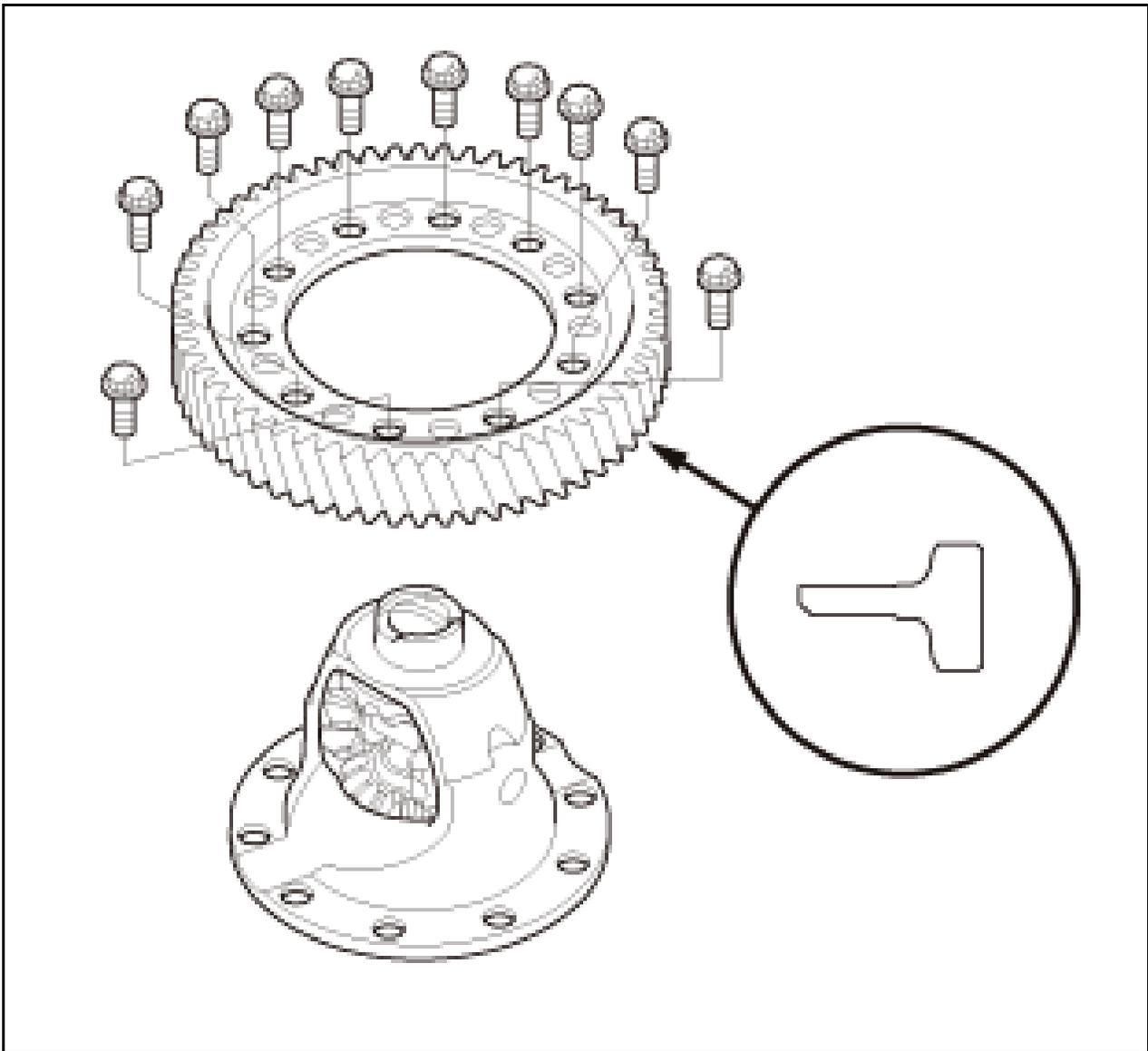
NOTE: The carrier bearing and the carrier bearing outer race should be replaced as a set.

1. Differential Carrier Bearing - Remove

<p>Transmission housing side</p>  <p>Torque converter housing side</p>	<p>1. Remove the carrier bearings (A) using a commercially available bearing puller (B) and a spacer (C).</p>
---	---



2. Final Driven Gear - Remove



NOTE: The final driven gear bolts have left-hand threads.

Reassembly

NOTE:

- The carrier bearing and the carrier bearing outer race should be replaced as a set.
- **Adjust the carrier bearing preload** after replacing the carrier bearing and the carrier bearing outer race.
- Apply a light coat of clean transmission fluid on all parts before installation.

1. Final Driven Gear - Install

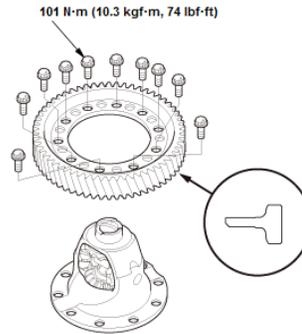


Fig. 33: Final Driven Gear With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

NOTE:

- The final driven gear bolts have left-hand threads.
- Tighten the bolts to the specified torque in a crisscross pattern in at least two steps.

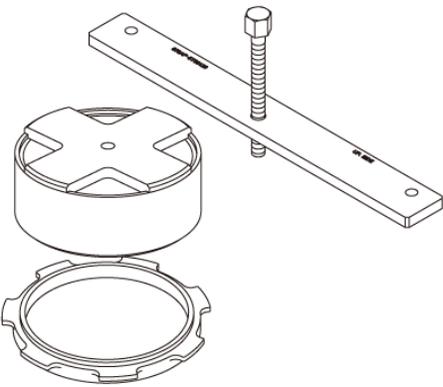
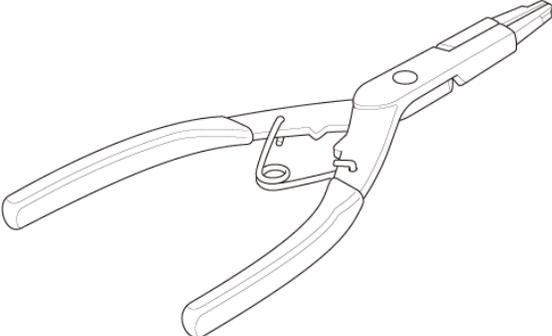
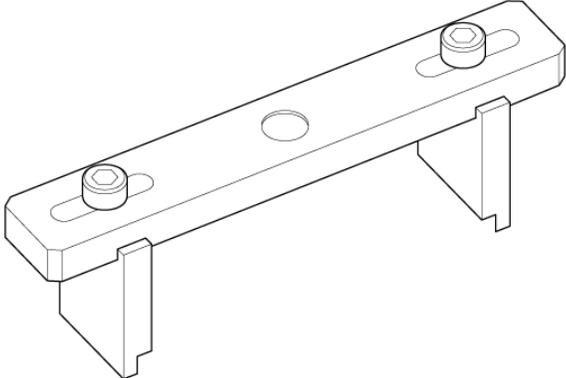
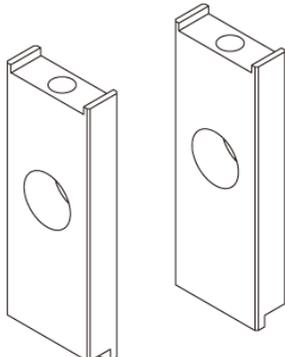
2. Differential Carrier Bearing - Install

<p>Transmission housing side</p>	<p>1. Install the carrier bearing (A) until it bottoms using the 40 mm installer attachment and a press.</p>
<p>Torque converter housing side</p>	

CVT TRANSMISSION DISASSEMBLY AND REASSEMBLY (CVT)

Special Tools Required

Image	Description/Tool Number
-------	-------------------------

Image	Description/Tool Number
 <p>The image shows a reverse brake spring compressor set. It consists of a long metal bar with a threaded end and a hex nut. There are two circular components: one is a top cap with a cross-shaped pattern, and the other is a bottom cap with a flange-like edge.</p>	<p>Reverse Brake Spring Compressor Set 070AF-5T00100</p>
 <p>The image shows a pair of snap ring pliers. They have long, curved handles and a central mechanism with a small spring and a hook-like tip for gripping a snap ring.</p>	<p>Snap Ring Pliers 07LGC-0010100</p>
 <p>The image shows a clutch compressor attachment. It is a long, rectangular metal bar with two circular holes near the ends. There are two small cylindrical components, one on each hole. A vertical tab is attached to the bottom of the bar.</p>	<p>Clutch Compressor Attachment 07ZAE-PRP0100</p>
 <p>The image shows two views of a clutch compressor attachment. It is a long, rectangular metal bar with a circular hole in the center and a small hole near the top edge. One view shows the front, and the other shows the side.</p>	<p>Clutch Compressor Attachment 64 mm 07ZAE-PRP0110</p>

Exploded View

1. Transmission - Exploded View

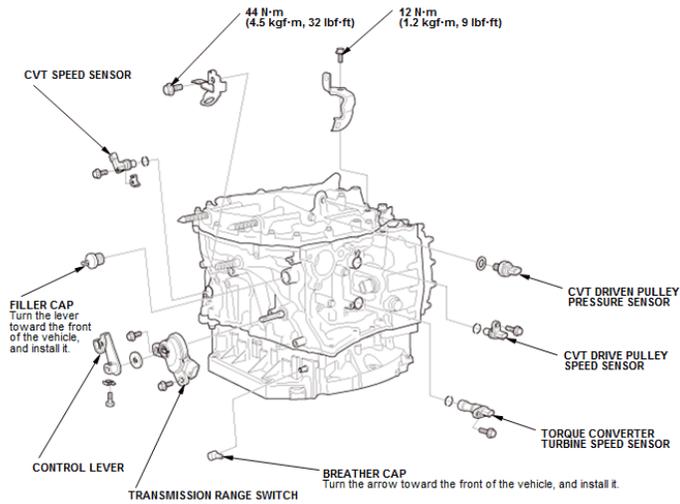


Fig. 34: Exploded View Of Transmission (1 Of 3)
 Courtesy of HONDA, U.S.A., INC.

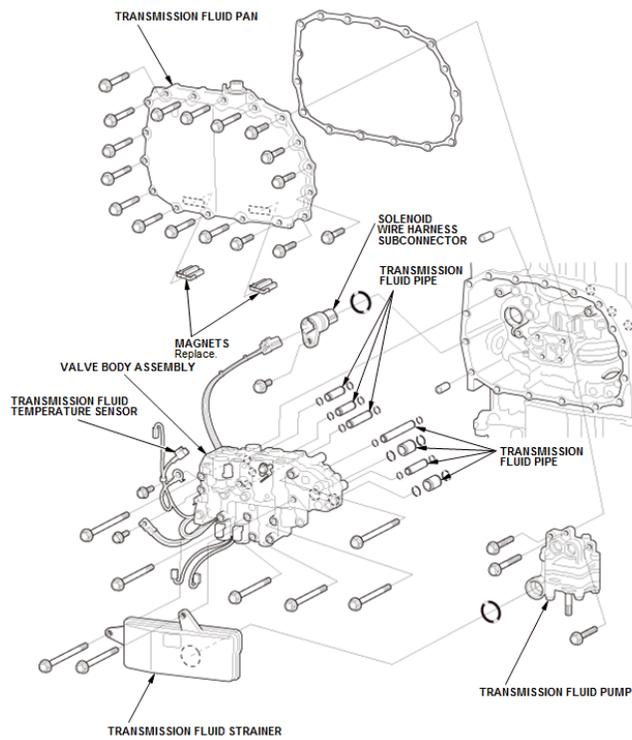


Fig. 35: Exploded View Of Transmission (2 Of 3)
 Courtesy of HONDA, U.S.A., INC.

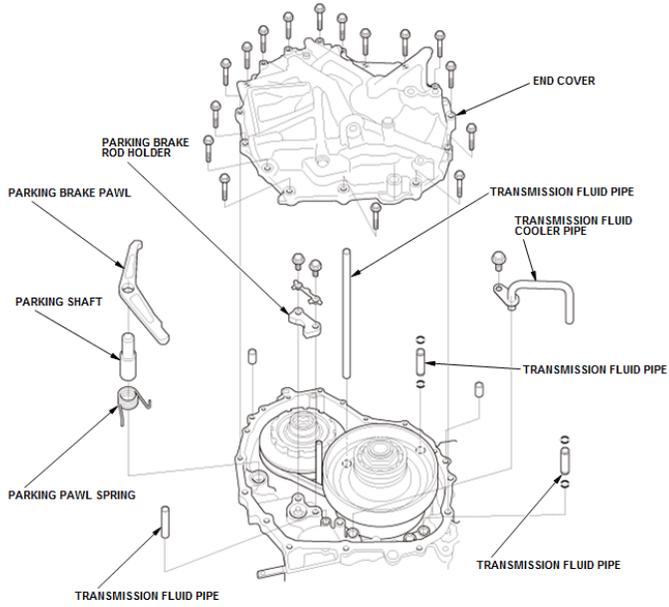


Fig. 36: Exploded View Of Transmission (3 Of 3)
 Courtesy of HONDA, U.S.A., INC.

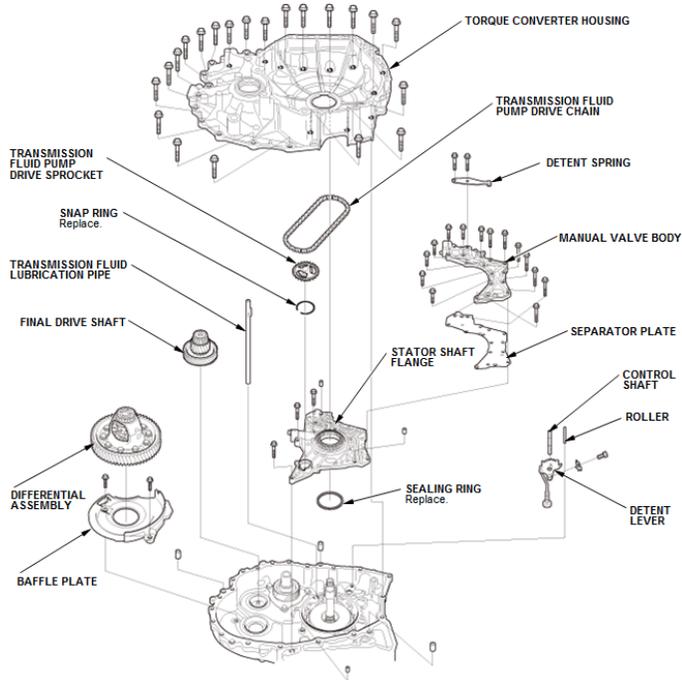


Fig. 37: Exploded View Of Transmission (2WD)
 Courtesy of HONDA, U.S.A., INC.

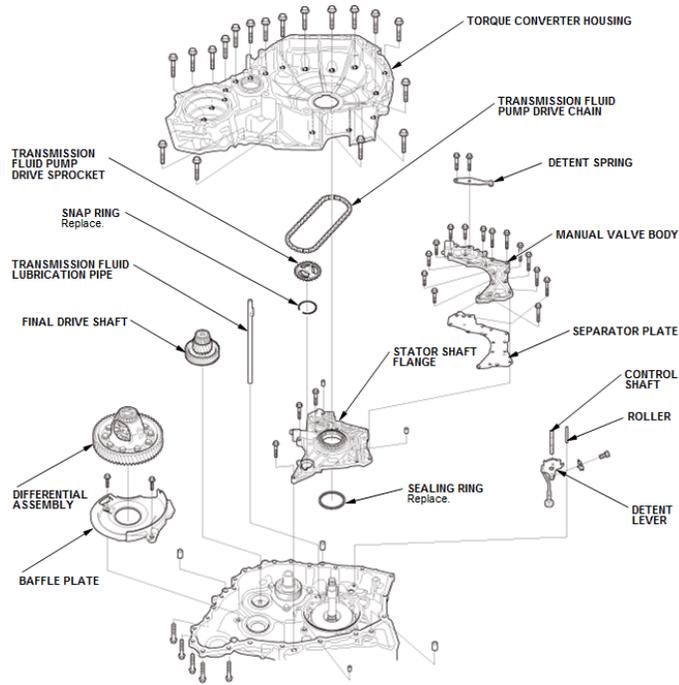
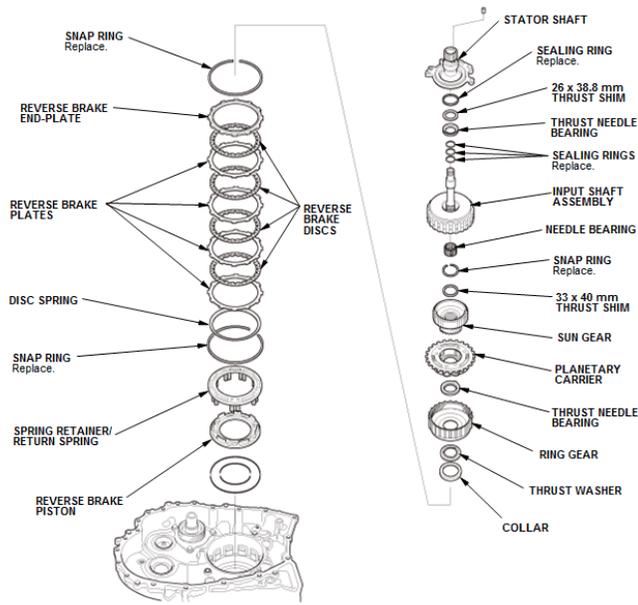


Fig. 38: Exploded View Of Transmission (AWD) (1 Of 2)
 Courtesy of HONDA, U.S.A., INC.



This illustration shows 2WD model.

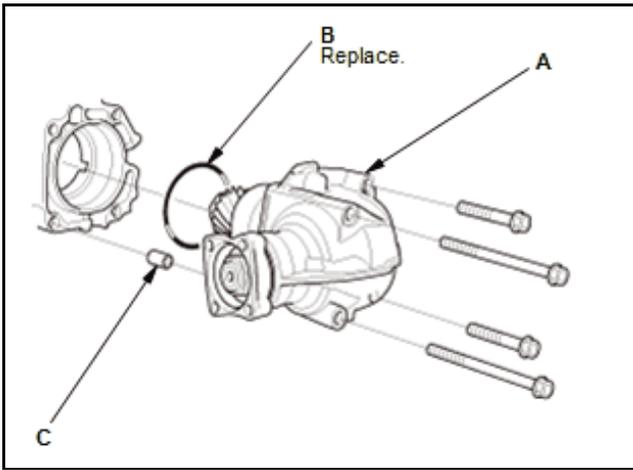
Fig. 39: Exploded View Of Transmission (AWD) (2 Of 2)
 Courtesy of HONDA, U.S.A., INC.

Disassembly

NOTE:

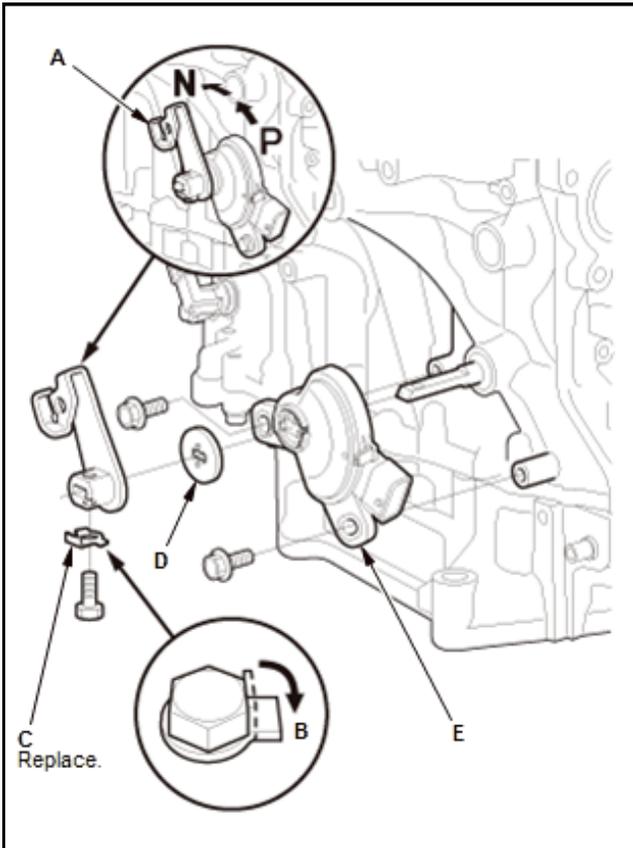
- Refer to the Exploded View as needed during this procedure.
- Keep all foreign particles out of the transmission.

1. Transfer Assembly - Remove (With AWD)



1. Remove the transfer (A) with the O-ring (B)
2. Remove the dowel pin (C).

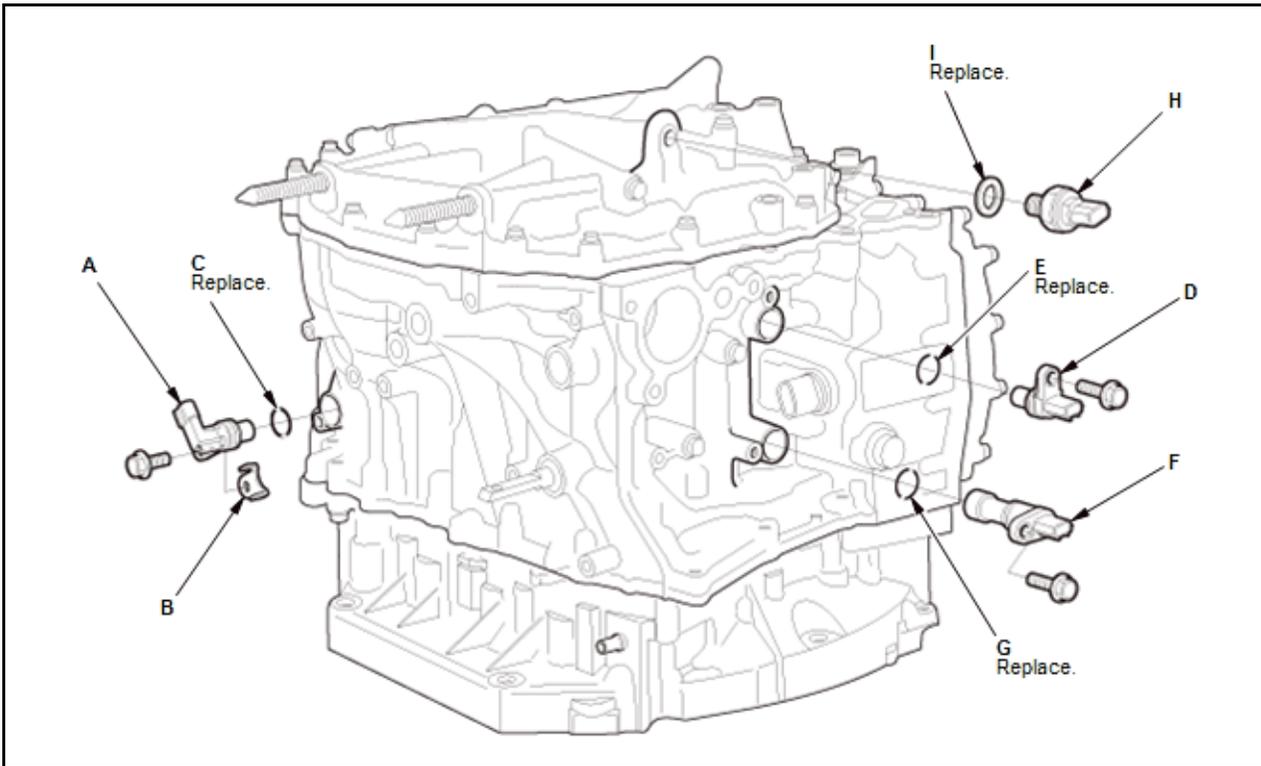
2. Transmission Range Switch - Remove



1. Turn the control lever (A) to the P position, then turn it back two clicks to the N position
2. Pry down the lock tab (B) of the lock washer (C)
3. Remove the control lever and the lock washer
4. Remove the control shaft cover (D)
5. Remove the transmission range switch (E).

3. Sensor - Remove

1. Remove the CVT speed sensor (A) with the sensor washer (B) and the O-ring (C).

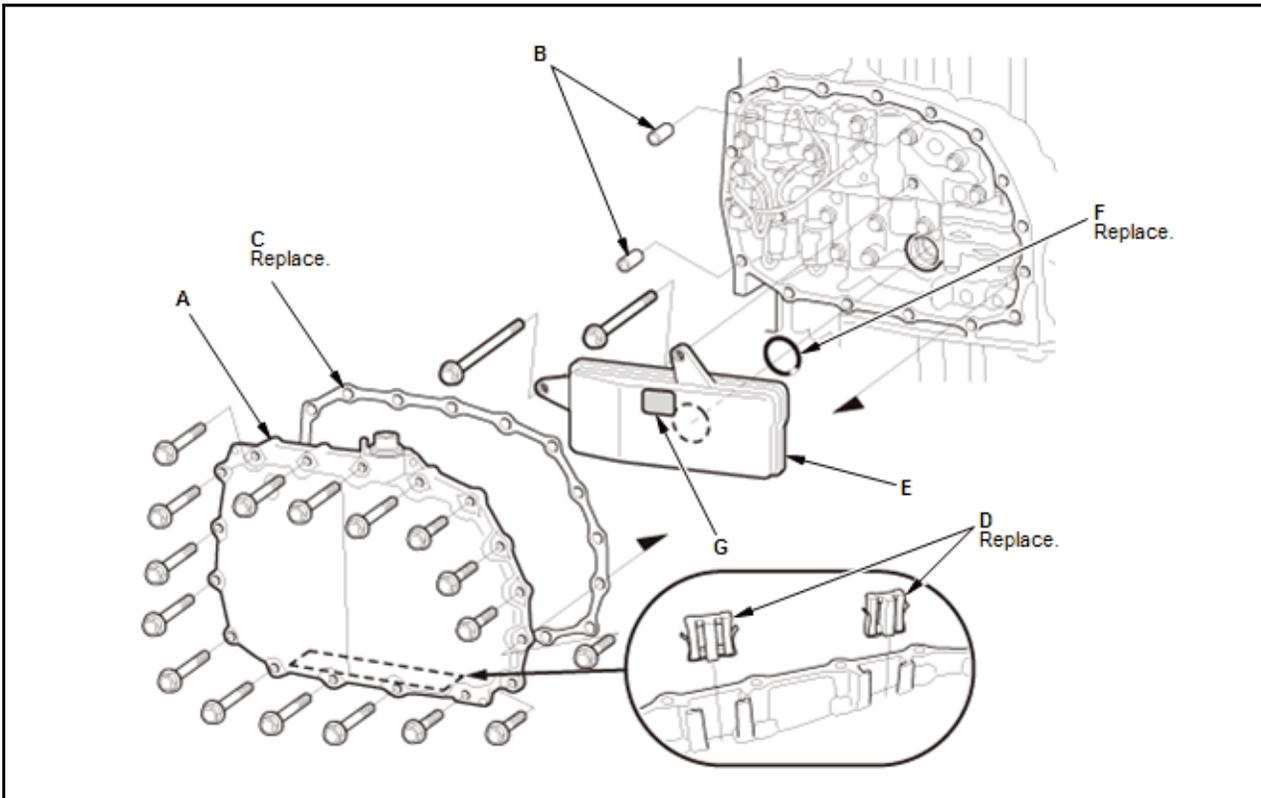


2. Remove the CVT drive pulley speed sensor (D) with the O-ring (E)
3. Remove the torque converter turbine speed sensor (F) with the O-ring (G)
4. Remove the CVT driven pulley pressure sensor (H) with the sealing washer (I).

NOTE: Be careful not to damage the plastic part.

4. Transmission Fluid Pan and Transmission Fluid Strainer - Remove

1. Remove the transmission fluid pan (A) with the dowel pins (B) and the gasket (C).



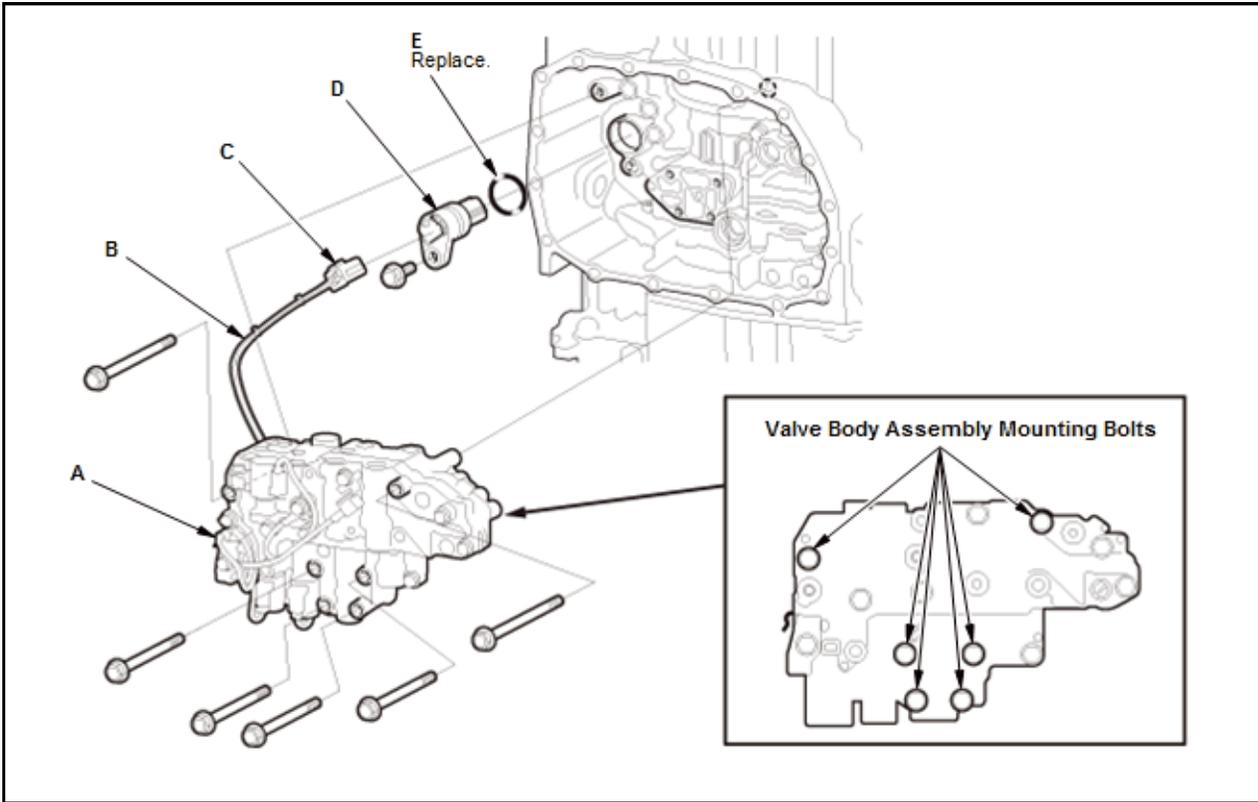
2. Remove the magnets (D)
3. Remove the transmission fluid strainer (E) with the O-ring (F)

4. Clean the inlet opening (G) of the transmission fluid strainer thoroughly with compressed air
5. Check that the strainer is in good condition and that the inlet opening is not clogged
6. Test the strainer by pouring clean transmission fluid through the inlet opening, and replace it if it is clogged or damaged.

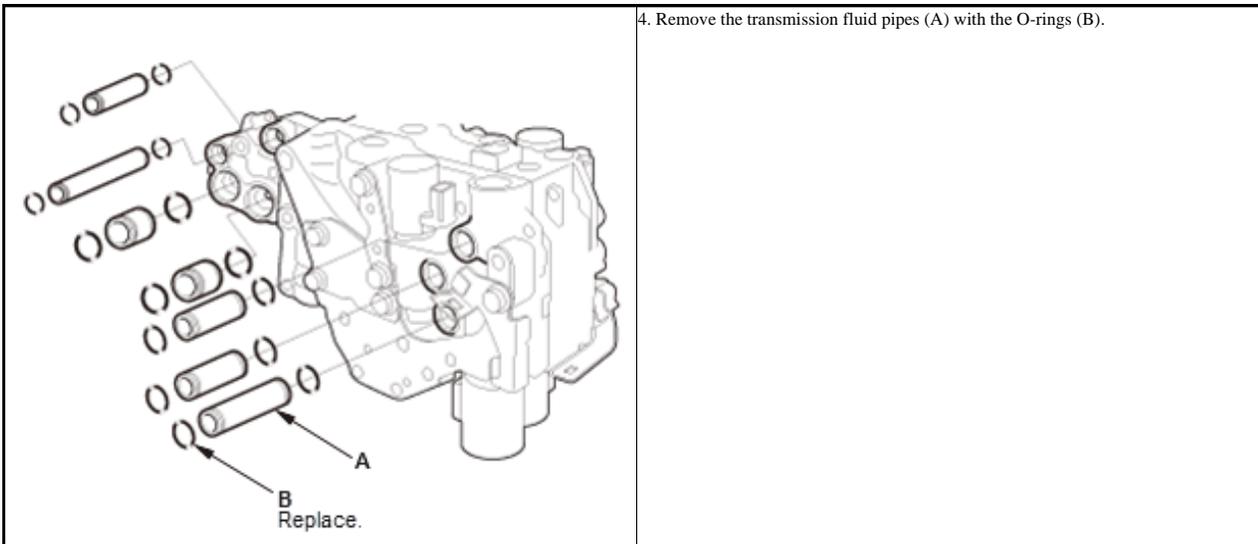
5. Valve Body Assembly - Remove

1. Remove the valve body assembly (A).

NOTE: Do not damage the solenoid wire harness (B) while removing the valve body assembly.



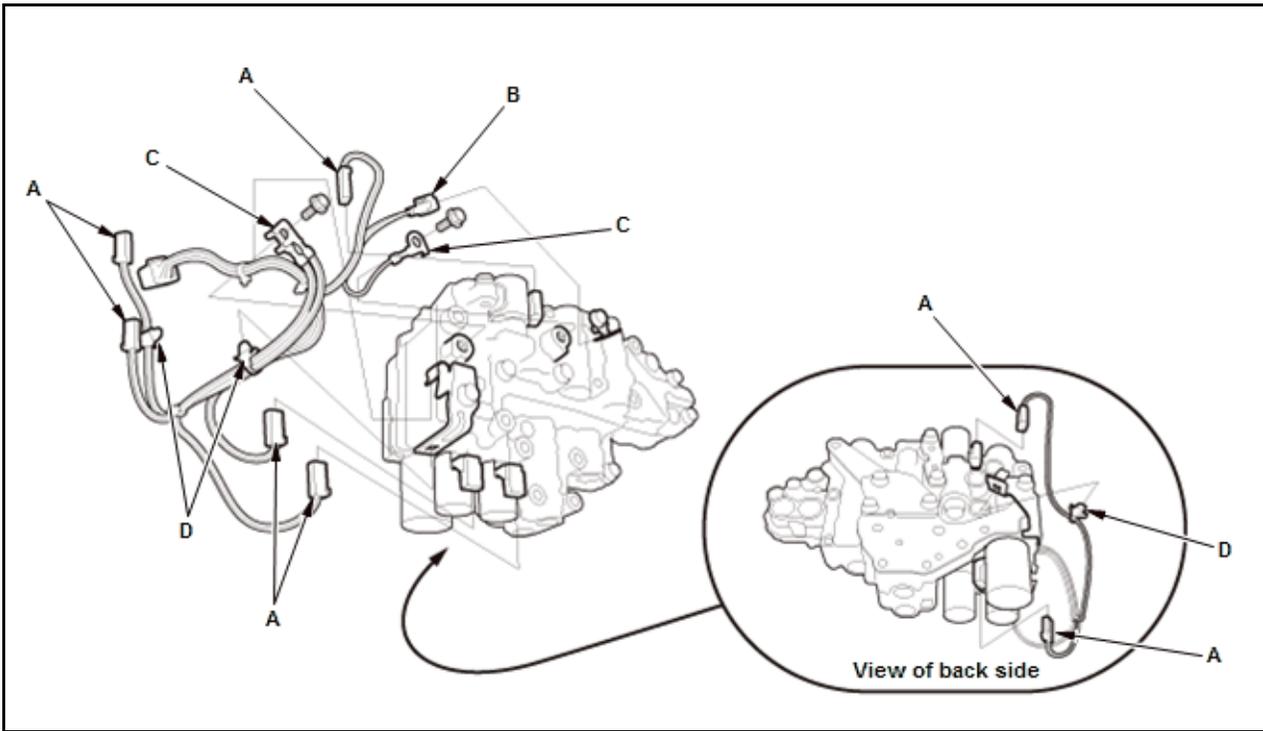
2. Disconnect the connector (C)
3. Remove the solenoid wire harness subconnector (D) with the O-ring (E).



4. Remove the transmission fluid pipes (A) with the O-rings (B).

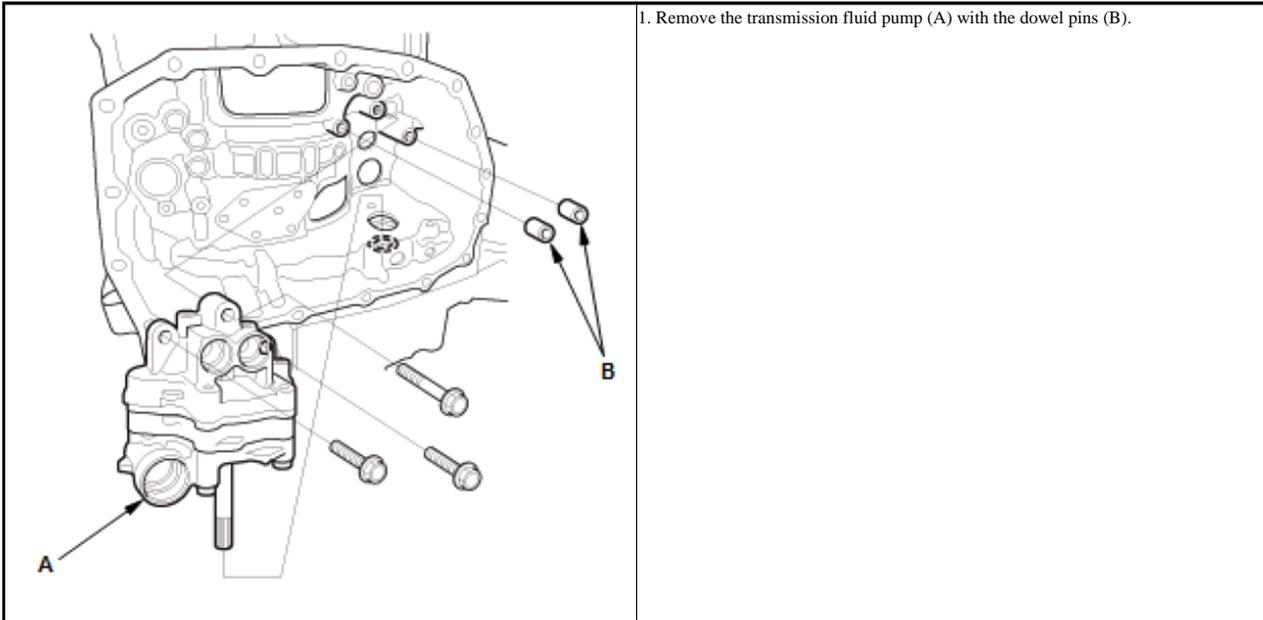
6. Solenoid Wire Harness - Remove

1. Disconnect the connectors (A).

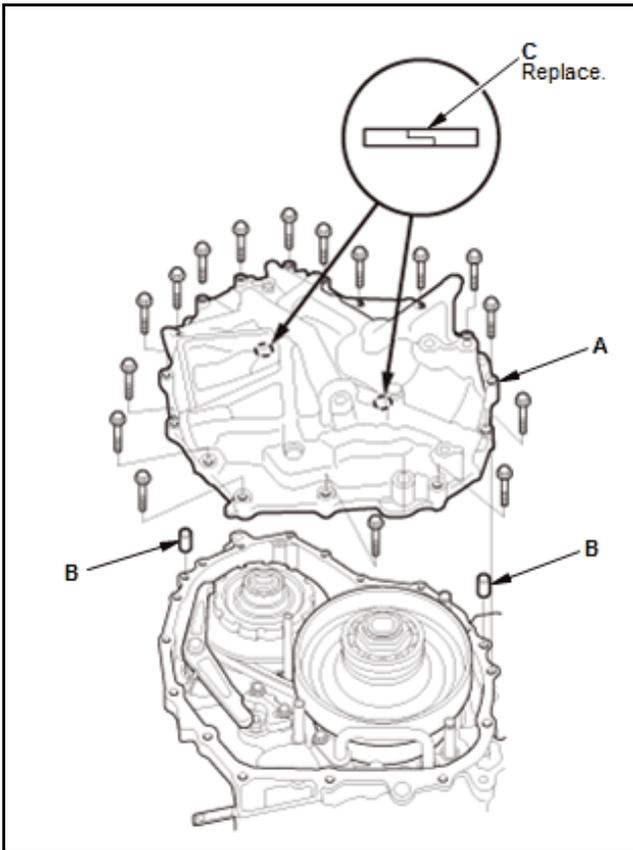


- 2. Remove the transmission fluid temperature sensor (B)
- 3. Remove the ground terminals (C) and the harness clamps (D).

7. Transmission Fluid Pump - Remove

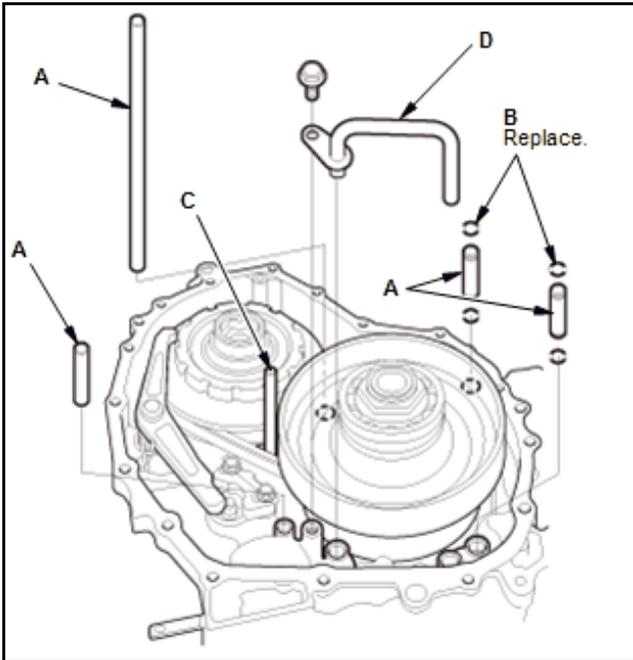


8. End Cover - Remove



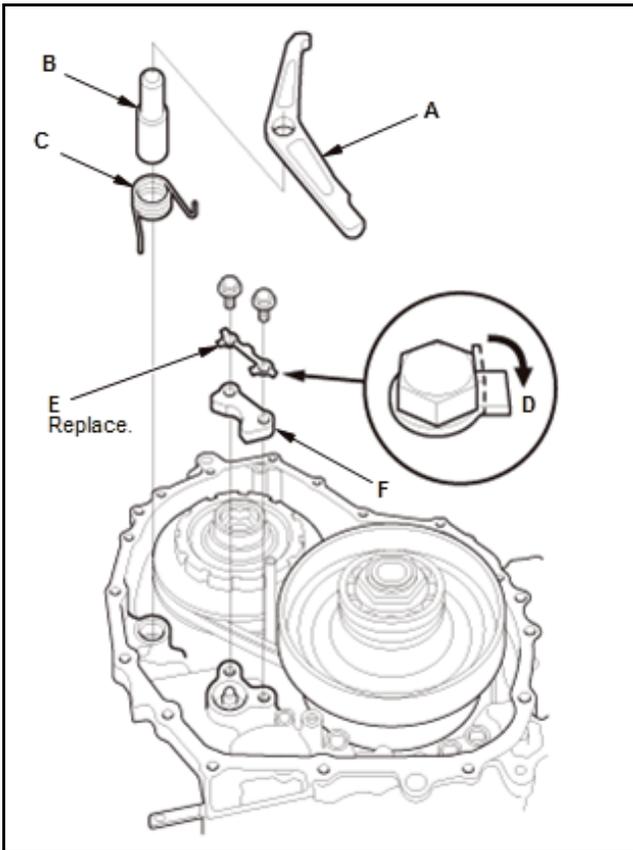
1. Remove the end cover (A) with the dowel pins (B)
2. Remove the sealing rings (C).

9. Transmission Fluid Pipe and Transmission Fluid Cooler Pipe - Remove



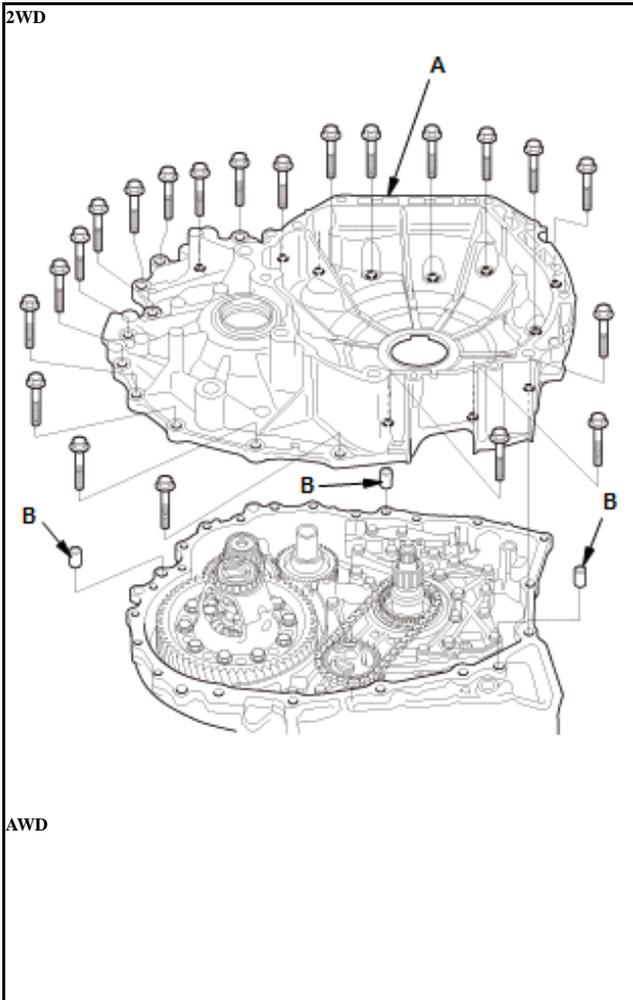
1. Remove the transmission fluid pipes (A) with the O-rings (B).
- NOTE:** Do not remove the transmission fluid lubrication pipe (C) in this time.
2. Remove the transmission fluid cooler pipe (D).

10. Parking Brake Pawl - Remove

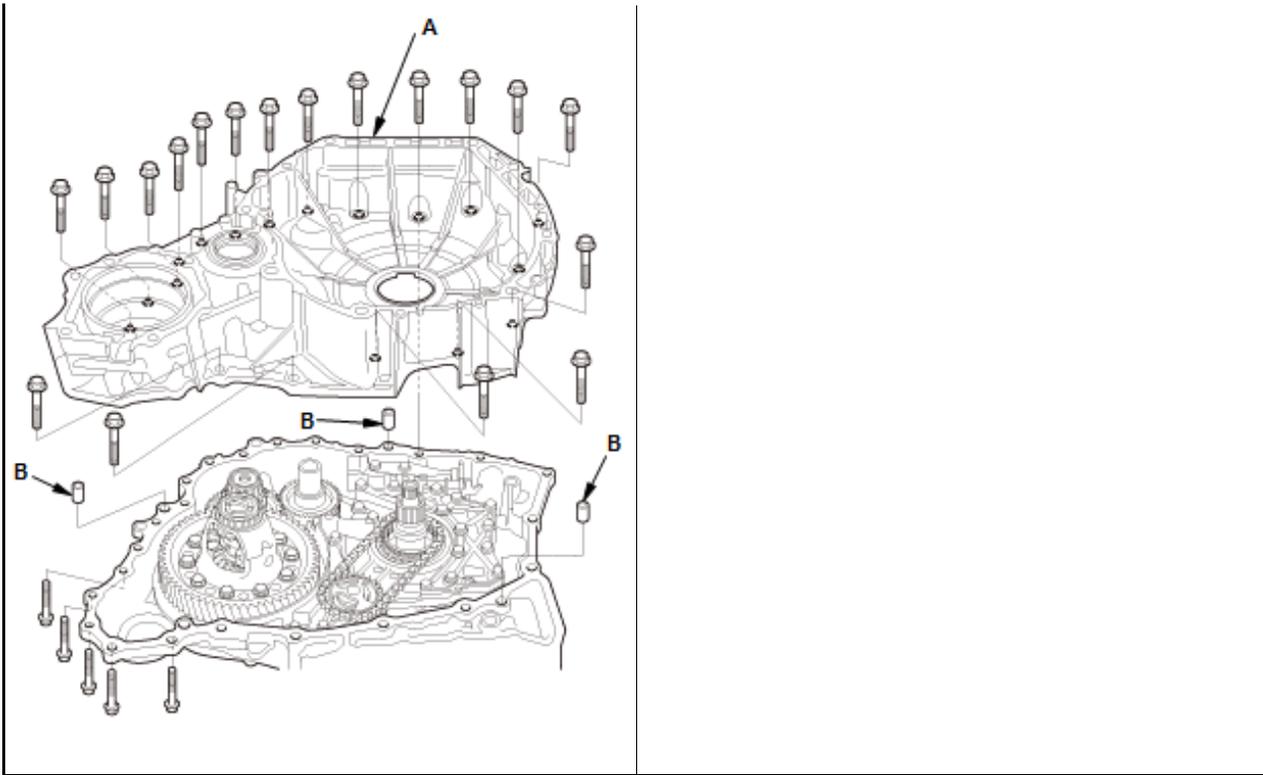


1. Remove the parking brake pawl (A) with the parking shaft (B) and the parking pawl spring (C).
2. Pry down the lock tabs (D) of the lock washer (E).
3. Remove the parking brake rod holder (F) and the lock washer.

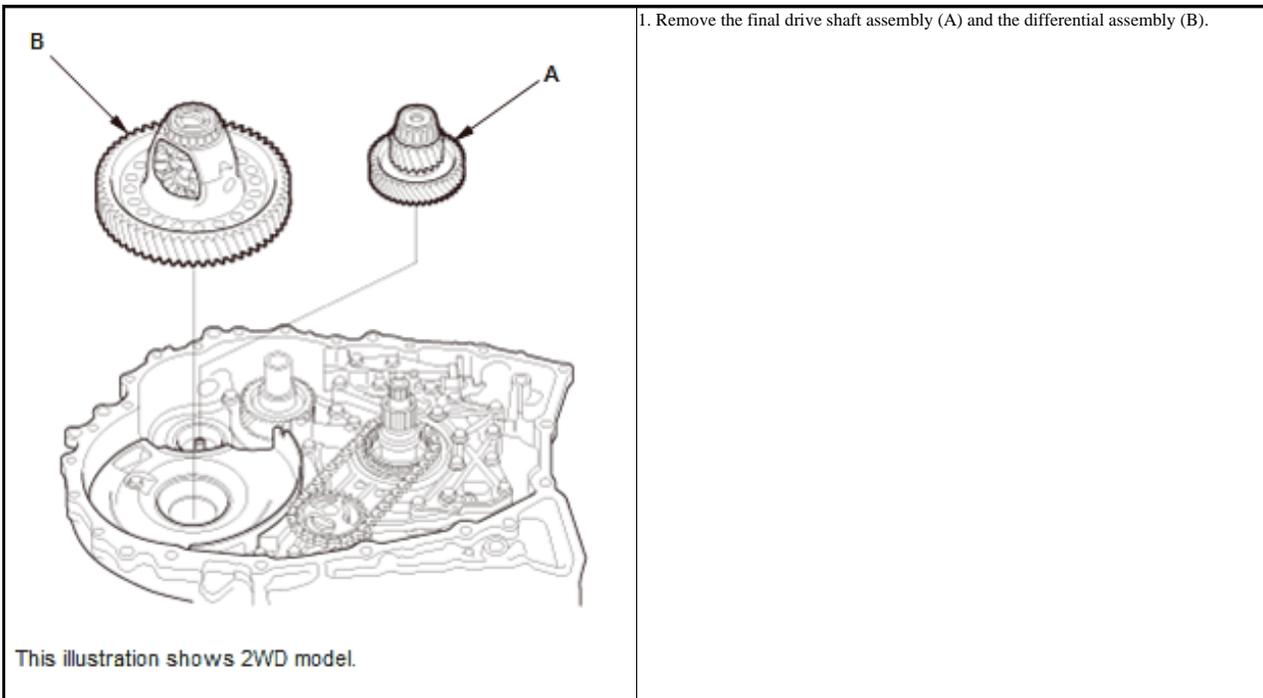
11. Torque Converter Housing - Remove



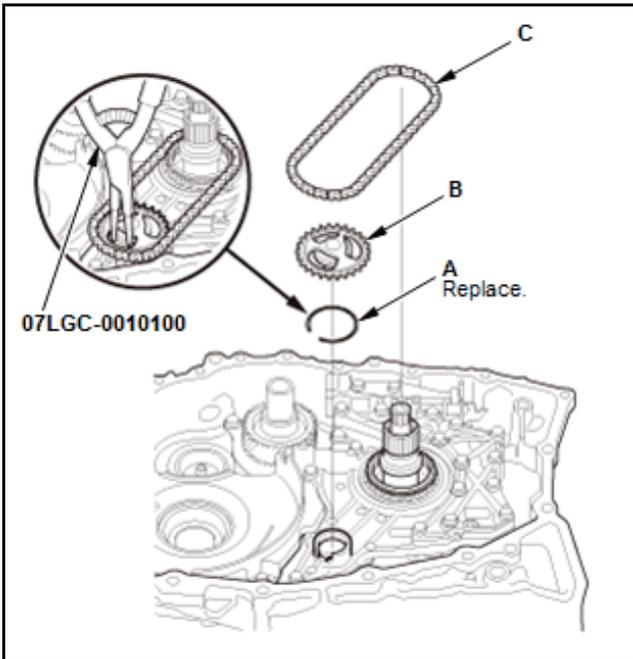
1. Remove the torque converter housing (A) with the dowel pins (B).



12. Final Drive Shaft and Differential Assembly - Remove

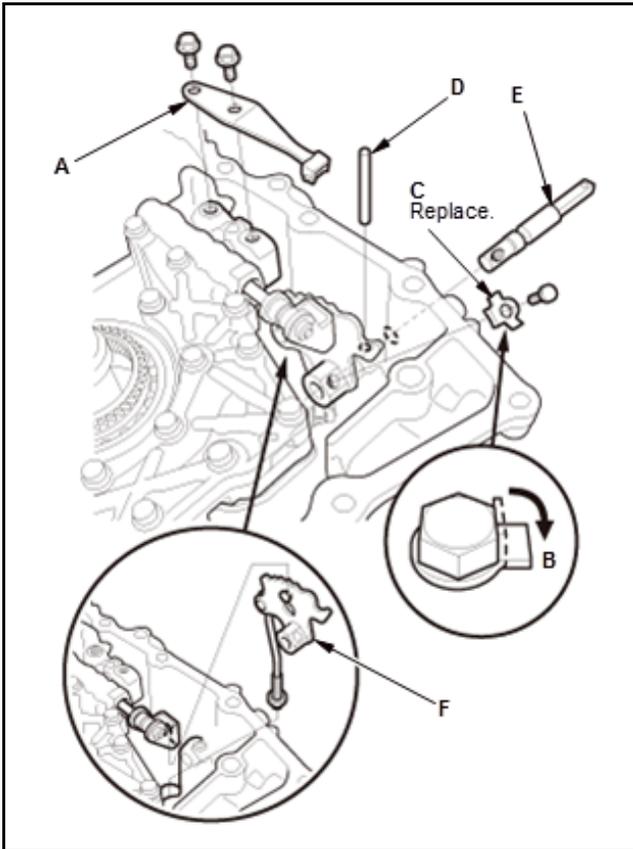


13. Transmission Fluid Pump Drive Sprocket and Transmission Fluid Pump Drive Chain - Remove



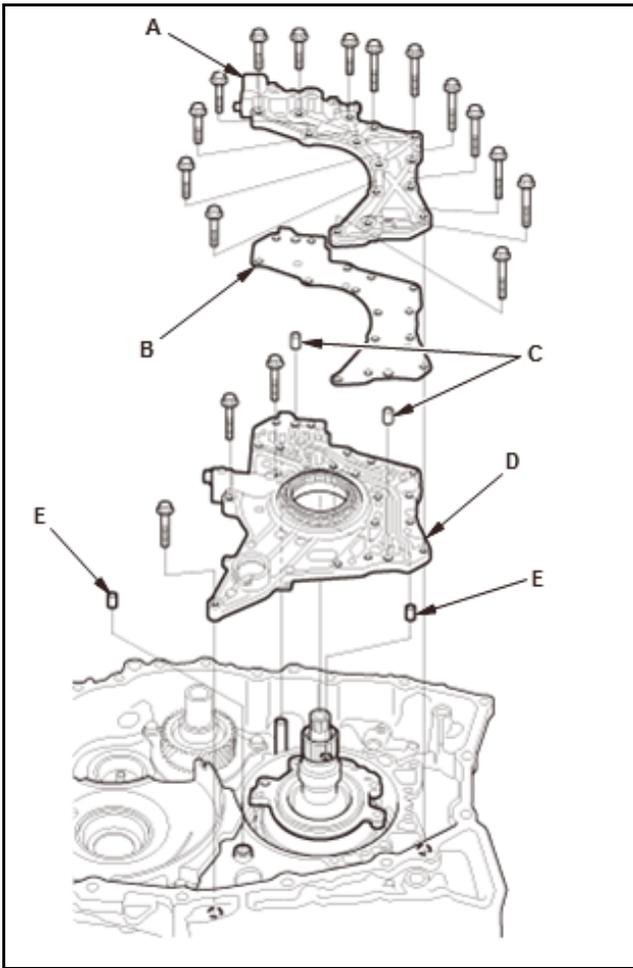
1. While expanding the snap ring (A) of the transmission fluid pump drive sprocket (B) using the snap ring pliers, remove the transmission fluid pump drive sprocket
2. Remove the transmission fluid pump drive sprocket and the transmission fluid pump drive chain (C).

14. Control Shaft - Remove



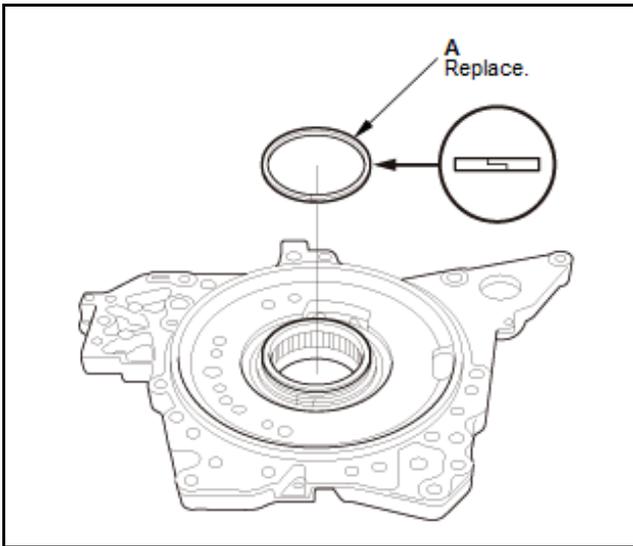
1. Remove the detent spring (A)
2. Pry down the lock tab (B) of the lock washer (C), then remove the lock washer
3. Remove the roller (D), then remove the control shaft (E)
4. Remove the detent lever (F).

15. Manual Valve Body and Stator Shaft Flange - Remove



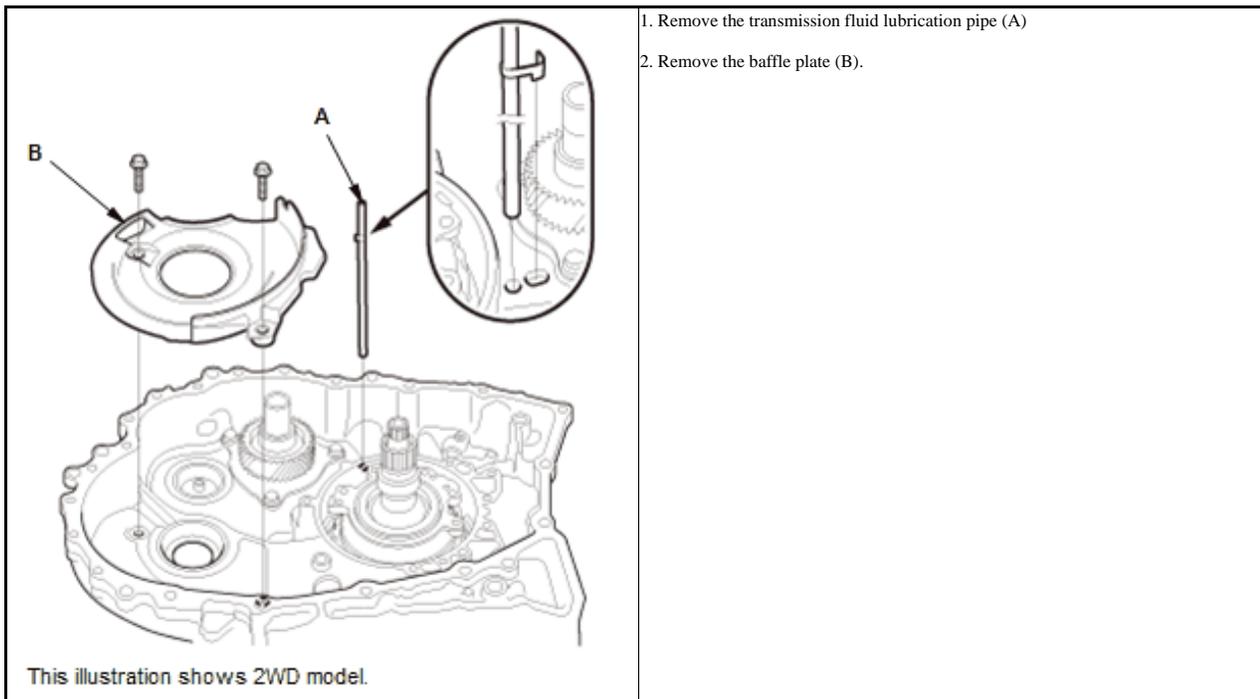
1. Remove the manual valve body (A) with the separator plate (B) and the dowel pins (C)
2. Remove the stator shaft flange (D) with the dowel pins (E).

16. Oil Pump Drive Sprocket Sealing Ring - Remove

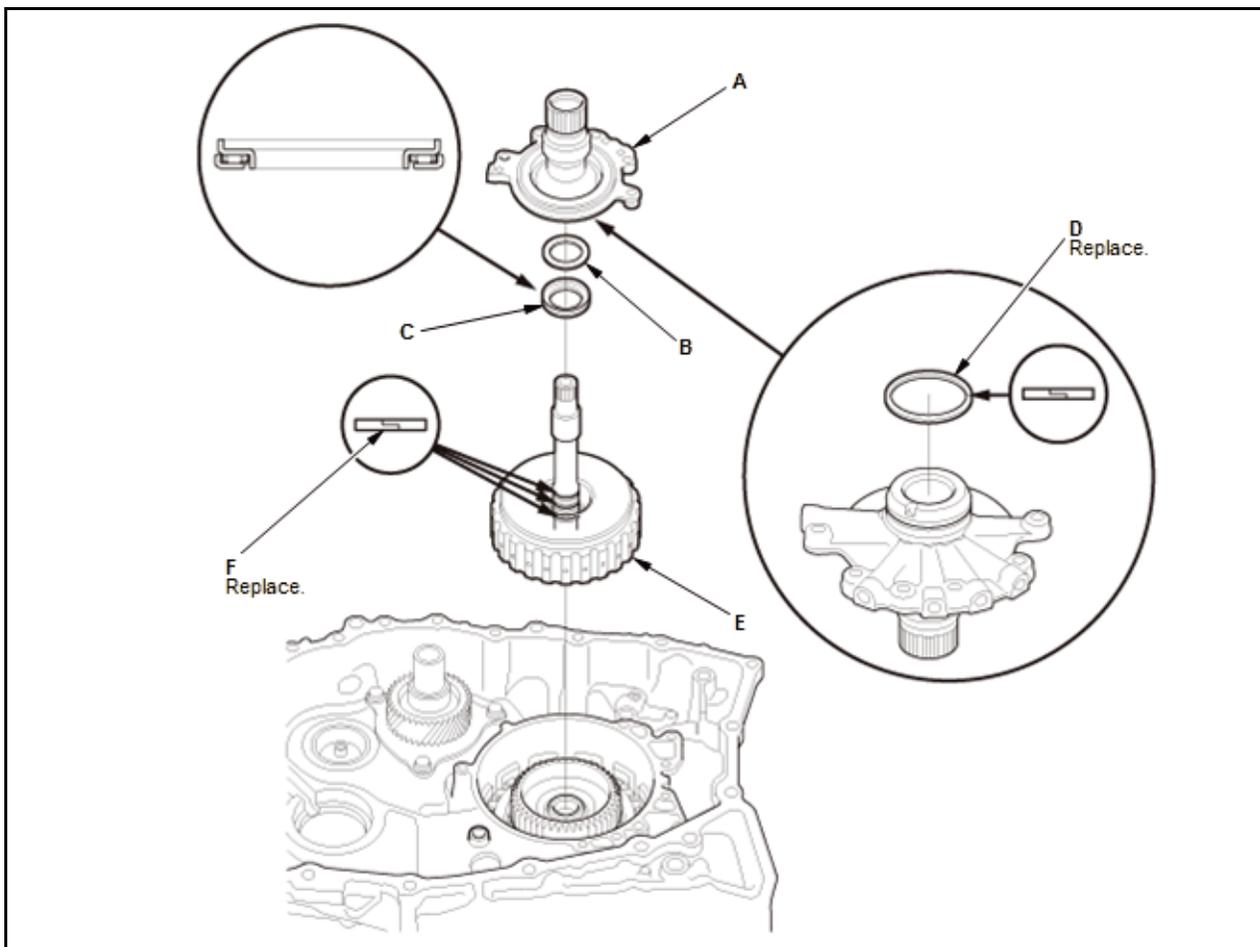


1. Remove the sealing ring (A).

17. Transmission Fluid Lubrication Pipe and Baffle Plate - Remove

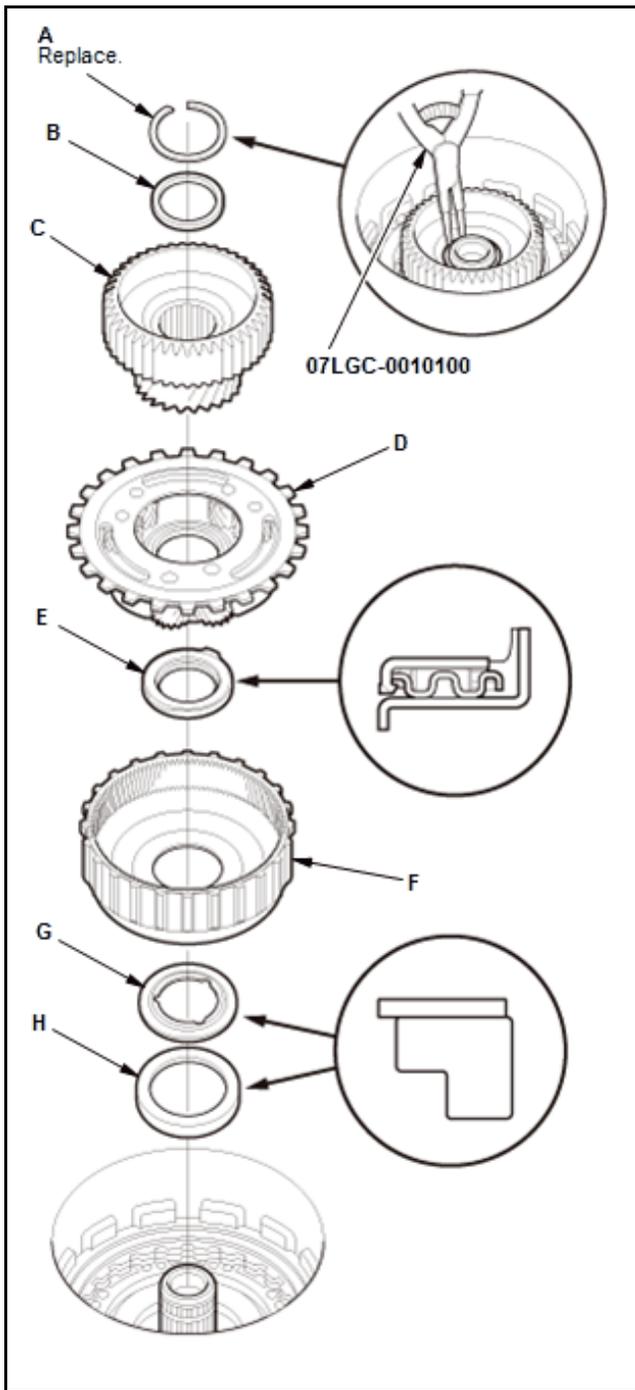


18. Stator Shaft and Input Shaft - Remove



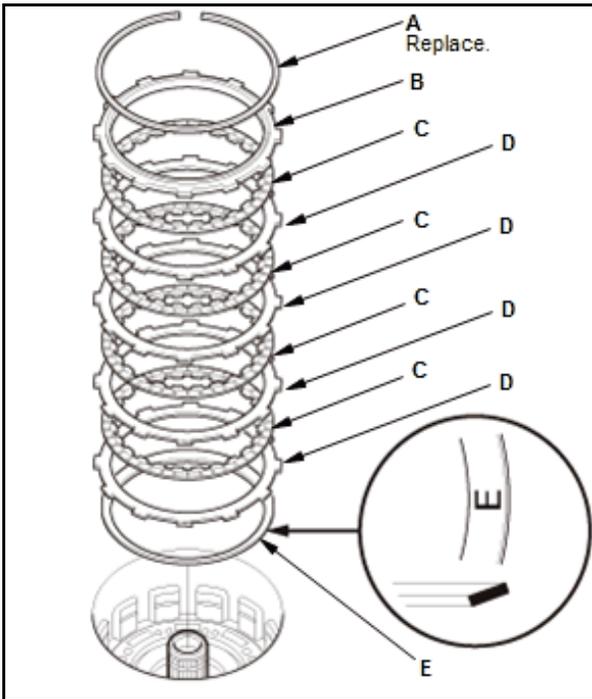
1. Remove the stator shaft (A), the 26 x 38.8 mm thrust shim (B), and the thrust needle bearing (C).
2. Remove the sealing ring (D)
3. Remove the input shaft (E)
4. Remove the sealing rings (F).

19. Sun Gear, Planetary Carrier, and Ring Gear - Remove



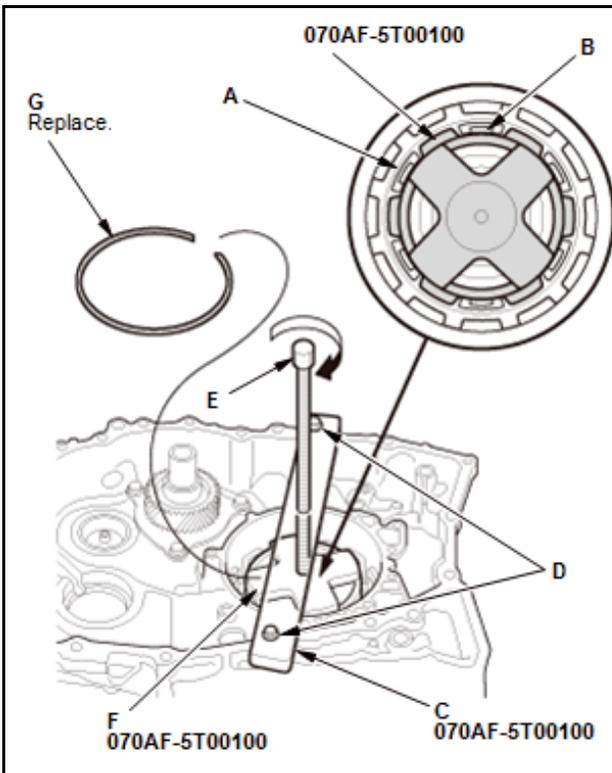
1. Remove the snap ring (A) using the snap ring pliers
2. Remove the 33 x 40 mm thrust shim (B) and the sun gear (C)
3. Remove the planetary carrier (D) and the thrust needle bearing (E)
4. Remove the ring gear (F), the thrust washer (G), and the collar (H).

20. Reverse Brake Disc and Plate - Remove

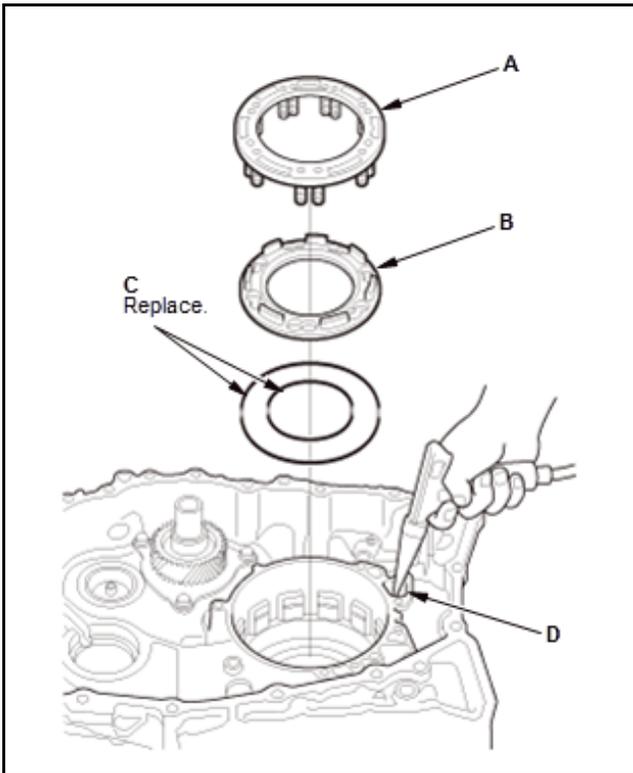


1. Remove the snap ring (A)
2. Remove the reverse brake end-plate (B)
3. Remove the reverse brake discs (C) and the reverse brake plates (D)
4. Remove the disc spring (E).

21. Reverse Brake Piston - Remove



1. Put the reverse brake spring compressor attachment on the spring retainer/return spring assembly (A).
- NOTE:** Be sure the attachment is set over the return springs, not on the reverse brake piston (B).
2. Install the reverse brake spring compressor plate (C) with facing the UP mark to the upside using bolts (D).
3. Make sure that the reverse brake spring compressor bolt (E) is properly installed on the dent in the surface of the reverse brake spring compressor attachment (F).
4. Compress the return springs using the reverse brake spring compressor until the snap ring securing the spring retainer/return spring can be removed.
5. Remove the snap ring (G), then remove the reverse brake spring compressor.



6. Remove the spring retainer/return spring (A)

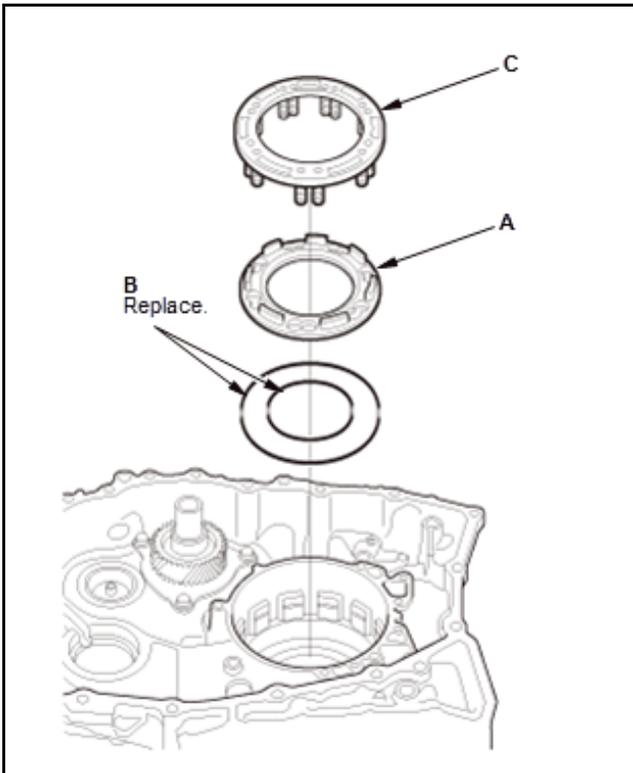
7. Remove the reverse brake piston (B) with the O-rings (C), while applying air pressure to the reverse brake pressure circuit hole (D).

Reassembly

NOTE:

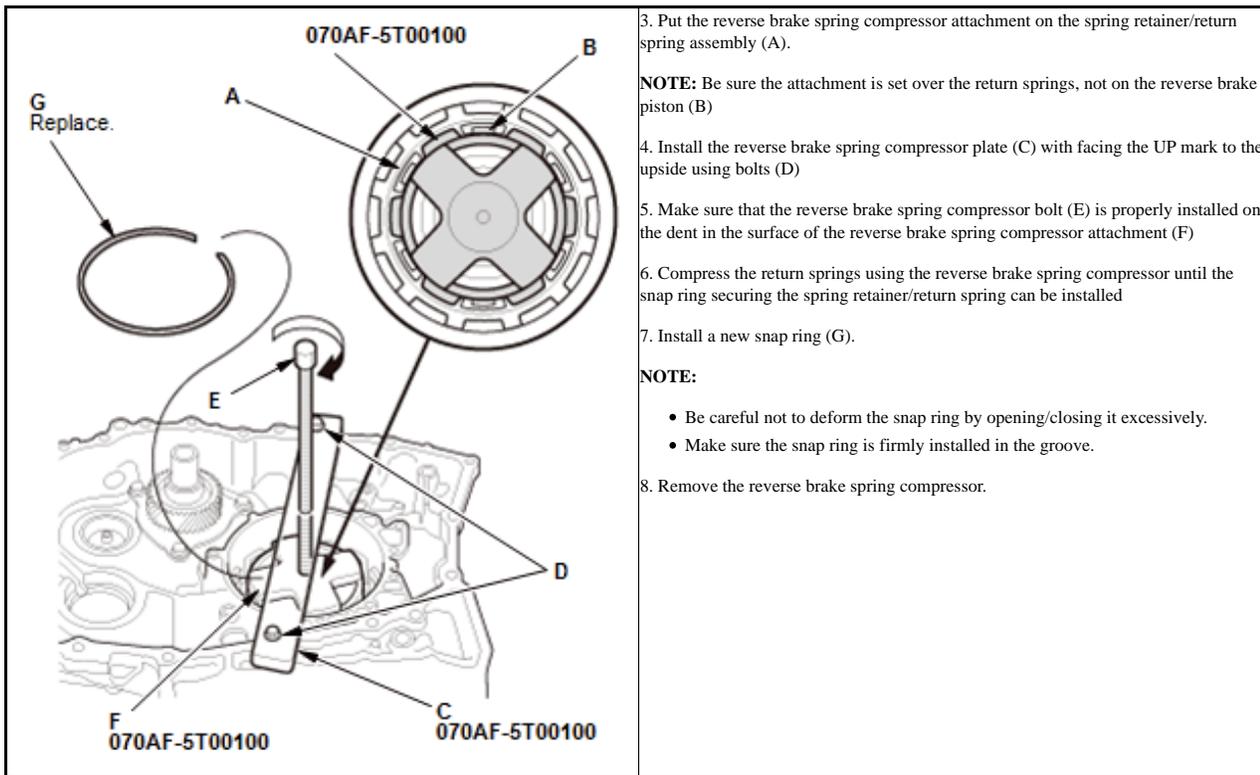
- Refer to the Exploded View as needed during this procedure.
- Keep all foreign particles out of the transmission.
- When you reassemble the transmission, apply a light coat of clean transmission fluid on all oil seals, O-rings, and bearings. Also soak the forward clutch assembly and the reverse brake discs, in clean transmission fluid for at least 30 minutes prior to installation.

1. Reverse Brake Piston - Install



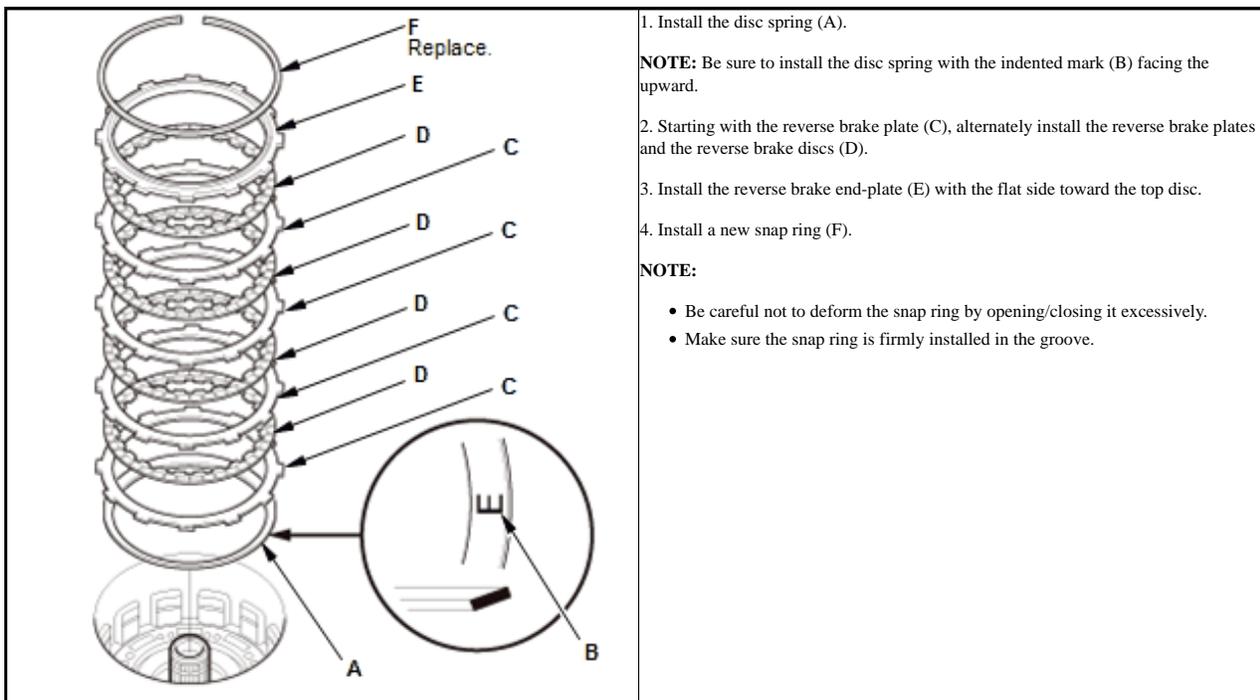
1. Install the reverse brake piston (A) with new O-rings (B)

2. Install the spring retainer/return spring (C).



3. Put the reverse brake spring compressor attachment on the spring retainer/return spring assembly (A).
- NOTE:** Be sure the attachment is set over the return springs, not on the reverse brake piston (B)
4. Install the reverse brake spring compressor plate (C) with facing the UP mark to the upside using bolts (D)
 5. Make sure that the reverse brake spring compressor bolt (E) is properly installed on the dent in the surface of the reverse brake spring compressor attachment (F)
 6. Compress the return springs using the reverse brake spring compressor until the snap ring securing the spring retainer/return spring can be installed
 7. Install a new snap ring (G).
- NOTE:**
- Be careful not to deform the snap ring by opening/closing it excessively.
 - Make sure the snap ring is firmly installed in the groove.
8. Remove the reverse brake spring compressor.

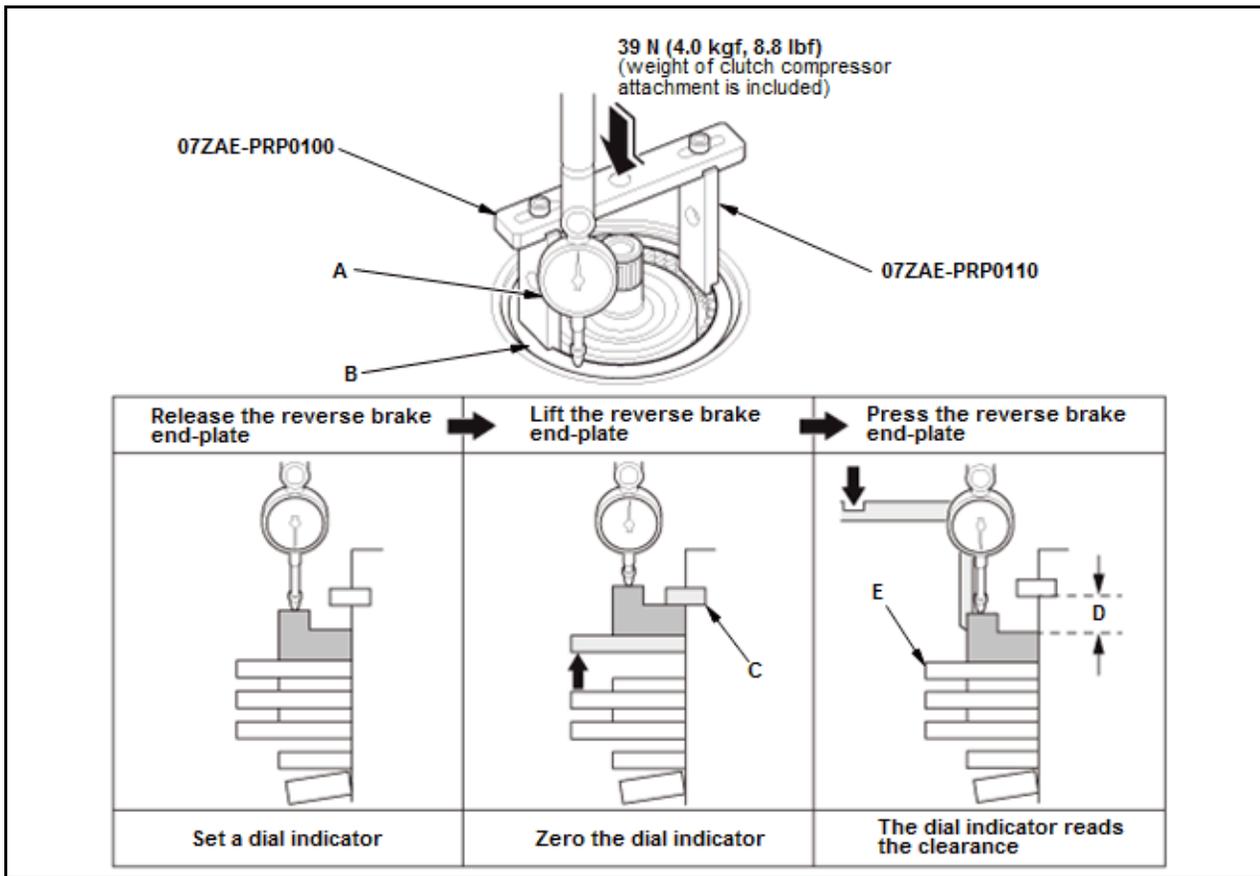
2. Reverse Brake Disc and Plate - Install



1. Install the disc spring (A).
- NOTE:** Be sure to install the disc spring with the indented mark (B) facing the upward.
2. Starting with the reverse brake plate (C), alternately install the reverse brake plates and the reverse brake discs (D).
 3. Install the reverse brake end-plate (E) with the flat side toward the top disc.
 4. Install a new snap ring (F).
- NOTE:**
- Be careful not to deform the snap ring by opening/closing it excessively.
 - Make sure the snap ring is firmly installed in the groove.

3. Reverse Brake End-Plate Thrust Clearance - Inspect

1. Set a dial indicator (A) on the reverse brake end-plate (B).



2. Zero the dial indicator with the reverse brake end-plate is lifted up to the snap ring (C)
3. Release the reverse brake end-plate
4. Put the clutch compressor attachment and the clutch compressor attachment 64 mm on the reverse brake end-plate
5. Press the clutch compressor attachment down with 39 N (4.0 kgf, 8.8 lbf) (the weight of the clutch compressor attachment is included) using a force gauge, and read the dial indicator
6. The dial indicator reads the clearance (D) between the reverse brake end-plate and the top disc (E). Take measurements in at least three places, and use the average as the actual clearance.

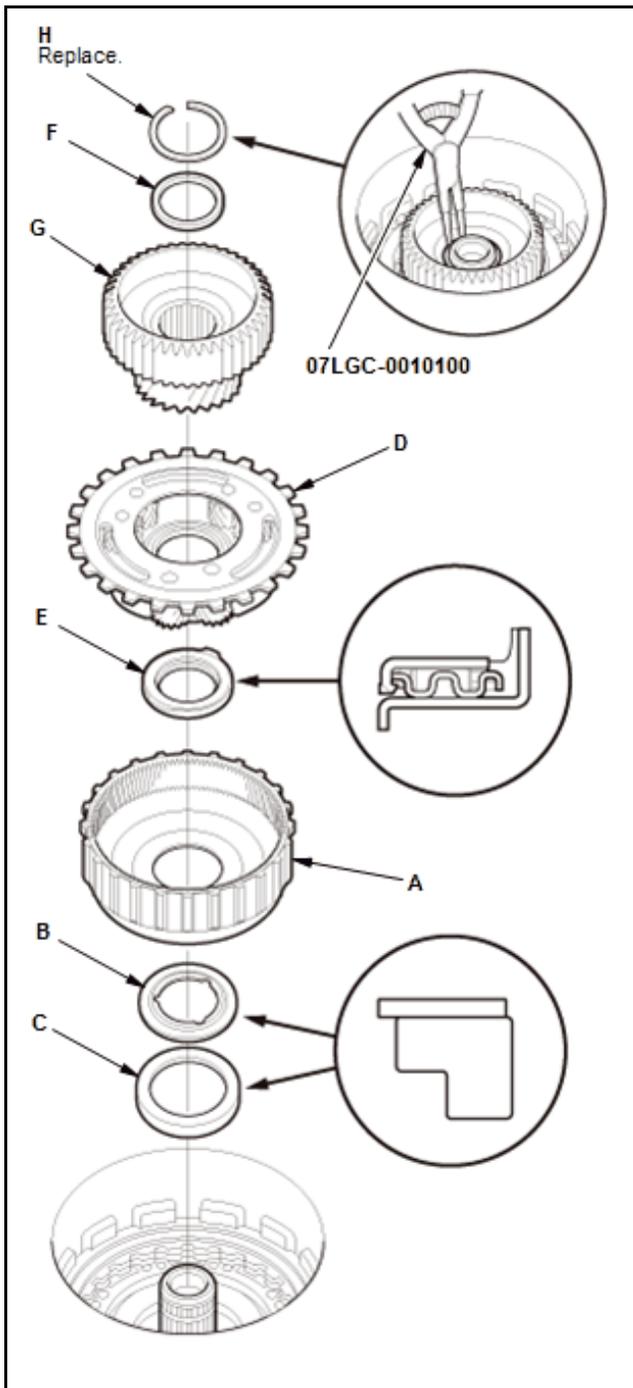
Standard:	1.0-1.2 mm (0.039-0.047 in)
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7. If the clearance is out of the standard, remove the reverse brake end-plate and select a suitable one.

No.	Thickness
1	3.6 mm (0.142 in)
2	3.7 mm (0.146 in)
3	3.8 mm (0.150 in)
4	3.9 mm (0.154 in)
5	4.0 mm (0.157 in)
6	4.1 mm (0.161 in)
7	4.2 mm (0.165 in)
8	4.3 mm (0.169 in)
9	4.4 mm (0.173 in)
10	4.5 mm (0.177 in)
11	4.6 mm (0.181 in)
12	4.7 mm (0.185 in)
13	4.8 mm (0.189 in)
14	4.9 mm (0.193 in)
15	5.0 mm (0.197 in)

8. Install a selected reverse brake end-plate, then recheck the clearance.

4. Sun Gear, Planetary Carrier, and Ring Gear - Install



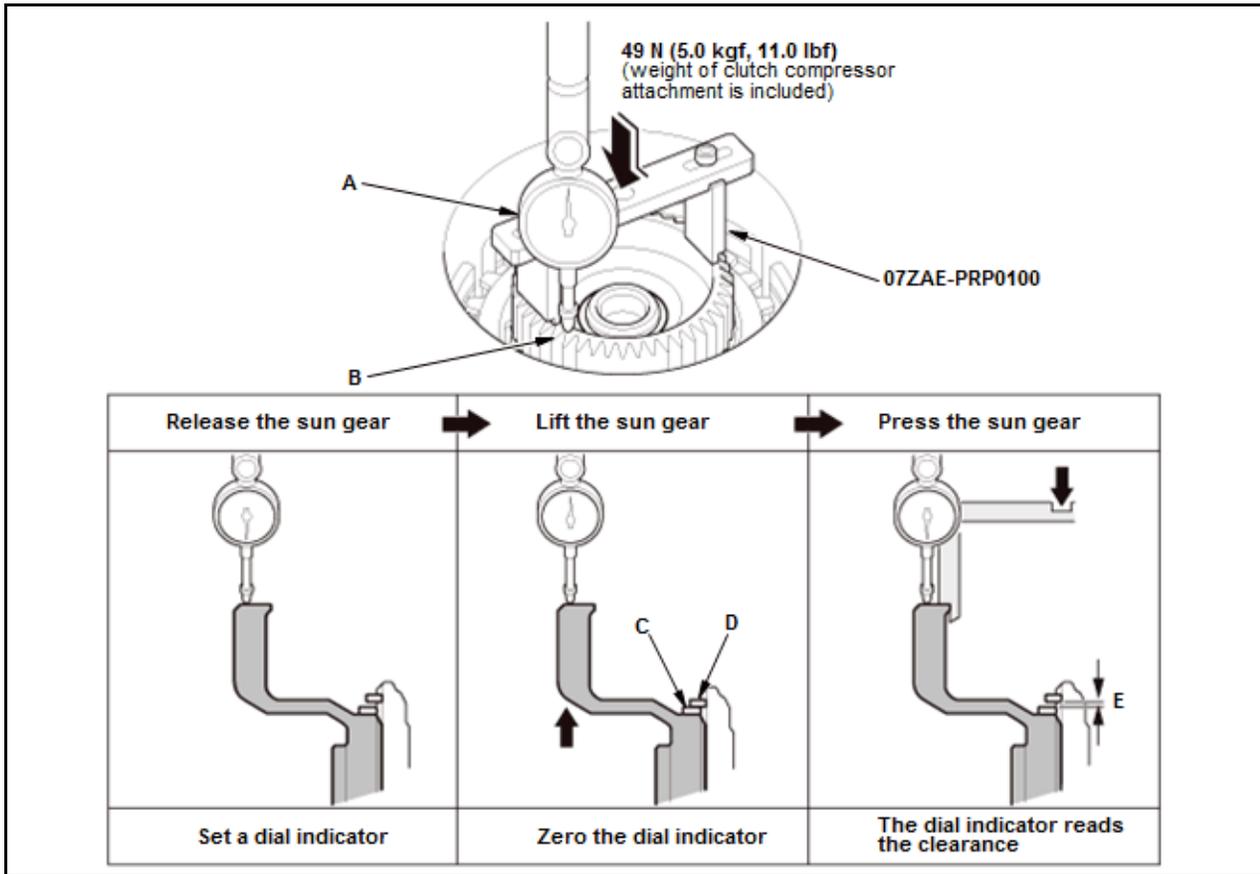
1. Install the ring gear (A), the thrust washer (B), and the collar (C) as shown
2. Install the planetary carrier (D) and the thrust needle bearing (E) as shown
3. Install the 33 x 40 mm thrust shim (F) and the sun gear (G)
4. Install a new snap ring (H) using the snap ring pliers.

NOTE:

- Be careful not to deform the snap ring by opening/closing it excessively.
- Make sure the snap ring is firmly installed in the groove.

5. Sun Gear Thrust Clearance - Inspect

1. Set a dial indicator (A) on the sun gear (B).



2. Zero the dial indicator with the sun gear is lifted up to the 33 x 40 mm thrust shim (C) contact the snap ring (D)
3. Release the sun gear
4. Put the clutch compressor attachment on the sun gear
5. Press the clutch compressor attachment down with 49 N (5.0 kgf, 11.0 lbf) (the weight of the clutch compressor attachment is included) using a force gauge, and read the dial indicator
6. The dial indicator reads the clearance (E) between the sun gear and the 33 x 40 mm thrust shim. Take measurements in at least three places, and use the average as the actual clearance.

Standard:	0.04-0.09 mm (0.0016-0.0035 in)
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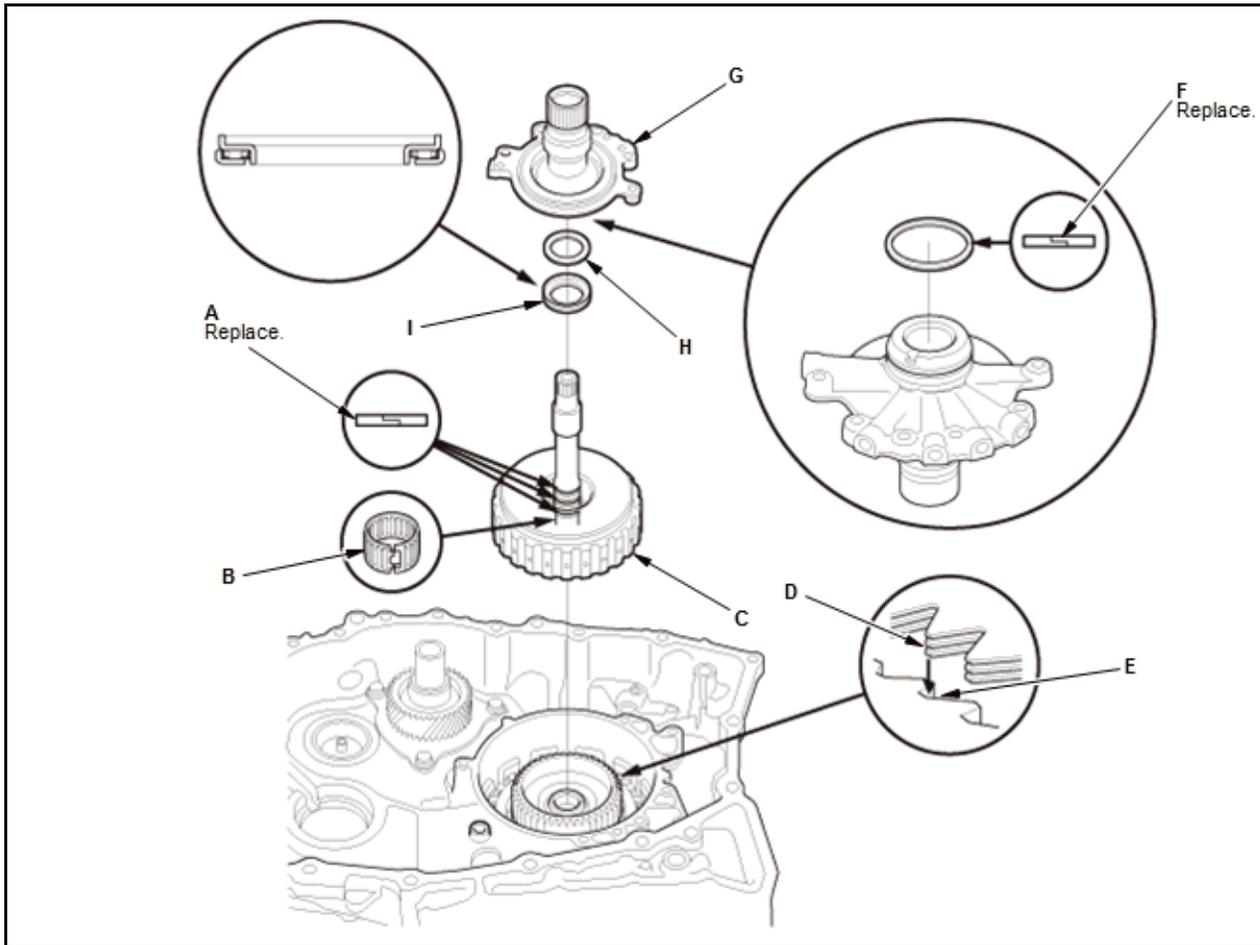
7. If the clearance is out of the standard, remove the 33 x 40 mm thrust shim and select a suitable one.

No.	Thickness
A	1.31 mm (0.0516 in)
B	1.34 mm (0.0528 in)
C	1.37 mm (0.0539 in)
D	1.40 mm (0.0551 in)
E	1.43 mm (0.0563 in)
F	1.46 mm (0.0575 in)
G	1.49 mm (0.0587 in)
H	1.52 mm (0.0598 in)
I	1.55 mm (0.0610 in)
J	1.58 mm (0.0622 in)
K	1.61 mm (0.0634 in)
L	1.64 mm (0.0646 in)
M	1.67 mm (0.0658 in)
N	1.70 mm (0.0669 in)
O	1.73 mm (0.0681 in)
P	1.76 mm (0.0693 in)
Q	1.79 mm (0.0705 in)
R	1.82 mm (0.0717 in)
S	1.85 mm (0.0728 in)

8. Install a selected 33 x 40 mm thrust shim, then recheck the clearance.

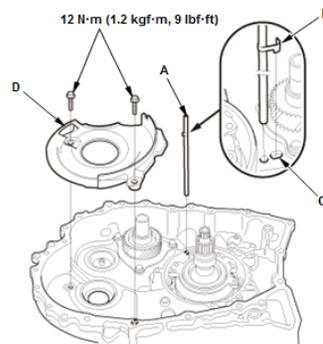
6. Stator Shaft and Input Shaft - Install

1. Install new sealing rings (A).



2. Check the needle bearing (B). If the needle bearing is worn or damaged, replace it
3. Install the input shaft (C) by aligning the clutch discs (D) with the splines (E)
4. Install a new sealing ring (F)
5. Install the stator shaft (G) with the 26 x 38.8 mm thrust shim (H) and the thrust needle bearing (I) as shown.

7. Transmission Fluid Lubrication Pipe and Baffle Plate - Install

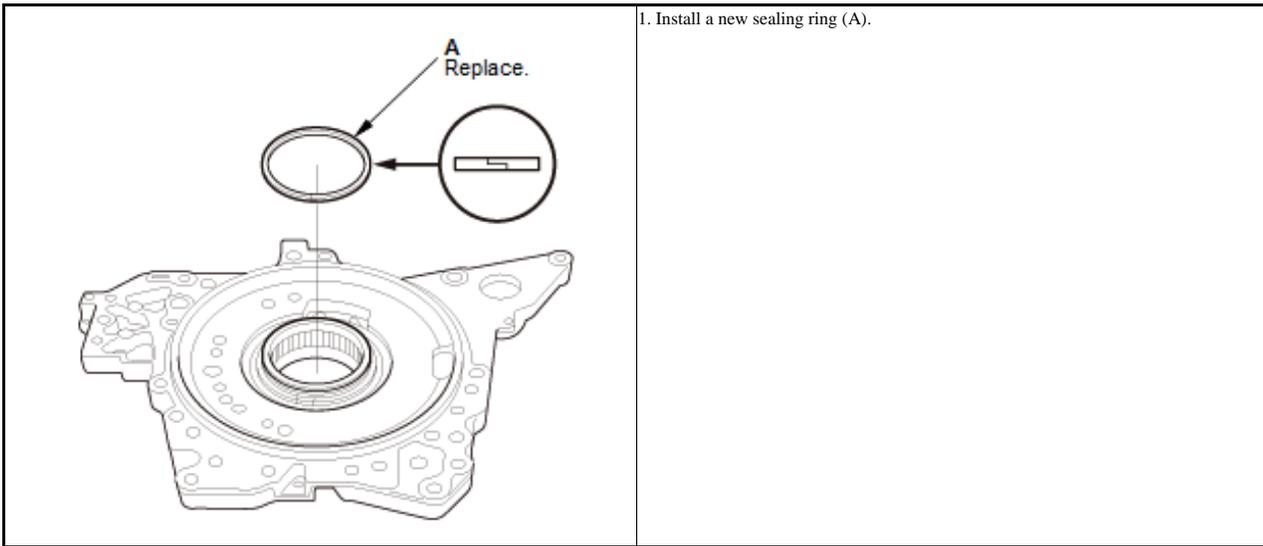


This illustration shows 2WD model.

Fig. 40: Baffle Plate With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>1. Install the transmission fluid lubrication pipe (A) by aligning the guide tab (B) with the guide hole (C)</p> <p>2. Install the baffle plate (D).</p>	
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8. Oil Pump Drive Sprocket Sealing Ring - Install



9. Manual Valve Body and Stator Shaft Flange - Install

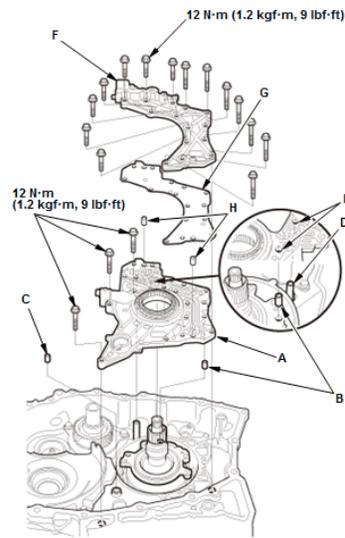


Fig. 41: Manual Valve Body and Stator Shaft Flange With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>Â</p>	<p>1. Install the stator shaft flange (A) with the dowel pins (B) (C) by aligning the transmission fluid lubrication pipe (D) and the dowel pins (B) with the mounting holes (E)</p> <p>2. Install the manual valve body (F) with the separator plate (G) and the dowel pins (H).</p>
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10. Control Shaft - Install

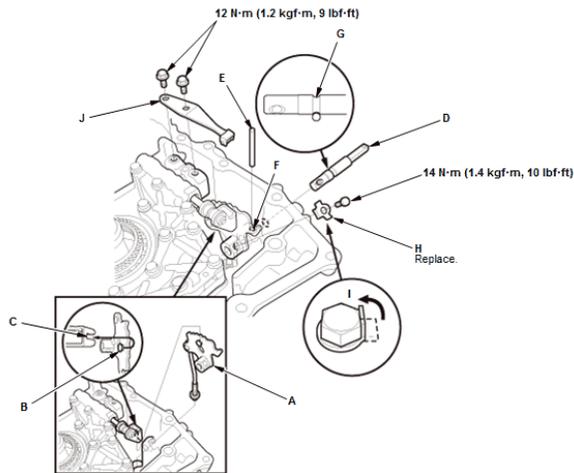


Fig. 42: Control Shaft With Torque Specifications

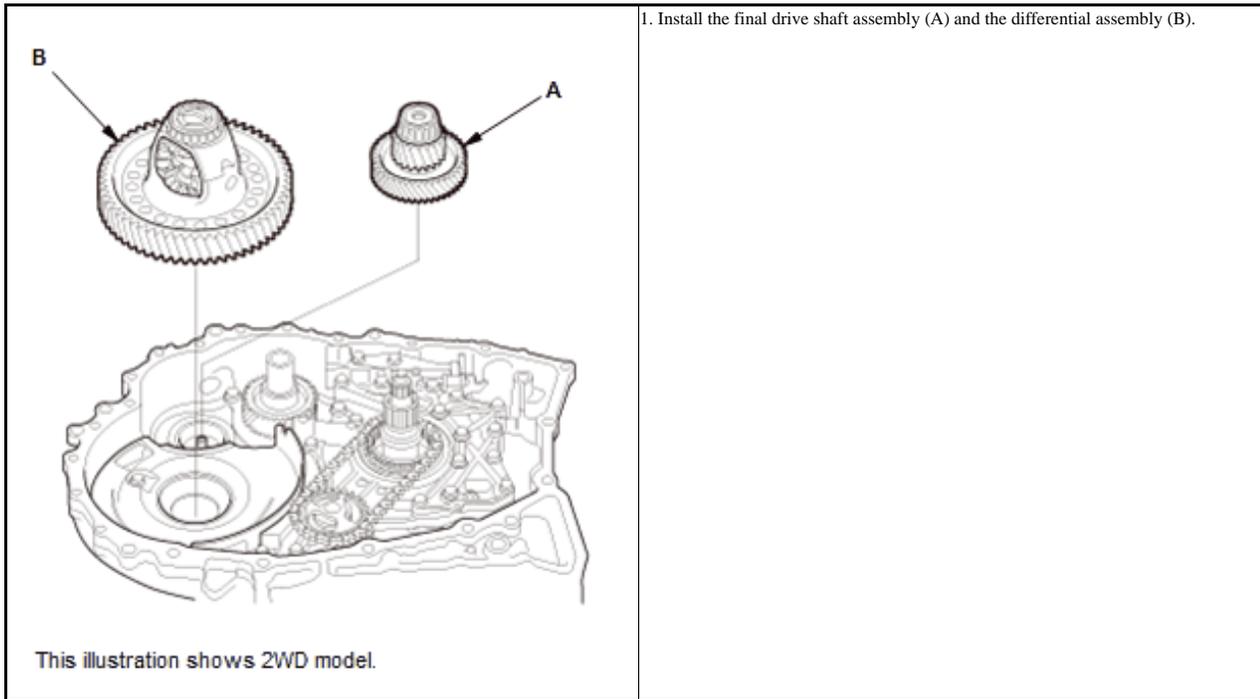
Courtesy of HONDA, U.S.A., INC.

1. Install the detent lever (A) by aligning the guide tab (B) with the groove (C).
2. Install the control shaft (D)
3. Install the roller (E) by aligning the mounting hole (F) with the groove (G)
4. Secure the control shaft with a new lock washer (H), then pry up the lock tab (I) of the lock washer against the bolt head
5. Install the detent spring (J).

11. Transmission Fluid Pump Drive Sprocket and Transmission Fluid Pump Drive Chain - Install

	<ol style="list-style-type: none"> 1. Install the transmission fluid pump drive sprocket (A) and the transmission fluid pump drive chain (B) 2. While expanding a new snap ring (C) of the transmission fluid pump drive sprocket using the snap ring pliers, install the transmission fluid pump drive sprocket. <p>NOTE:</p> <ul style="list-style-type: none"> • Be careful not to deform the snap ring by opening/closing it excessively. • Make sure the snap ring is firmly installed in the groove.
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12. Final Drive Shaft and Differential Assembly - Install



13. Torque Converter Housing - Install

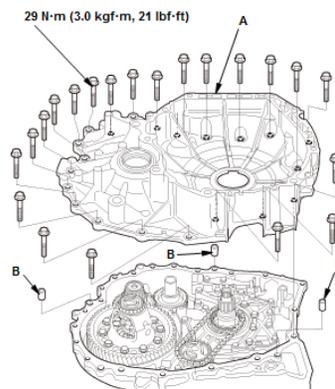
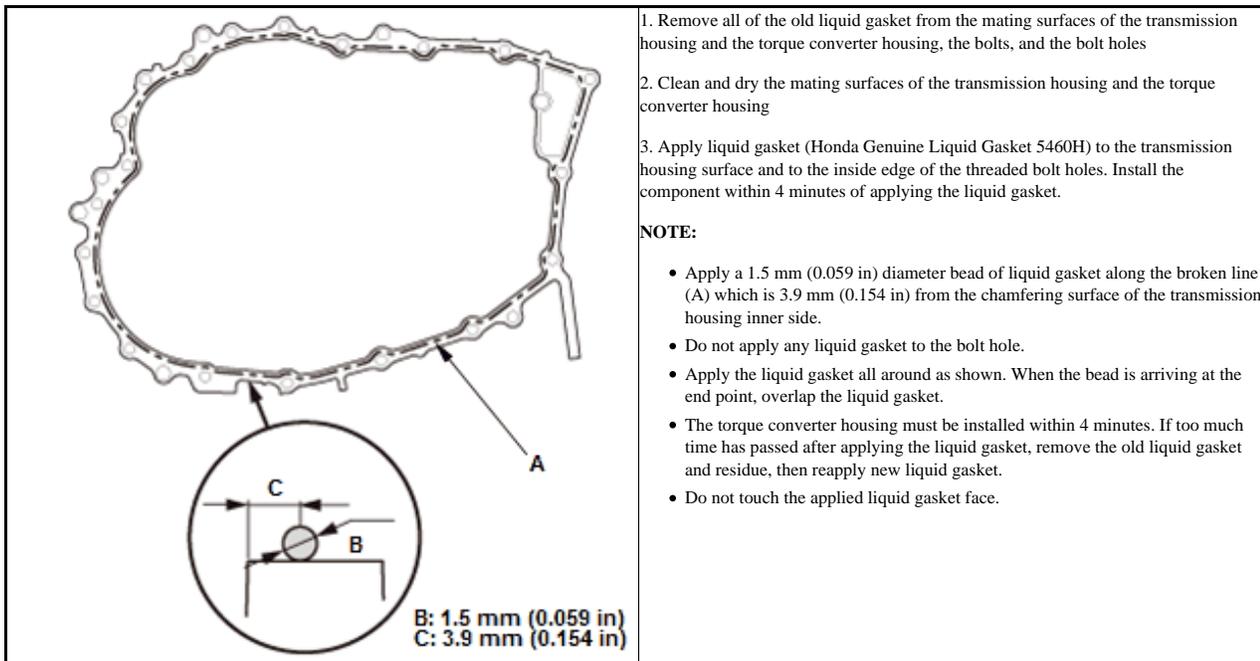


Fig. 43: Torque Converter Housing With Torque Specifications (2WD)

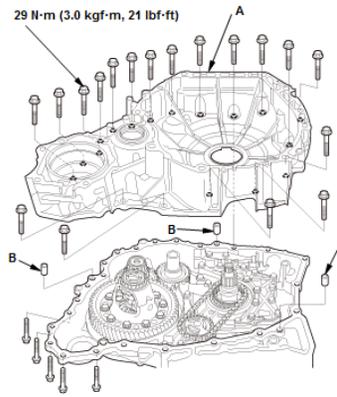


Fig. 44: Torque Converter Housing With Torque Specifications (AWD)

Courtesy of HONDA, U.S.A., INC.

<p>Â</p>	<p>4. Install the torque converter housing (A) with the dowel pins (B), and tighten the bolts in a crisscross pattern in at least two steps.</p> <p>NOTE:</p> <ul style="list-style-type: none"> • Wait for at least 1 hour before filling the transmission with transmission fluid. • Do not run the engine for at least 3 hours after installing the torque converter housing.
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14. Parking Brake Pawl - Install

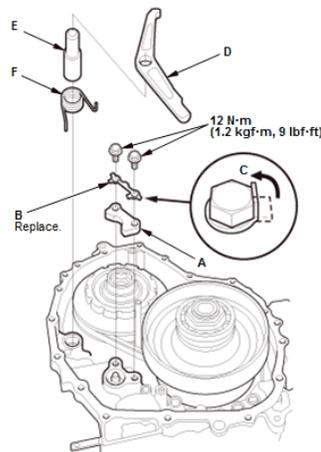


Fig. 45: Parking Brake Pawl With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

<p>Â</p>	<ol style="list-style-type: none"> 1. Install the parking brake rod holder (A) and a new lock washer (B) 2. Pry up the lock tab (C) of the lock washer against the bolt head 3. Install the parking brake pawl (D) with the parking shaft (E) and the parking pawl spring (F).
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15. Transmission Fluid Pipe and Transmission Fluid Cooler Pipe - Install

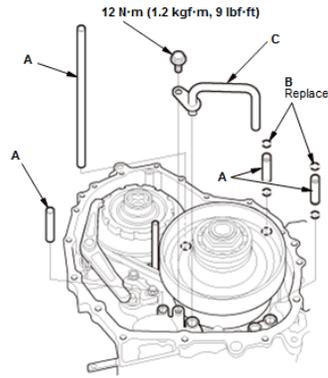


Fig. 46: Transmission Fluid Pipe and Transmission Fluid Cooler Pipe With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>1. Install the transmission fluid pipes (A) with new O-rings (B)</p> <p>2. Install the transmission fluid cooler pipe (C).</p>

16. End Cover - Install

	<p>1. Install new sealing rings (A).</p>
--	--

<p style="text-align: center;">B: 1.5 mm (0.059 in) C: 3.9 mm (0.154 in)</p>	<p>2. Remove all of the old liquid gasket from the mating surfaces of the transmission housing and the end cover, the bolts, and the bolt holes</p> <p>3. Clean and dry the mating surfaces of the transmission housing and the end cover</p> <p>4. Apply liquid gasket (Honda Genuine Liquid Gasket 5460H) to the transmission housing surface and to the inside edge of the threaded bolt holes. Install the component within 4 minutes of applying the liquid gasket.</p> <p>NOTE:</p> <ul style="list-style-type: none"> • Apply a 1.5 mm (0.059 in) diameter bead of liquid gasket along the broken line (A) which is 3.9 mm (0.154 in) from the chamfering surface of the end cover inner side. • If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket. • The end cover must be installed within 4 minutes. If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket. • Do not touch the applied liquid gasket face.
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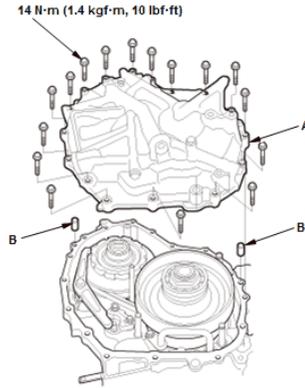


Fig. 47: End Cover With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>Ā</p>	<p>5. Install the end cover (A) with the dowel pins (B), and tighten the bolts in a crisscross pattern in at least two steps.</p> <p>NOTE:</p> <ul style="list-style-type: none"> • Wait for at least 1 hour before filling the transmission with transmission fluid. • Do not run the engine for at least 3 hours after installing the end cover.
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17. Transmission Fluid Pump - Install

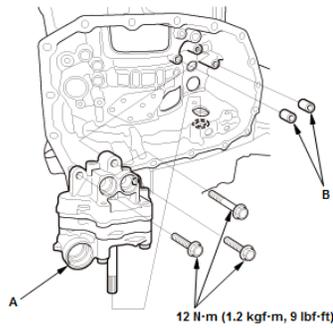


Fig. 48: Transmission Fluid Pump With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>Ā</p>	<p>1. Install the transmission fluid pump (A) with the dowel pins (B).</p>
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18. Solenoid Wire Harness - Install

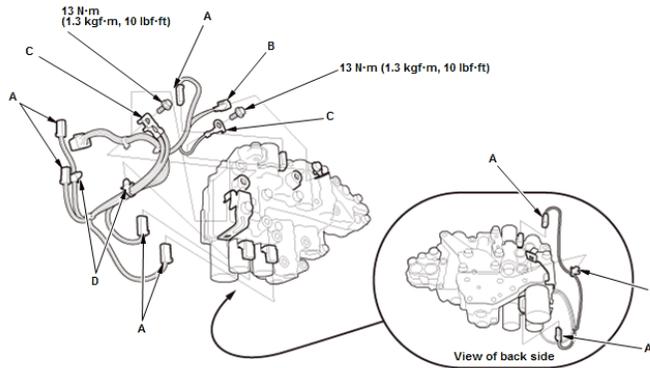
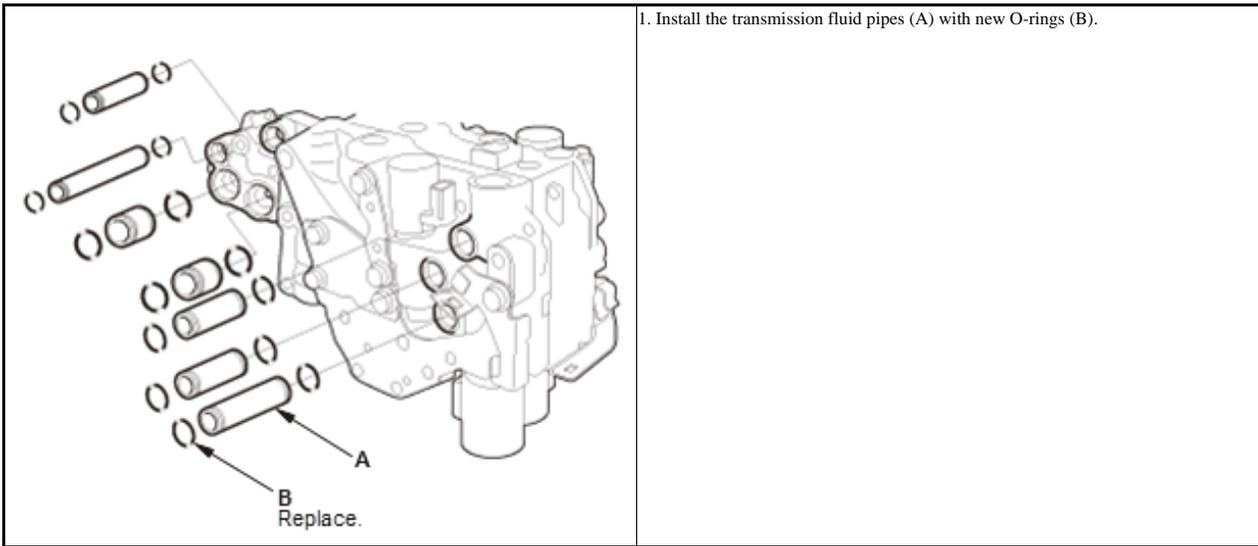


Fig. 49: Solenoid Wire Harness With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

1. Connect the connectors (A).
2. Install the transmission fluid temperature sensor (B)
3. Install the ground terminals (C) and the harness clamps (D).

19. Valve Body Assembly - Install



2. Install the solenoid wire harness subconnector (A) with a new O-ring (B).

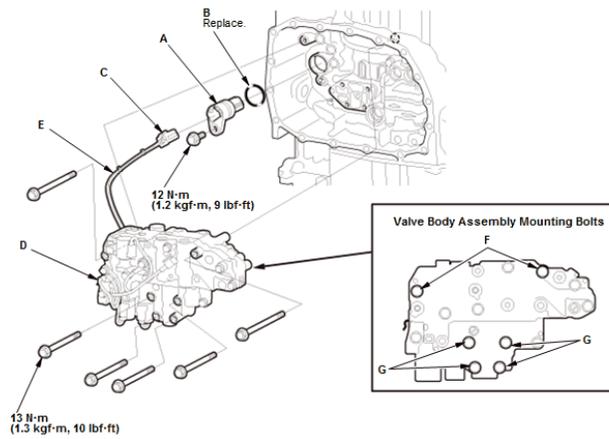


Fig. 50: Valve Body Assembly With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

3. Connect the connector (C)

4. Install the valve body (D).

NOTE: Do not damage the solenoid wire harness (E) while installing the valve body assembly.

Length of Bolt

F	90 mm (3.54 in)
G	65 mm (2.56 in)

20. Transmission Fluid Pan and Transmission Fluid Strainer - Install

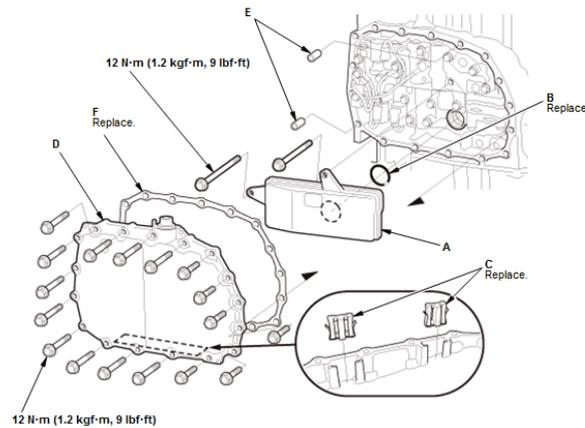


Fig. 51: Transmission Fluid Pan and Transmission Fluid Strainer With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

1. Install the transmission fluid strainer (A) with a new O-ring (B).

NOTE: Do not damage the solenoid wire harness while installing the transmission fluid strainer.

2. Install new magnets (C)

3. Install the transmission fluid pan (D) with the dowel pins (E) and a new gasket (F), and tighten the bolts in a crisscross pattern in at least two steps.

NOTE: Do not damage the solenoid wire harness while installing the transmission fluid pan.

21. Sensor - Install

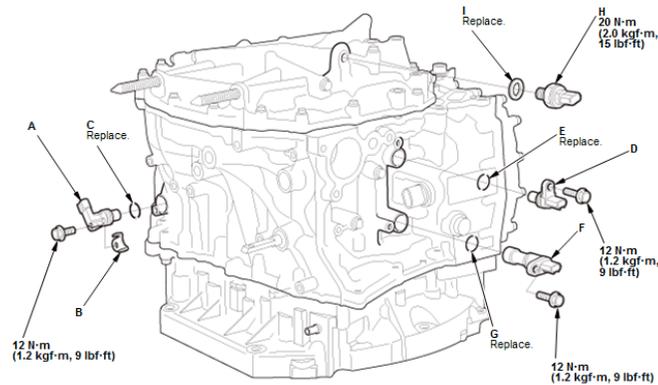


Fig. 52: Sensor With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

1. Install the CVT speed sensor (A) with the sensor washer (B) and a new O-ring (C).
2. Install the CVT drive pulley speed sensor (D) with a new O-ring (E)
3. Install the torque converter turbine speed sensor (F) with a new O-ring (G)
4. Install the CVT driven pulley pressure sensor (H) with a new sealing washer (I).

NOTE: Be careful not to damage the plastic part.

22. Transmission Range Switch - Install

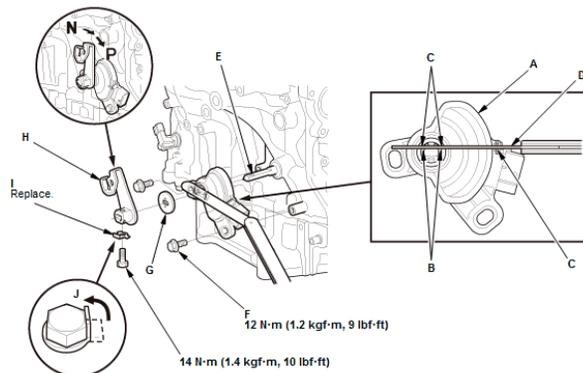


Fig. 53: Transmission Range Switch With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

1. Set the transmission range switch (A) to the N position. Align the cutouts (B) on the rotary-frame with the N positioning cutouts (C) on the transmission range switch, then put a 2.0 mm (0.079 in) feeler gauge (D) in the cutouts to hold the transmission range switch in the N position.

NOTE: Be sure to use a 2.0 mm (0.079 in) feeler gauge or equivalent to hold the transmission range switch in the N position.

2. Install the transmission range switch gently on the control shaft (E) while holding it in the N position with the 2.0 mm (0.079 in) feeler gauge
3. Tighten the bolts (F) on the transmission range switch while you continue holding the N position
4. Remove the feeler gauge
5. Install the control shaft cover (G)
6. Install the control lever (H) with a new lock washer (I)
7. Pry up the lock tab (J) of the lock washer against the bolt head
8. Turn the control lever to the P position.

23. Transfer Assembly - Install (With AWD)

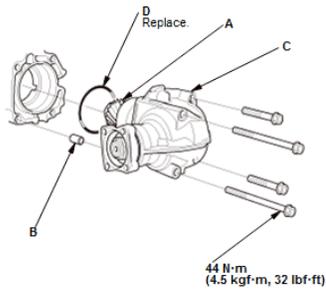


Fig. 54: Transfer Assembly With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

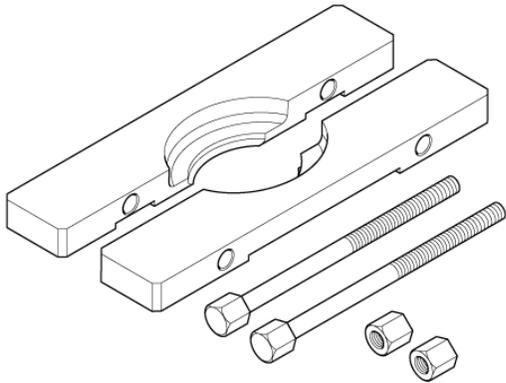
A	<ol style="list-style-type: none"> 1. Apply a light coat of clean transmission fluid to the transfer mount and transfer driven gear (A) 2. Install the dowel pin (B) 3. Install the transfer (C) with a new O-ring (D).
---	--

FINAL DRIVE SHAFT DISASSEMBLY AND REASSEMBLY (CVT)

Special Tools Required

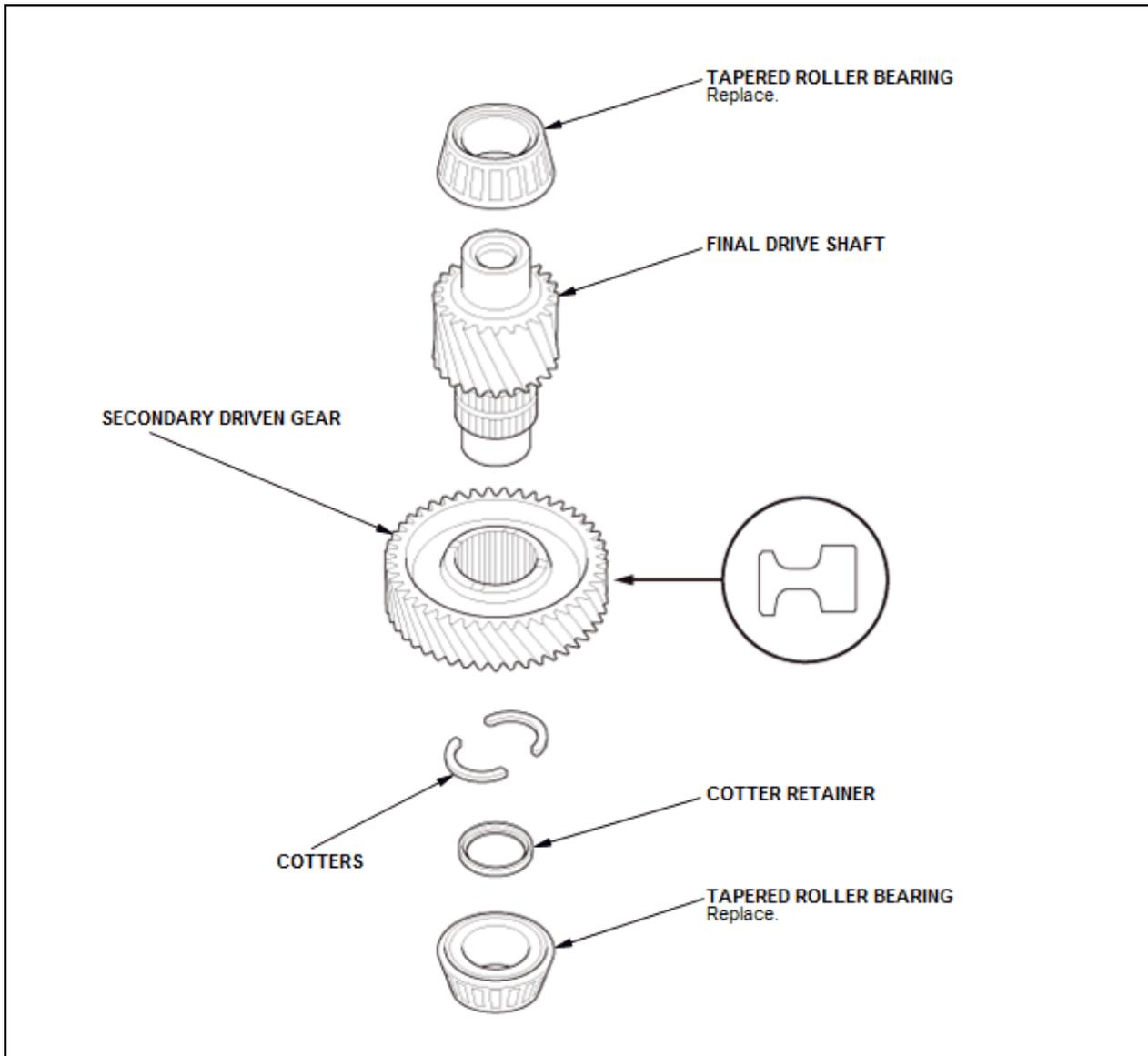
Image	Description/Tool Number
	Driver Handle, 15 x 135L 07749-0010000
	Attachment, 45 mm 07947-6890300

cardiagn.com

Image	Description/Tool Number
	Bearing Separator 07KAF-PS30200

Exploded View

1. Final Drive Shaft - Exploded View

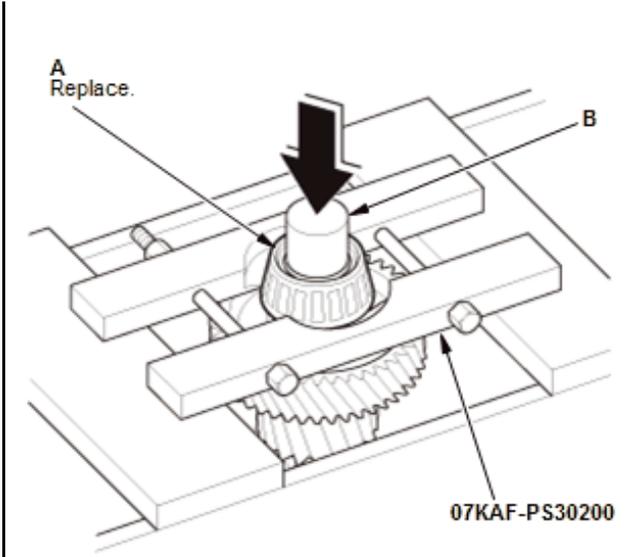


Disassembly

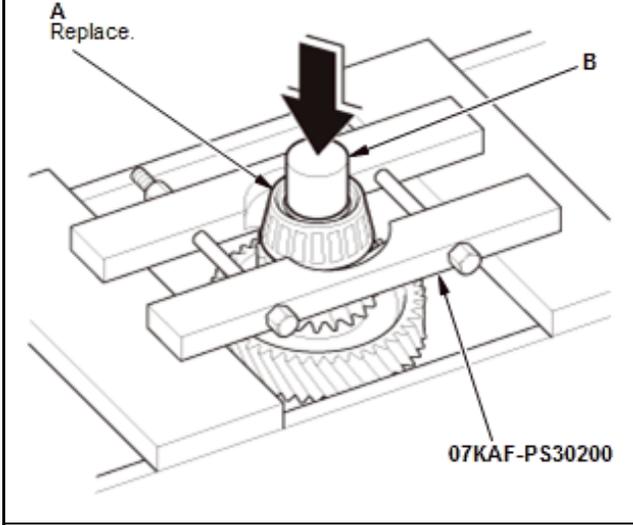
NOTE: The tapered roller bearing and the tapered roller bearing outer race should be replaced as a set.

1. Final Drive Shaft Tapered Roller Bearing - Remove

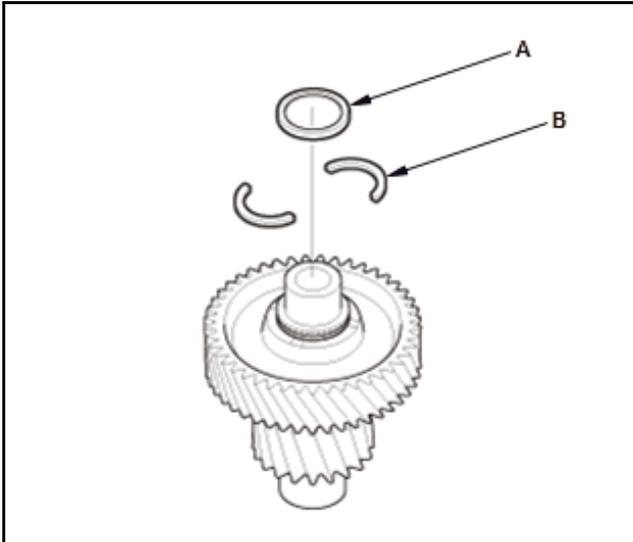
Transmission housing side	1. Remove the tapered roller bearings (A) using the bearing separator and a press (B).
----------------------------------	--



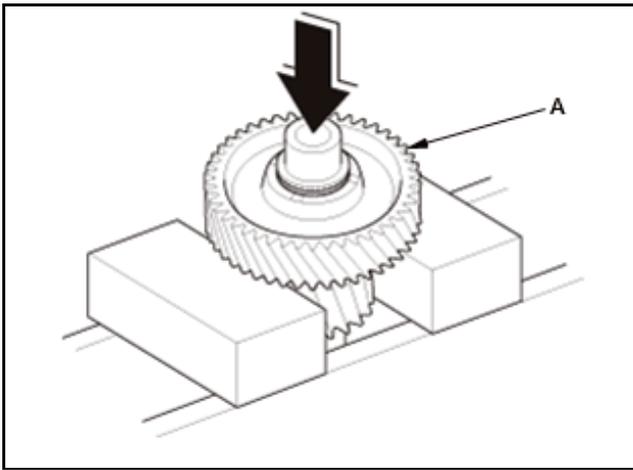
Torque converter housing side



2. Secondary Driven Gear - Remove



1. Remove the cotter retainer (A) and the cotten (B).



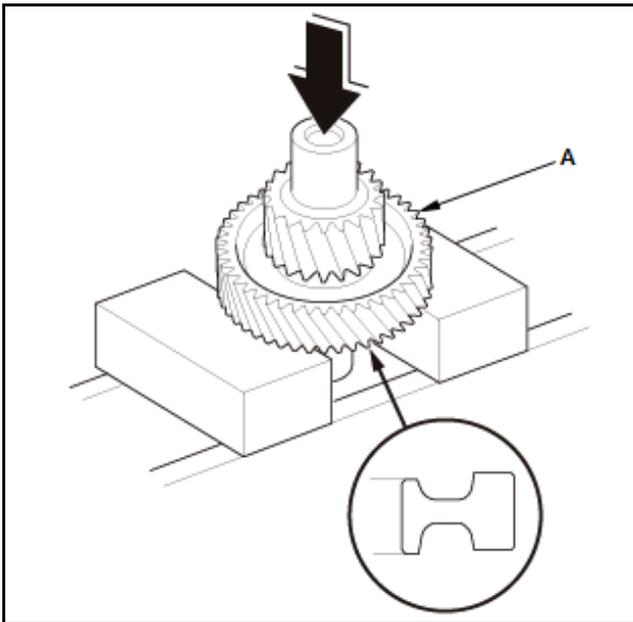
2. Remove the secondary driven gear (A) using a press.

Reassembly

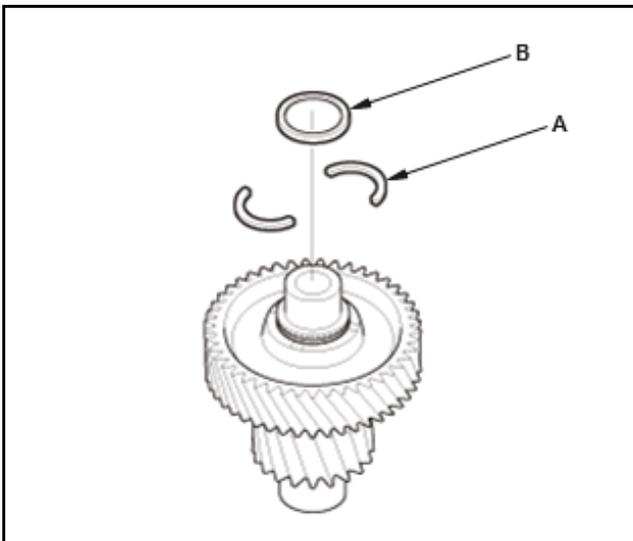
NOTE:

- The tapered roller bearing and the tapered roller bearing outer race should be replaced as a set.
- **Adjust the tapered roller bearing preload** after replacing the tapered roller bearing and the tapered roller bearing outer race.
- Apply a light coat of clean transmission fluid on all parts before installation.

1. Secondary Driven Gear - Install

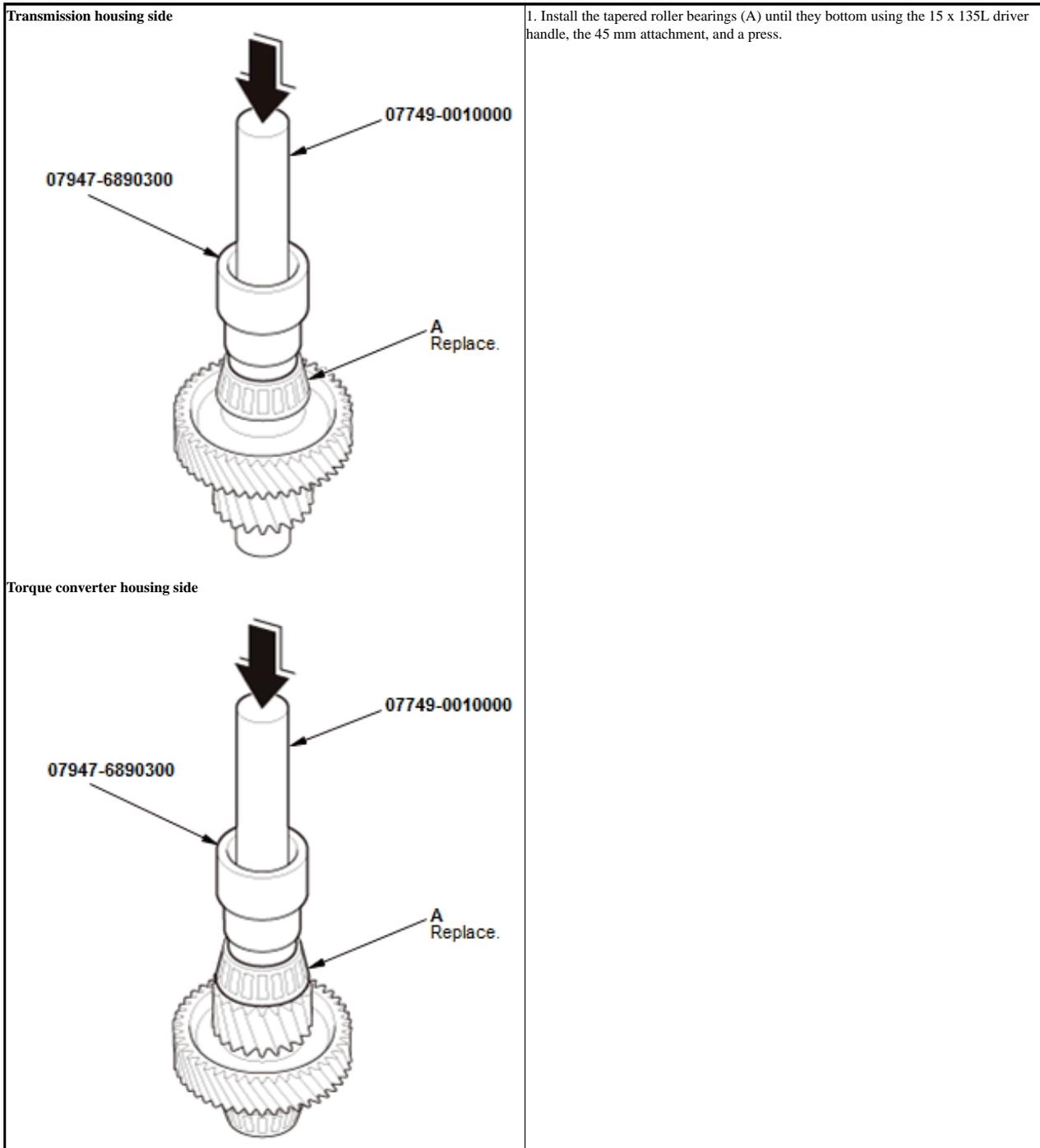


1. Install the secondary driven gear (A) until it bottoms using a press as shown.



2. Install the cotters (A) and the cotter retainer (B).

2. Final Drive Shaft Tapered Roller Bearing - Install



SHIFT LEVER DISASSEMBLY AND REASSEMBLY (CVT)

Exploded View

1. Shift Lever Assembly - Exploded View

NOTE: Do not wipe off the special grease applied to the area of the shift lever marked with an asterisk (*).

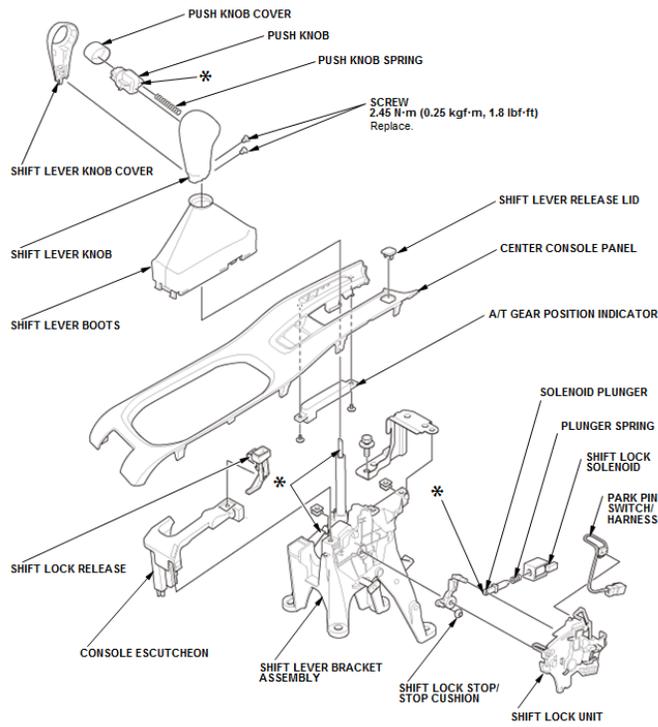


Fig. 55: Exploded View Of Shift Lever Assembly With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

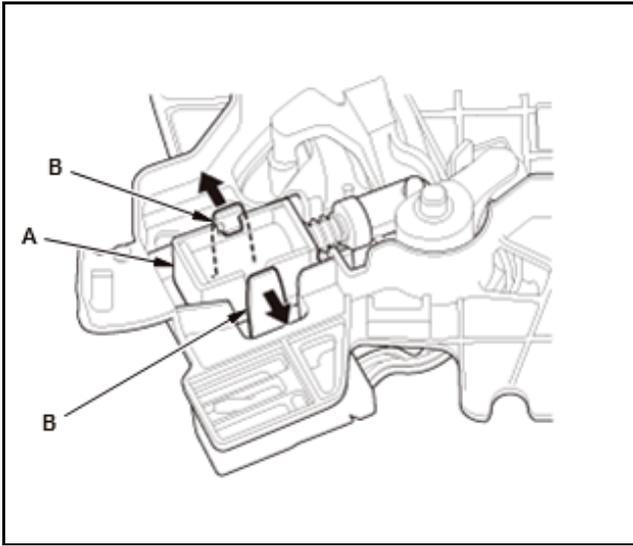
Disassembly & Reassembly

SRS components are located in this area. Review the SRS component locations - Refer to: [SRS Component Location Index \(KA/KC\)](#), or [SRS Component Location Index \(KA/KC\)](#) and the [precautions and procedures](#) before doing repair or service.

1. **Shift Lever Assembly - Remove**
2. Shift Lock Unit - Remove

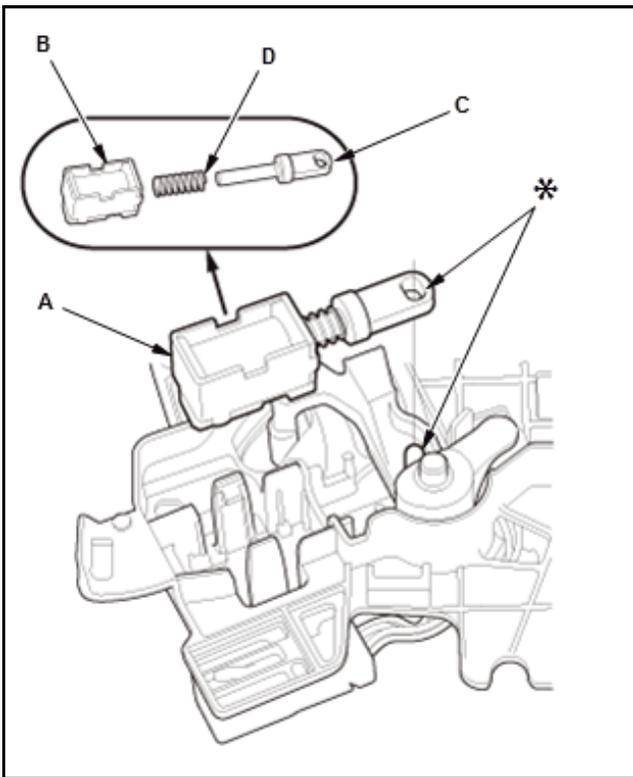
	<ol style="list-style-type: none"> 1. Remove the shift lock release (A) 2. Remove the console escutcheon (B) 3. Release the lock tab (C) and turn the pivot pin (D) counterclockwise using a hex wrench (E) as shown, and pull it 4. Remove the shift lock unit (F) while releasing the lock tabs (G).
--	--

3. Shift Lock Solenoid - Remove



NOTE: Do not wipe off the special grease applied to the area of the shift lever marked with an asterisk (*).

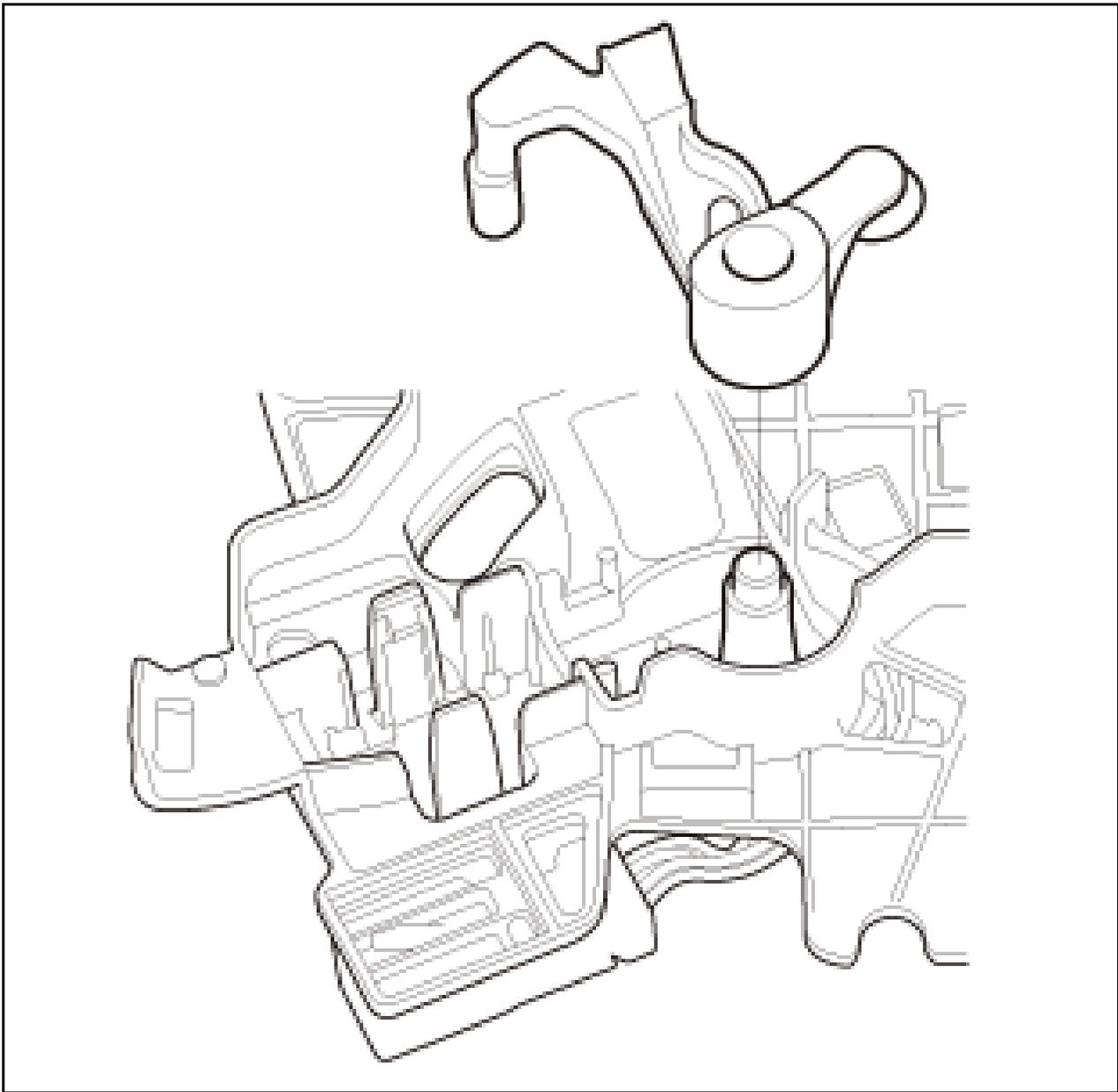
1. Pull the shift lock solenoid (A) out by expanding the lock tabs (B).



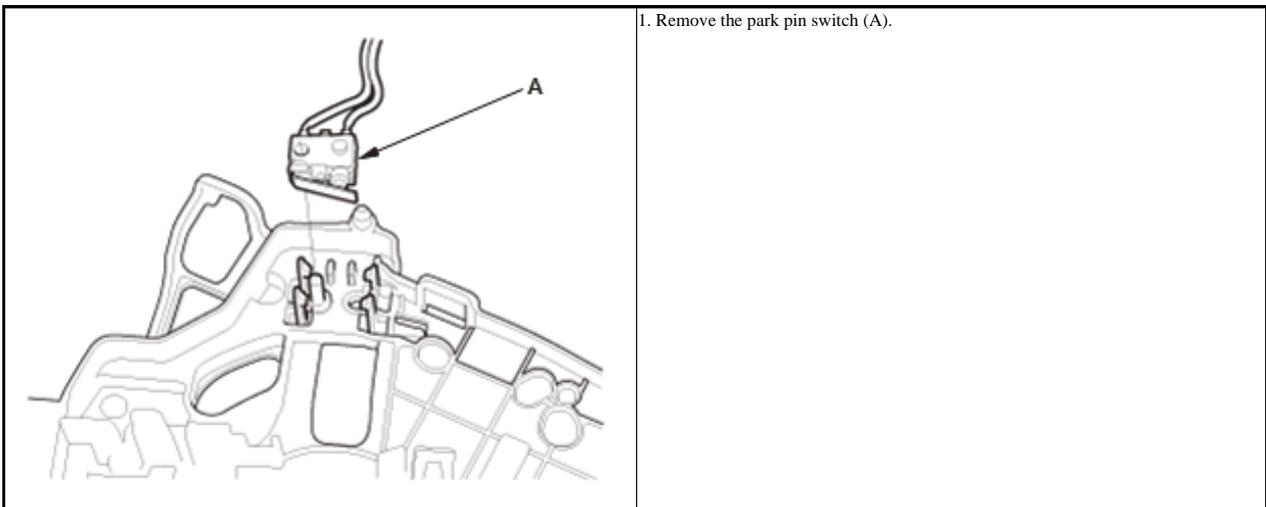
2. Remove the shift lock solenoid (A).

NOTE: The shift lock solenoid consists of the solenoid (B), the solenoid plunger (C), and the plunger spring (D).

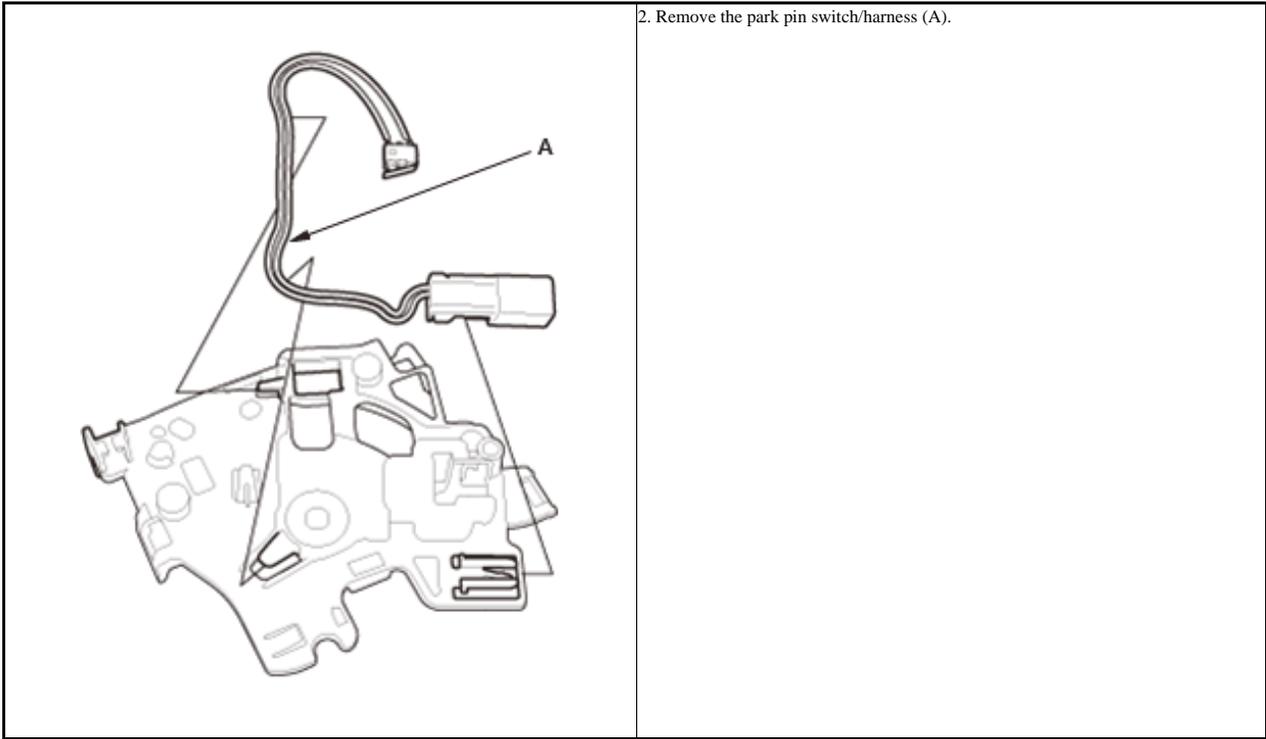
4. Shift Lock Stop/Stop Cushion - Remove



5. Park Pin Switch/Harness - Remove



1. Remove the park pin switch (A).



2. Remove the park pin switch/harness (A).

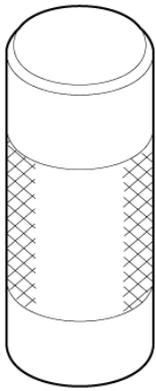
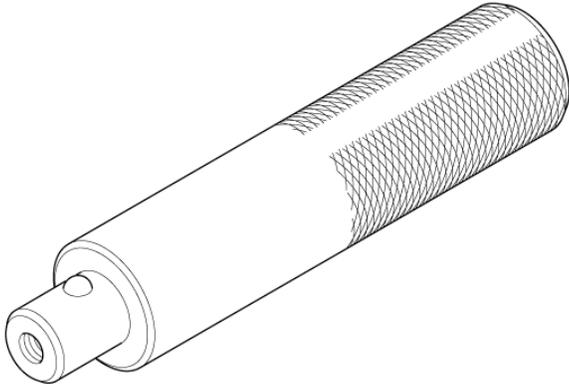
6. All Removed Parts - Install

A	1. Install the parts in the reverse order of removal.
---	---

TRANSFER ASSEMBLY DISASSEMBLY AND REASSEMBLY (CVT)

Special Tools Required

Image	Description/Tool Number
<p>The diagram shows a cylindrical tool with a central hole and a flange-like base, used for driving oil seals.</p>	<p>Oil Seal Driver Attachment, 58 mm 07JAD-PH80101</p>
<p>The diagram shows a complex, curved metal part with a central hole and several mounting points, used as a companion holder.</p>	<p>Holder, Companion 07PAB-0020000</p>

Image	Description/Tool Number
	Driver, 32.5 mm 070AD-SAA0100
	Driver Handle, 15 x 135L 07749-0010000

Exploded View

1. Transfer Assembly - Exploded View

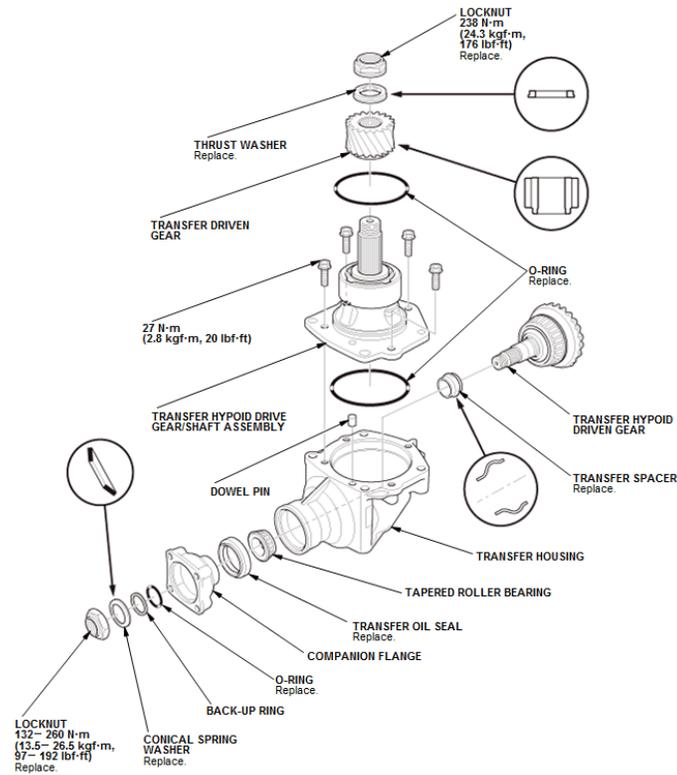
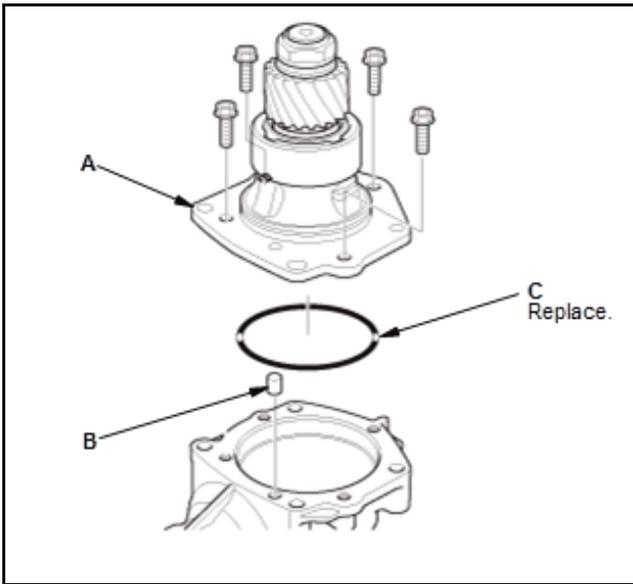


Fig. 56: Exploded View Of Transfer Assembly With Torque Specifications

Courtesy of HONDA, U.S.A., INC.

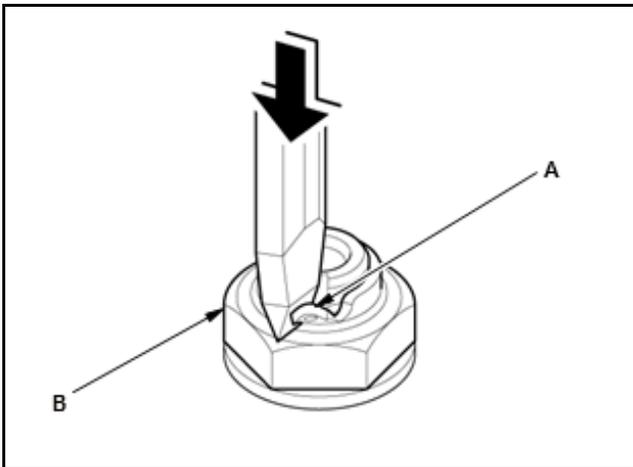
Disassembly

1. Transfer Hypoid Drive Gear/Shaft Assembly - Remove

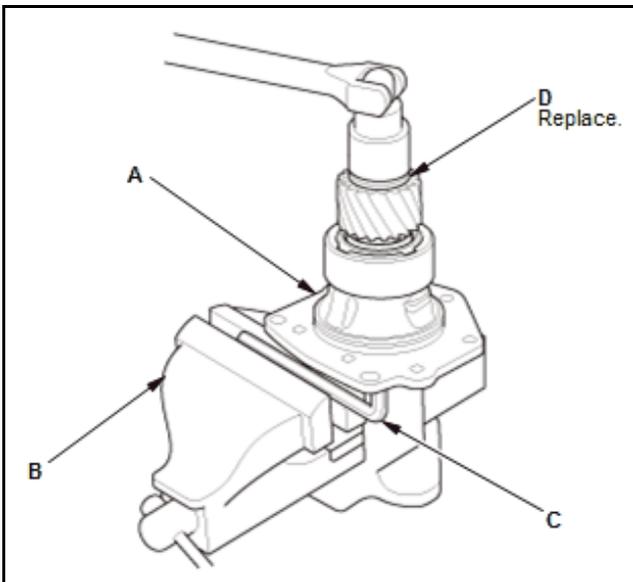


1. Remove the transfer hypoid drive shaft assembly (A), dowel pin (B) and the O-ring (C).

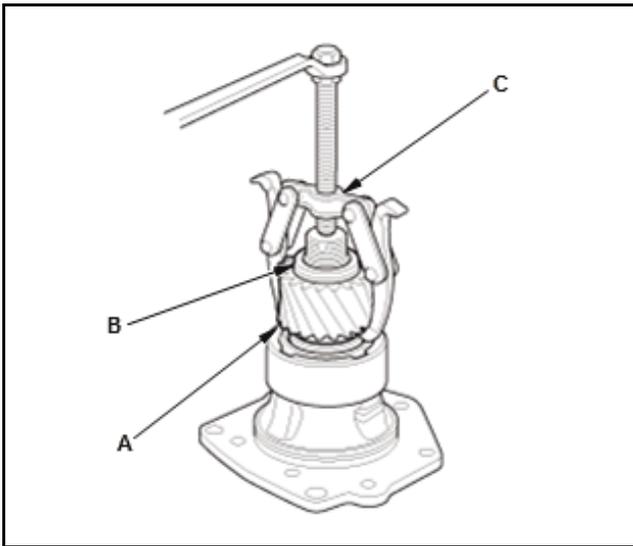
2. Transfer Driven Gear - Remove



1. Pry up the stake (A) on the locknut (B).
NOTE: Make sure the tab completely clears the groove to prevent damaging the shaft.

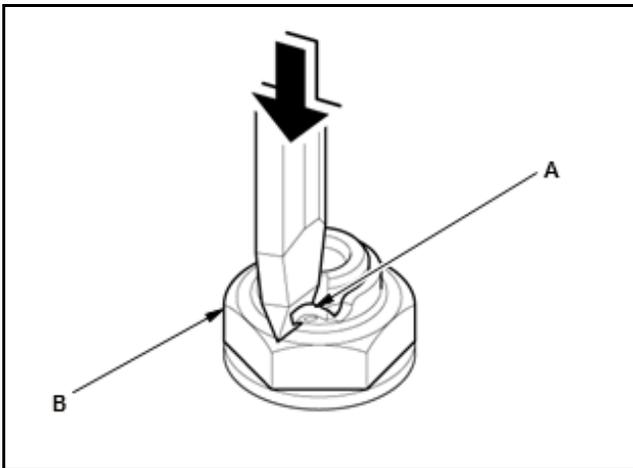


2. Secure the transfer hypoid drive gear/shaft assembly (A) in a bench vise (B) with hex wrench (C)
 3. Remove the locknut (D).

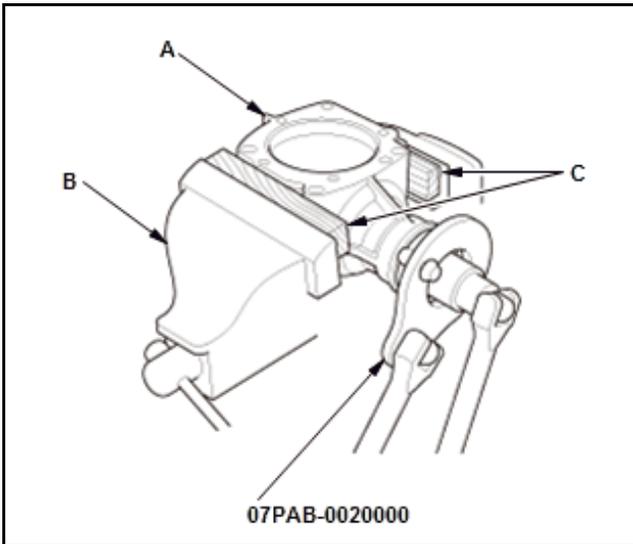


4. Remove the transfer driven gear (A) and the thrust washer (B) using a puller (C).

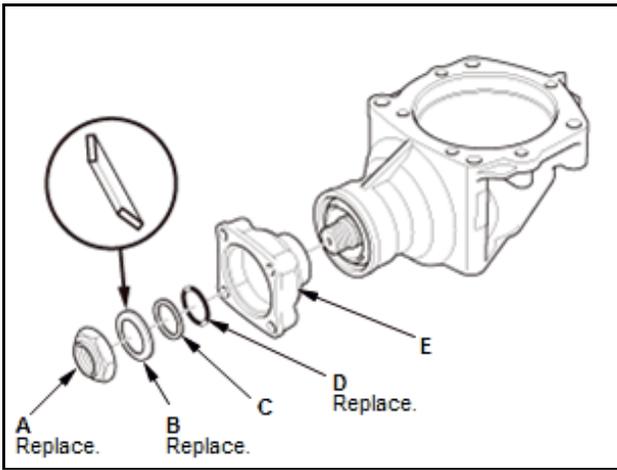
3. Companion Flange - Remove



1. Pry up the stake (A) on the locknut (B).
NOTE: Make sure the tab completely clears the groove to prevent damaging the shaft.

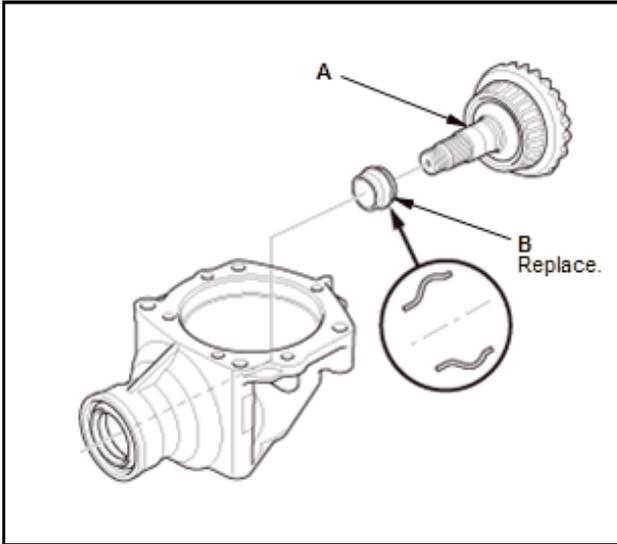


2. Secure the transfer housing (A) in a bench vise (B).
NOTE: To prevent damaging the transfer housing, always use wood blocks or equivalent materials (C) between the transfer housing and the bench vise.
 3. Install the companion holder on the companion flange.



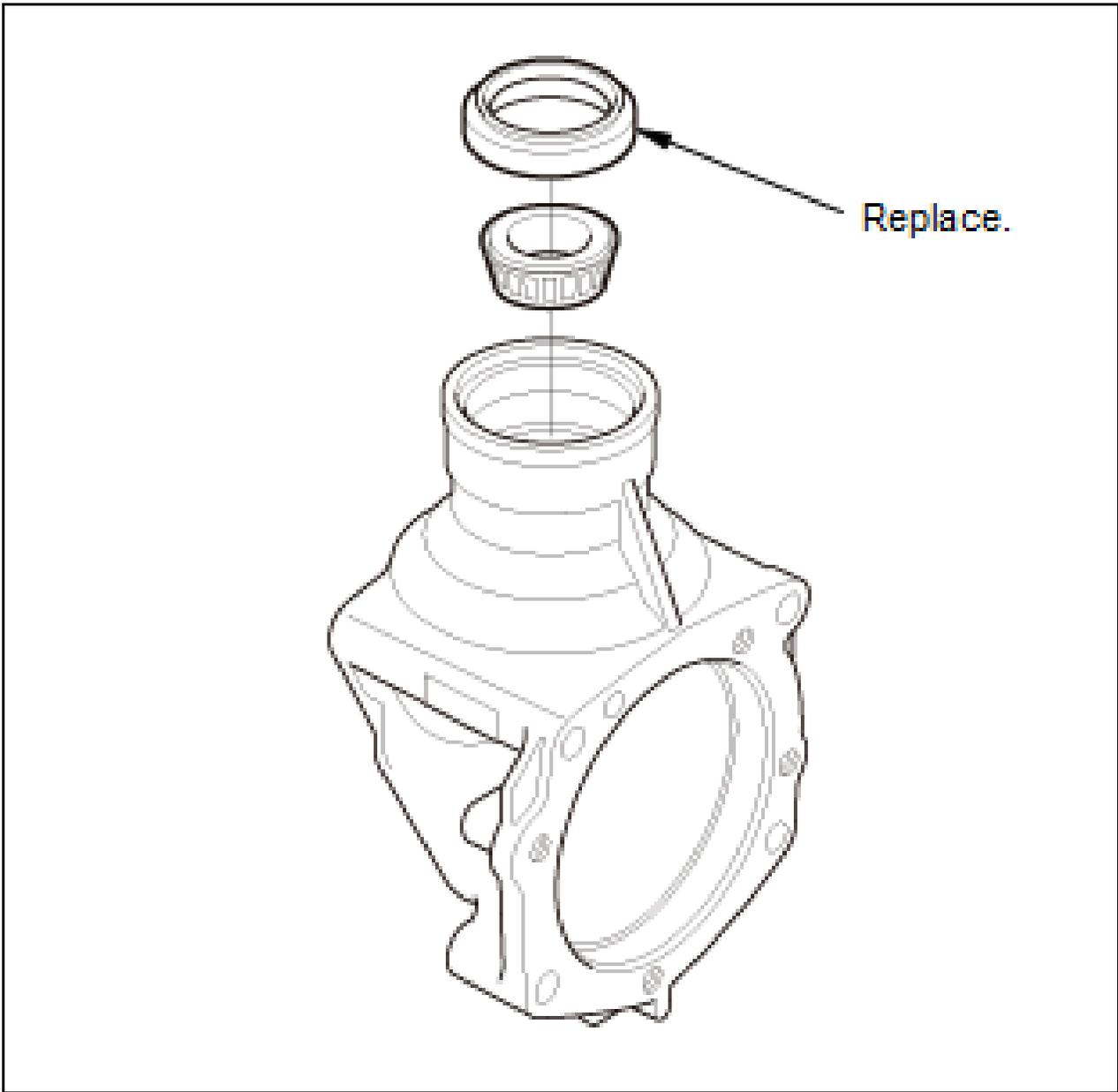
4. Remove the locknut (A), the conical spring washer (B), the back-up ring (C), the O-ring (D), and the companion flange (E).

4. Transfer Hypoid Driven Gear - Remove



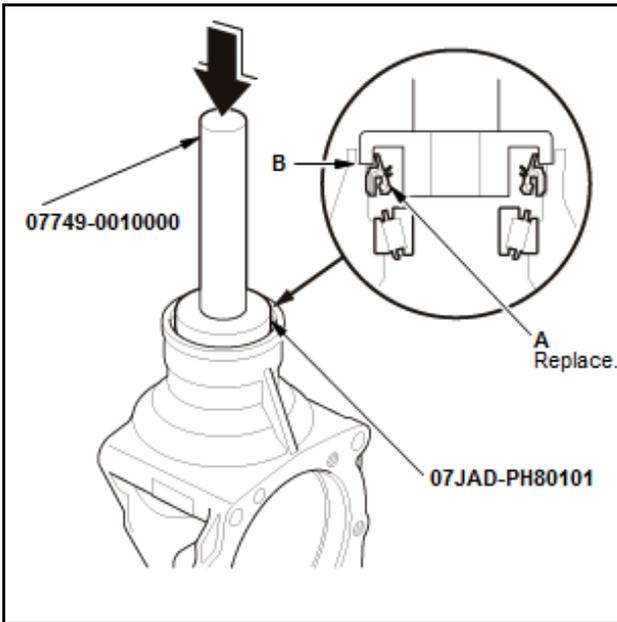
1. Remove the transfer hypoid driven gear (A) with the transfer spacer (B).

5. Transfer Oil Seal - Remove



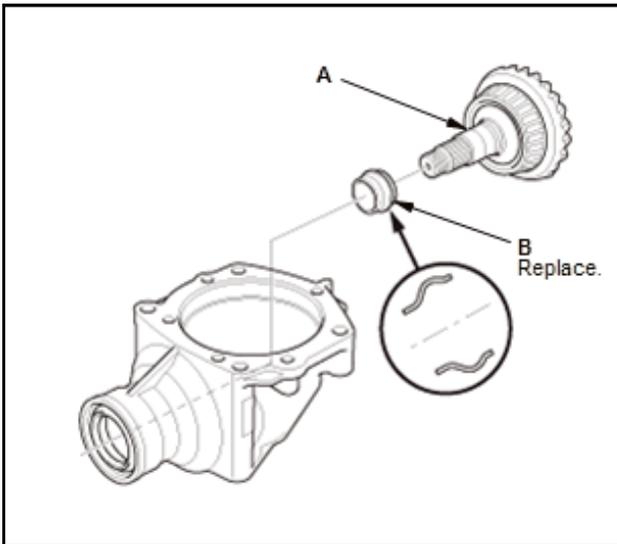
Reassembly

1. Transfer Oil Seal - Install



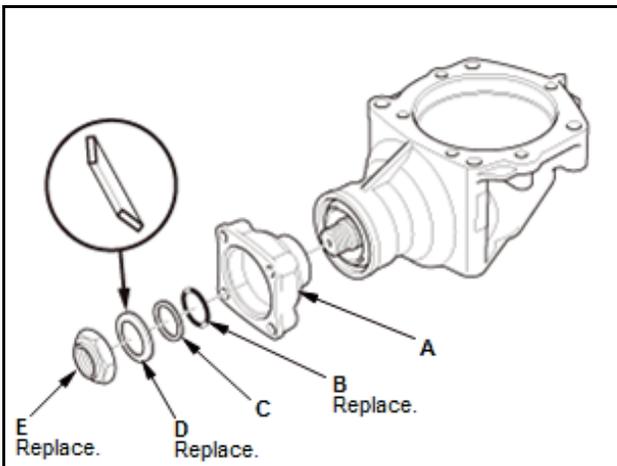
1. Install the transfer oil seal flush with the transfer housing using the 15 x 135L driver handle and the 58 mm oil seal driver attachment using a press as shown.

2. Transfer Hypoid Driven Gear - Install

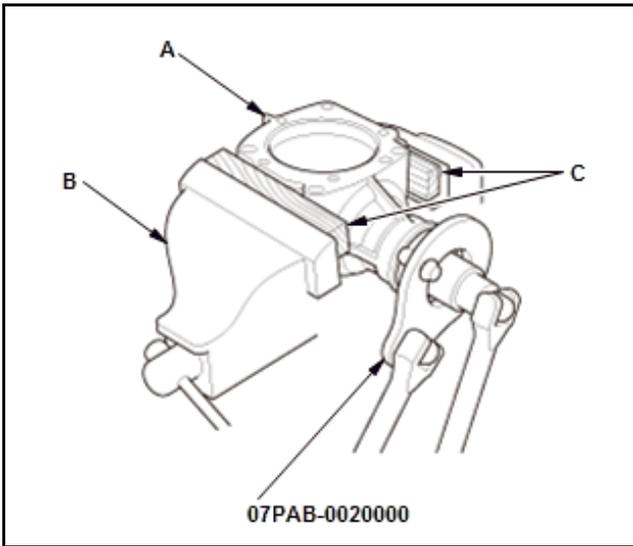


1. Install the transfer hypoid driven gear (A) with the a new transfer spacer (B).

3. Companion Flange - Install



1. Install the companion flange (A), a new O-ring (B), the back-up ring (C), a new conical spring washer (D), and a new locknut (E).
NOTE: Install the conical spring washer in the direction shown.



2. Secure the transfer housing (A) in a bench vise (B).

NOTE: To prevent damaging the transfer housing, always use wood blocks or equivalent materials (C) between the transfer housing and the bench vise.

3. Install the companion holder on the companion flange

4. Tighten the locknut while measuring the starting torque of the transfer output shaft (hypoid gear) so the starting torque is within 0.98-1.39 N.m (10.0-14.2 kgf.cm, 8.7-12.3 lbf.in). Tighten the locknut to the lower torque specification, then check the starting torque. If the starting torque is low, increase the torque on the locknut until the starting torque is acceptable.

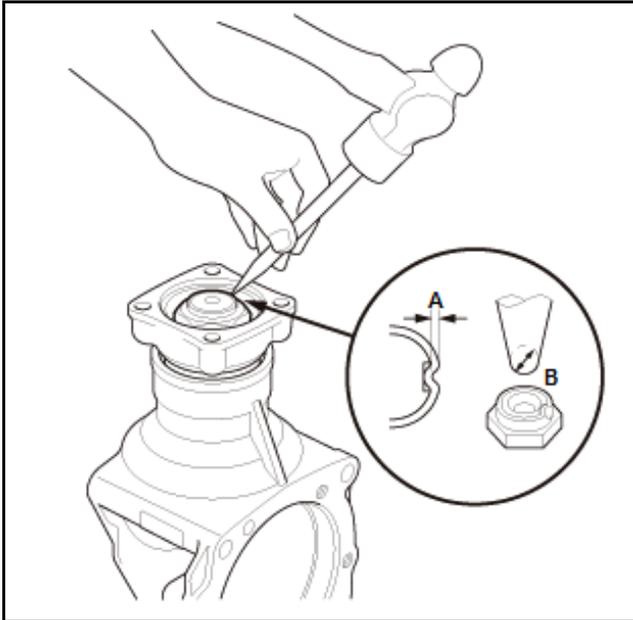
Tightening Torque:
132-260 N.m (13.5-26.5 kgf.m, 97-192 lbf.ft)
Starting Torque:

0.98-1.39 N.m (10.0-14.2 kgf.cm, 8.7-12.3 lbf.in)

NOTE:

- Rotate the companion flange several times to seat the tapered roller bearings, then measure the starting torque.
- If the starting torque exceeds 1.39 N.m (14.2 kgf.cm, 8.2 lbf.in), replace the transfer spacer and reassemble the parts. Do not adjust the 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.

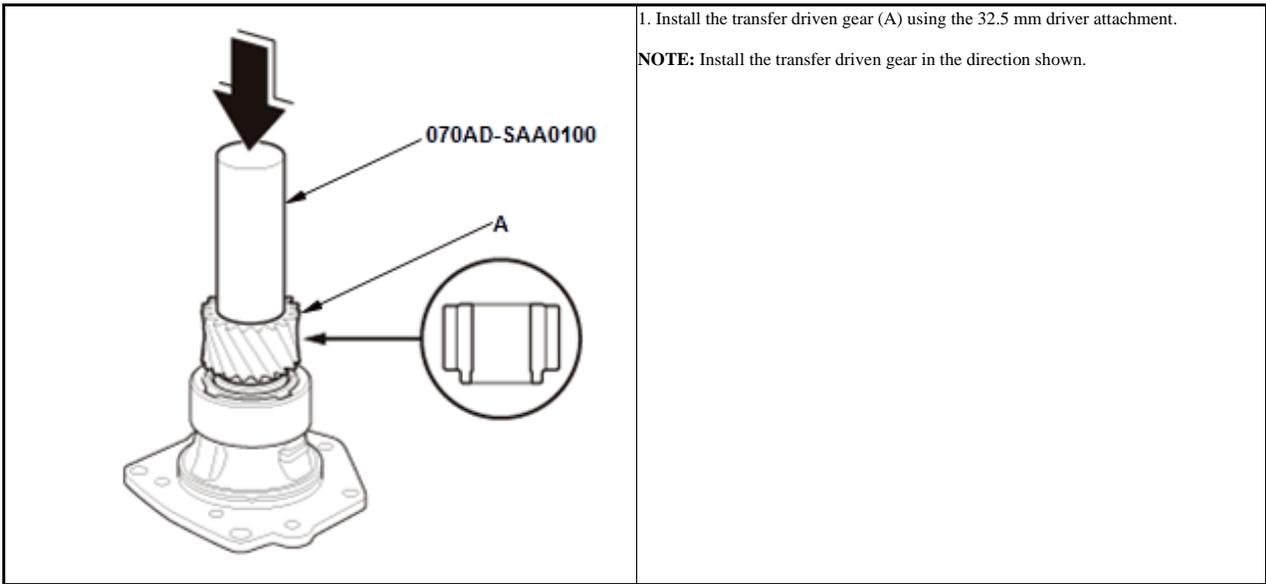
5. Remove the companion holder.



6. Stake the locknut to a depth (A) of at least 0.7 mm (0.028 in) using a 3.0-3.5 mm (0.118 in-0.138 in) punch (B).

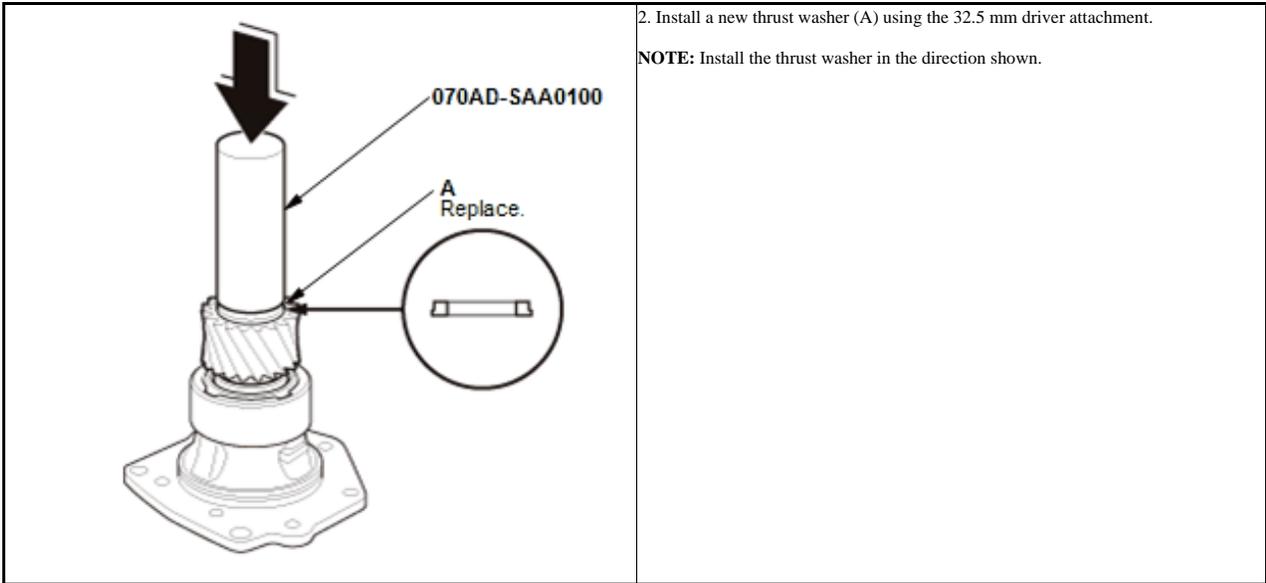
NOTE: Be careful not to crack the locknut when staking.

4. Transfer Driven Gear - Install



1. Install the transfer driven gear (A) using the 32.5 mm driver attachment.

NOTE: Install the transfer driven gear in the direction shown.



2. Install a new thrust washer (A) using the 32.5 mm driver attachment.

NOTE: Install the thrust washer in the direction shown.

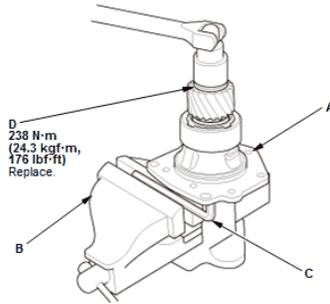


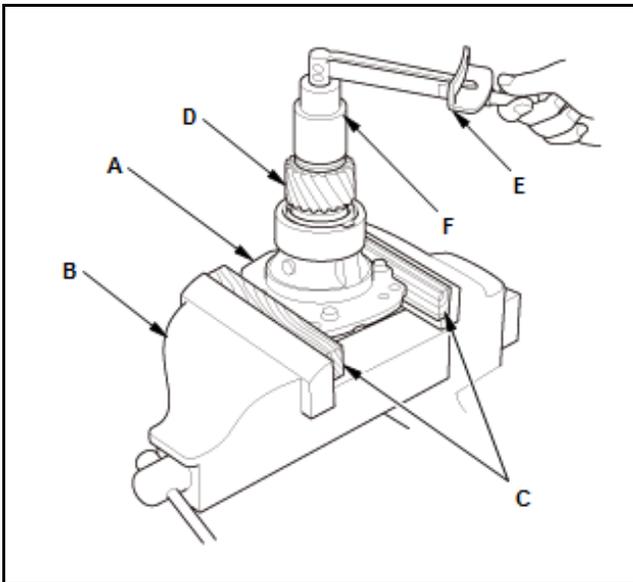
Fig. 57: Transfer Hypoid Drive Gear/Shaft Assembly Locknut With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

<p>A</p>	<p>3. Secure the transfer hypoid drive gear/shaft assembly (A) in a bench vise (B) with hex wrench (C)</p> <p>4. Install a new locknut (D).</p>
----------	---



5. Stake the locknut to a depth (A) of at least 0.7 mm (0.028 in) using a 3.0-3.5 mm (0.118 in-0.138 in) punch (B).

NOTE: Be careful not to crack the locknut when staking.



6. Secure the transfer hypoid drive gear/shaft assembly (A) in a bench vise (B).

NOTE: To prevent damaging the transfer housing, always use wood blocks or equivalent materials (C) between the transfer housing and the bench vise

7. Rotate the transfer driven gear (D) in both directions to seat the bearings

8. Measure the starting torque of the transfer hypoid drive gear/shaft assembly using the torque wrench (E), and a socket (F).

Starting Torque:
 1.63-5.23 N.m (16.6-53.4 kgf.cm, 14.4-46.3 lbf.in)

9. If the starting torque is out of the standard, [replace the transfer assembly](#) .

5. Transfer Hypoid Drive Gear - Tooth Contact Pattern Check

6. Transfer Hypoid Drive Gear/Shaft Assembly - Install

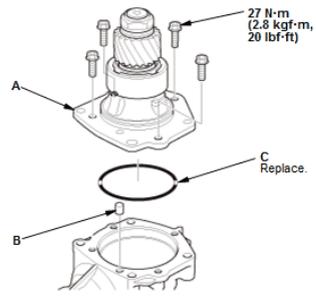


Fig. 58: Transfer Hypoid Drive Gear/Shaft Assembly With Torque Specifications
 Courtesy of HONDA, U.S.A., INC.

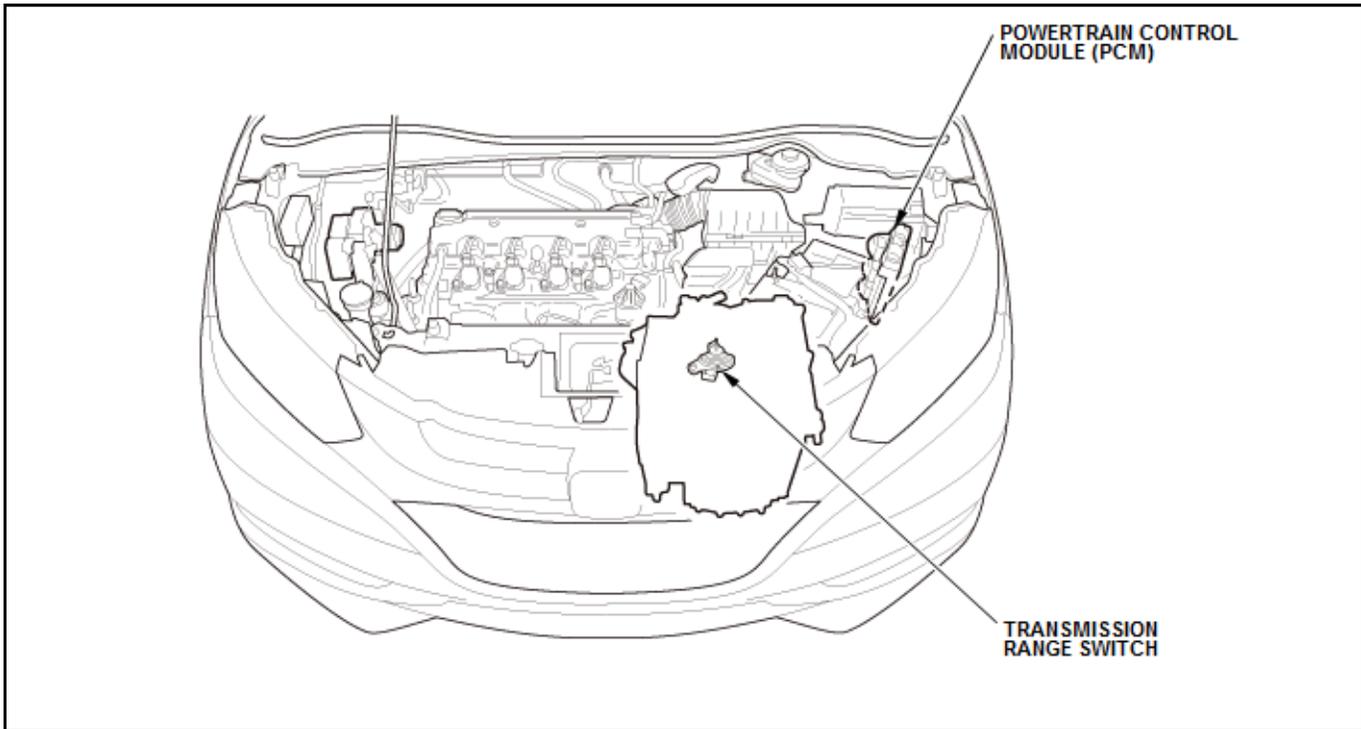
1. Install the transfer hypoid drive shaft assembly (A), dowel pin (B) and a new O-ring (C).

7. [Transfer Assembly - Total Starting Torque Check](#)

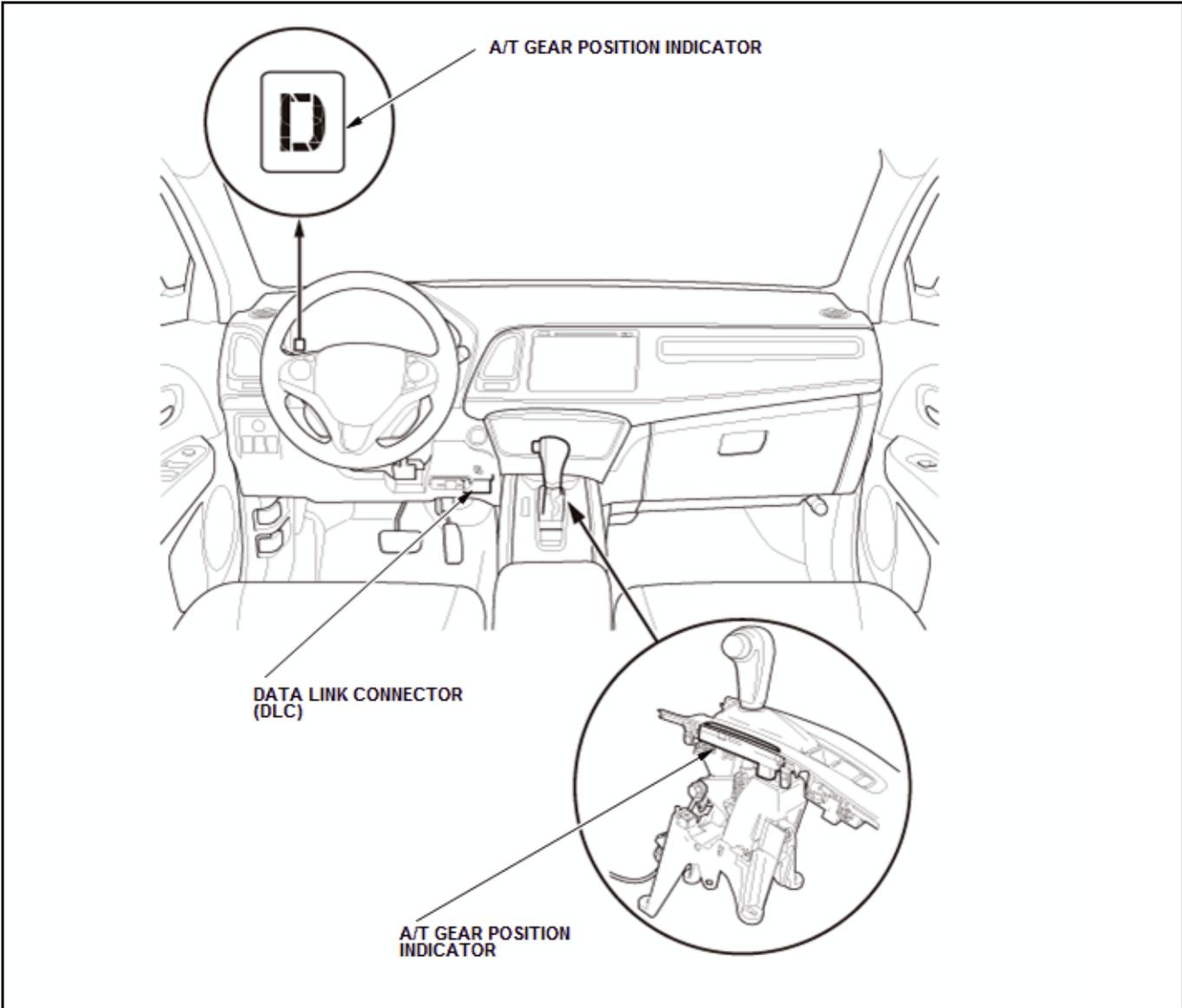
8. [Transfer Assembly - Transfer Gear Backlash Check](#)

COMPONENT LOCATION INDEX

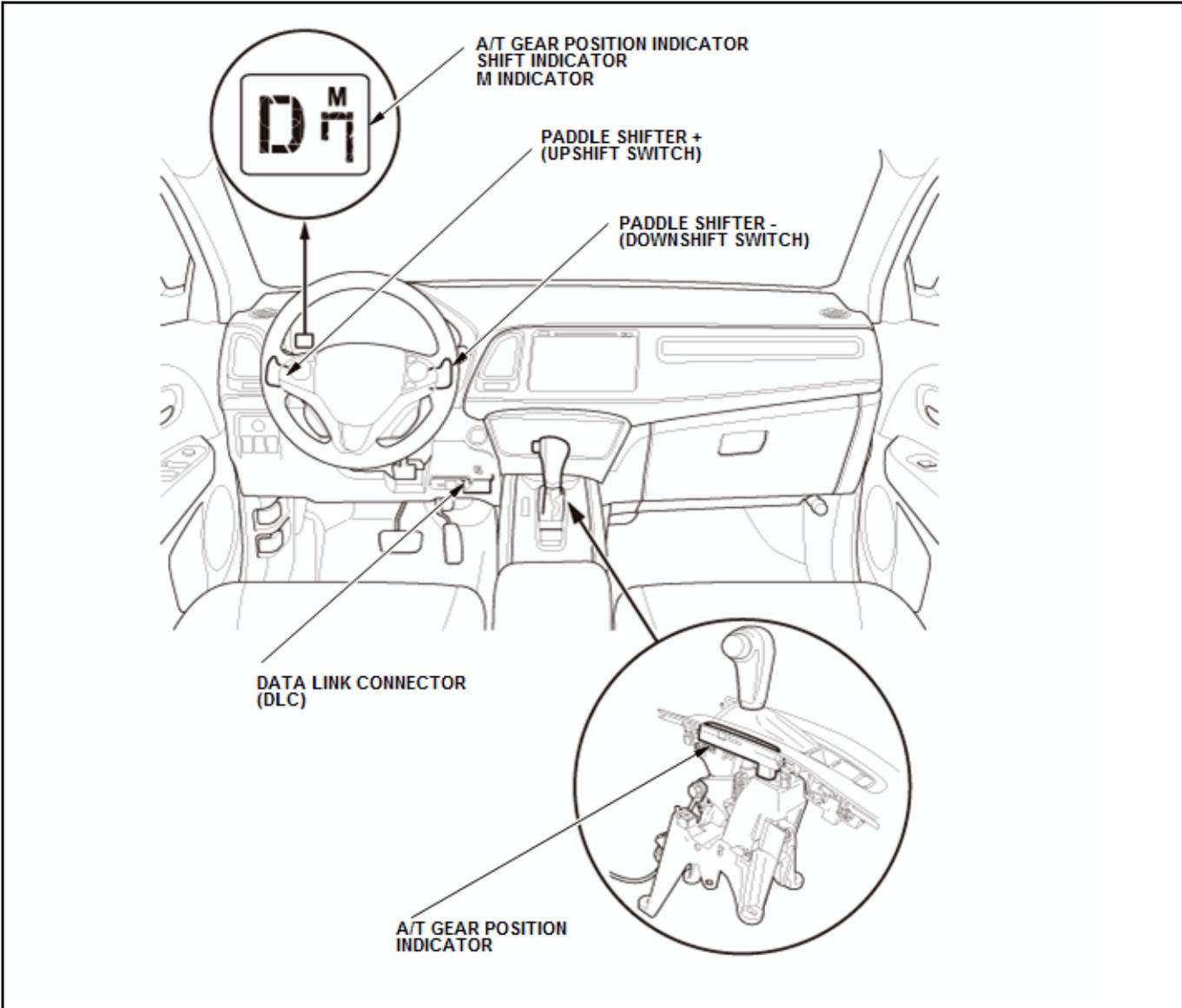
AT GEAR POSITION INDICATOR COMPONENT LOCATION INDEX (CVT)



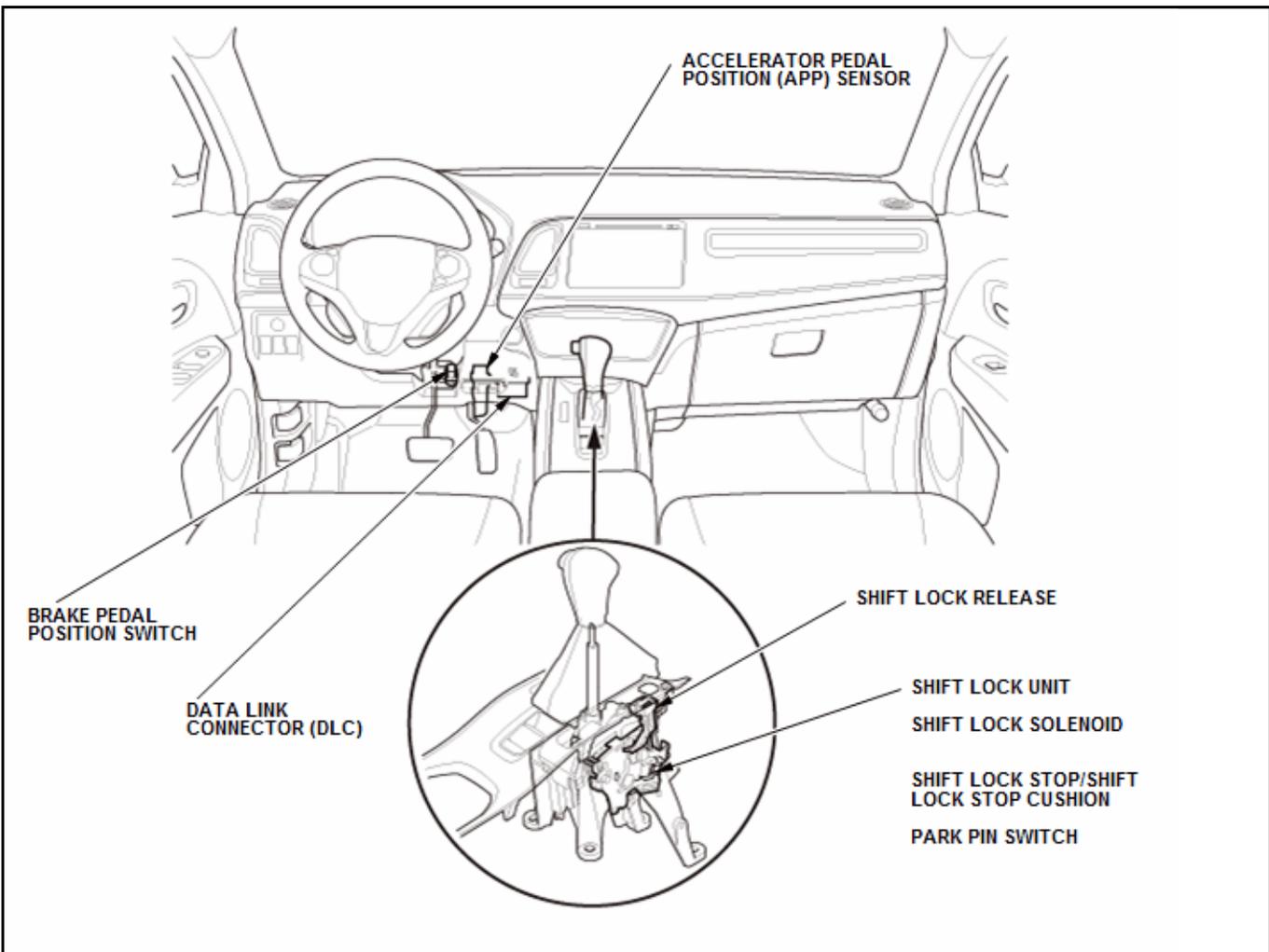
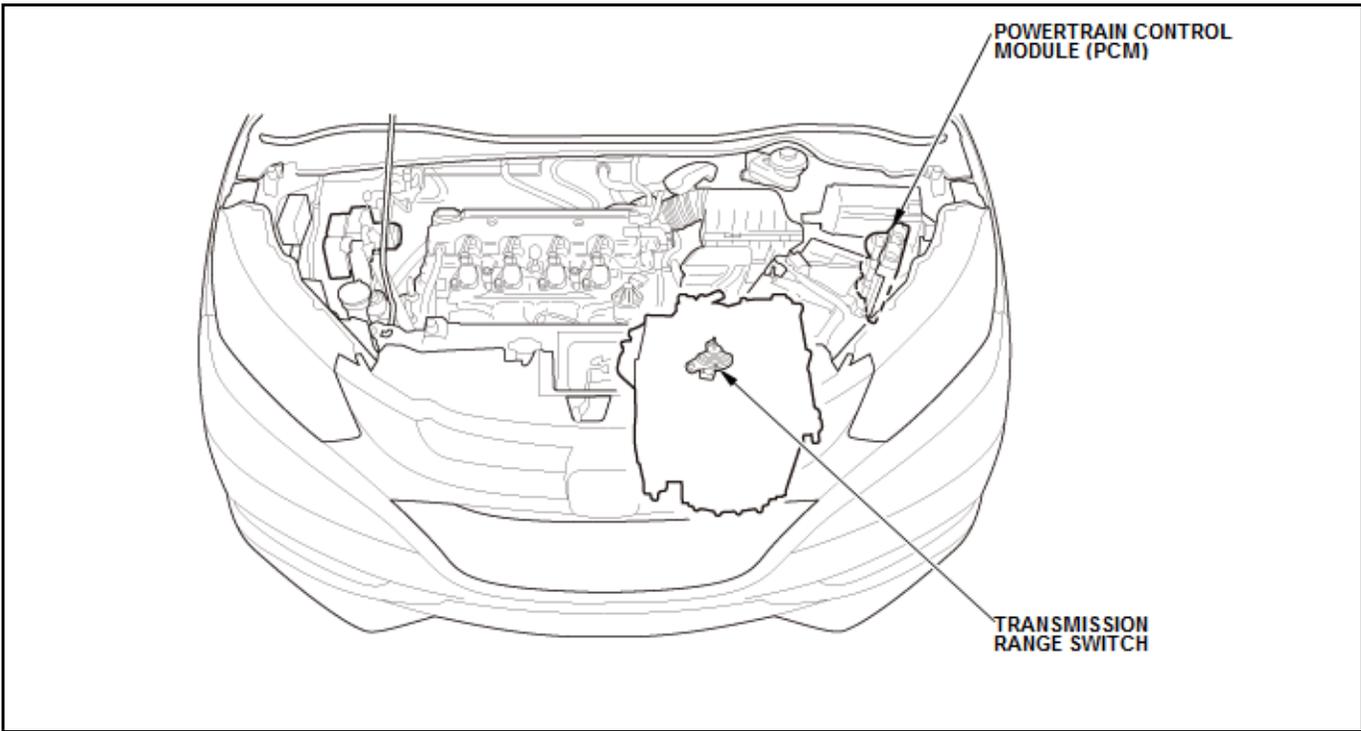
Without paddle shifter



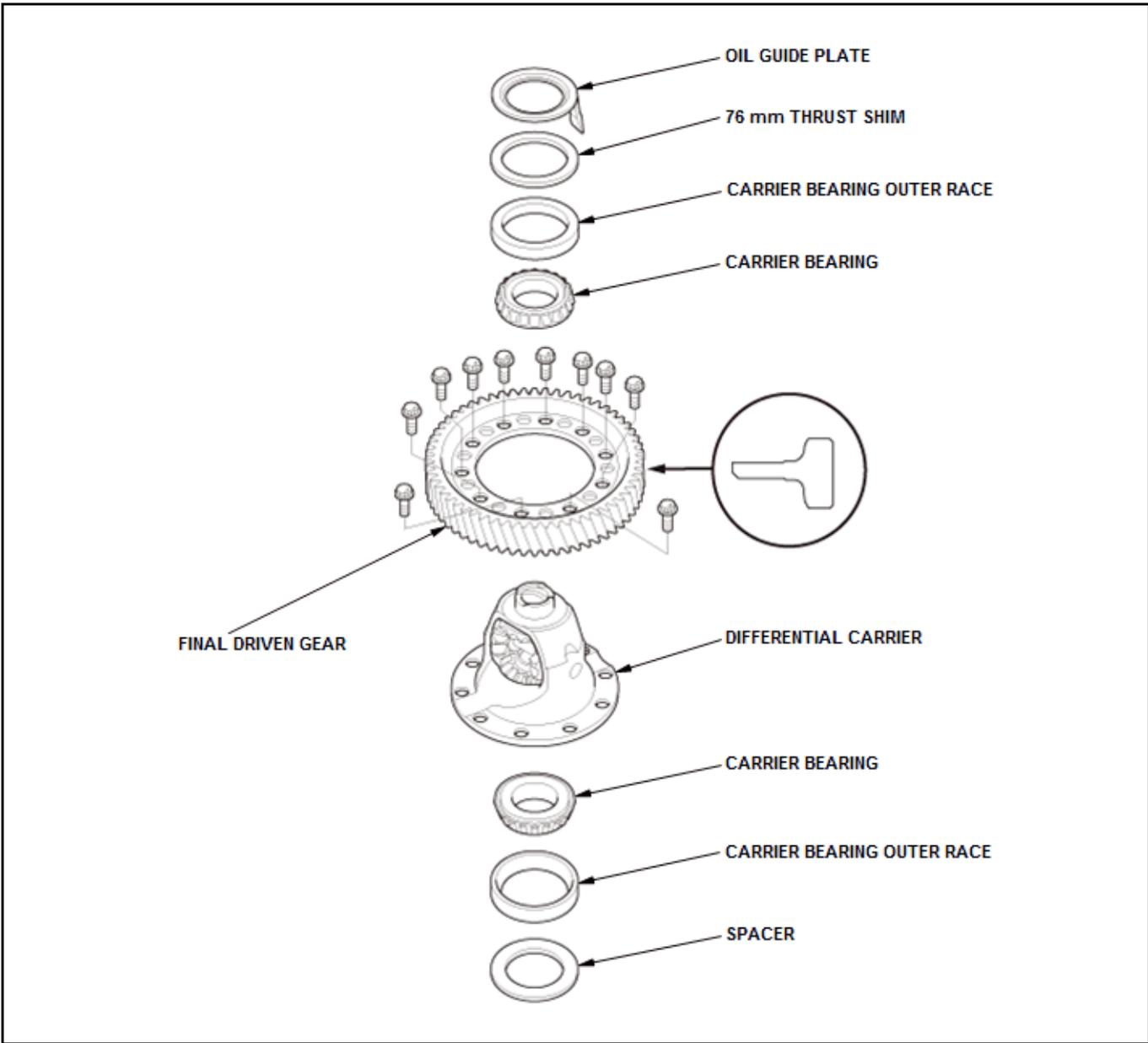
With paddle shifter



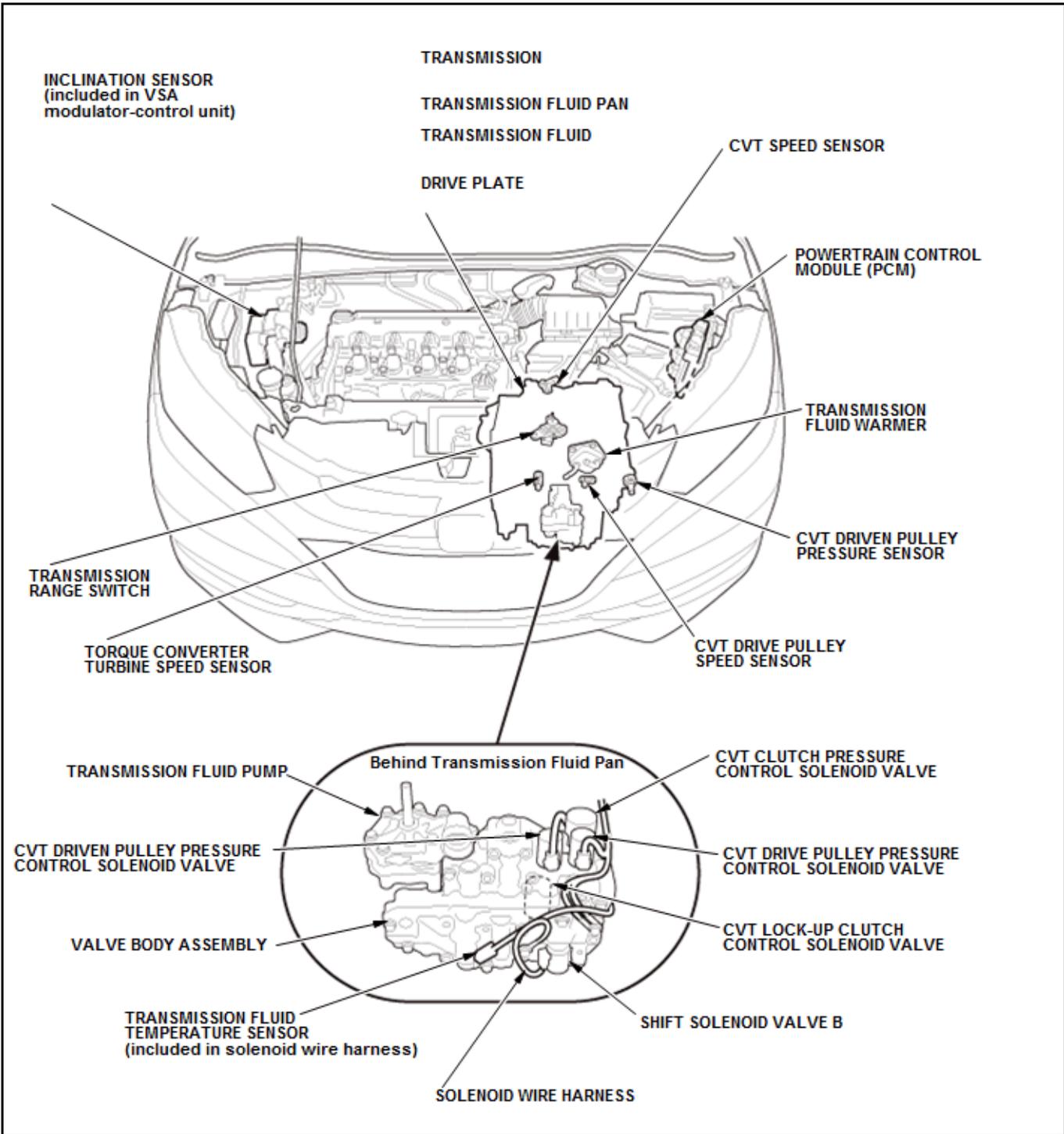
A/T INTERLOCK SYSTEM COMPONENT LOCATION INDEX (CVT)

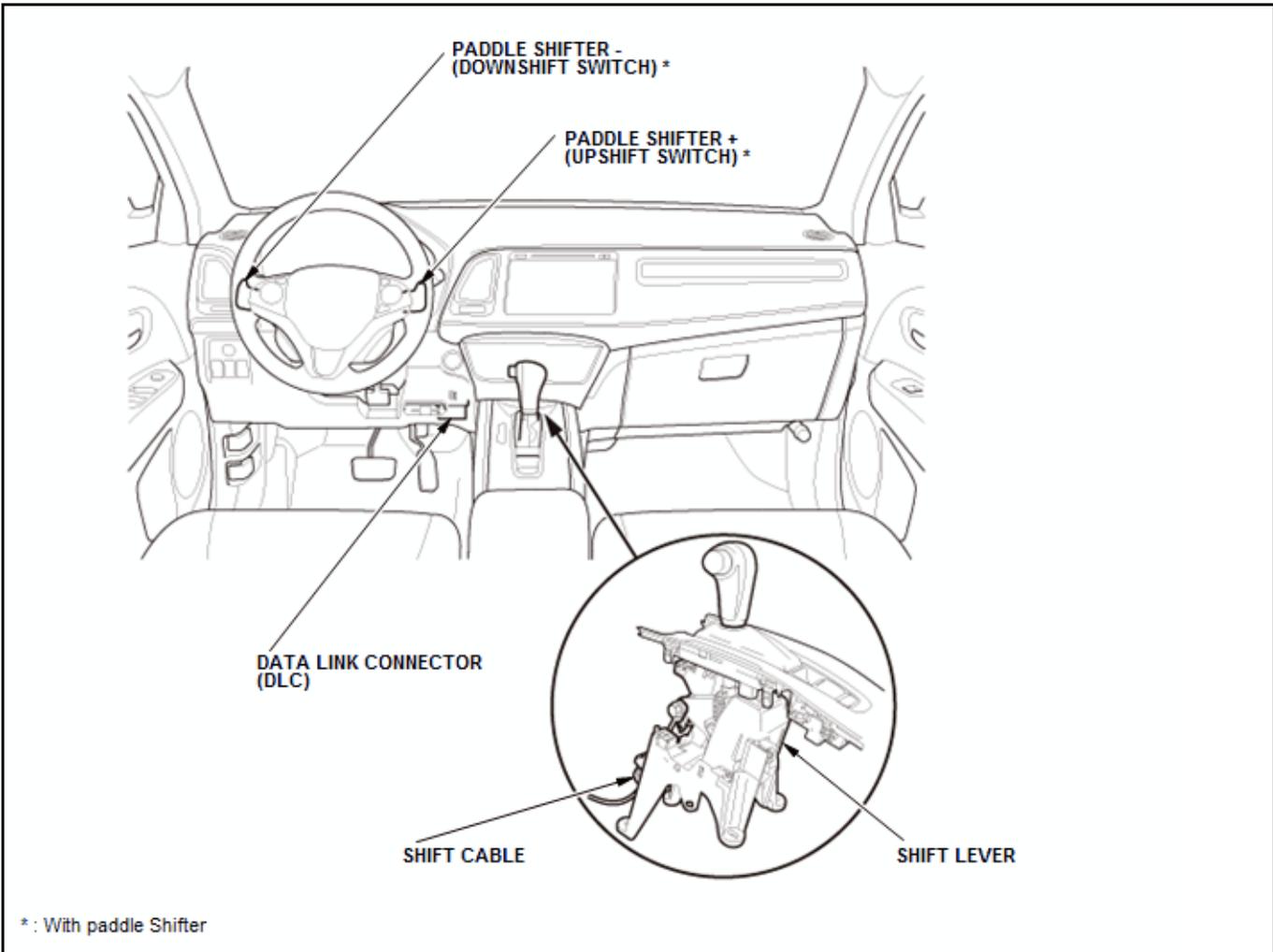


CVT DIFFERENTIAL COMPONENT LOCATION INDEX (CVT)

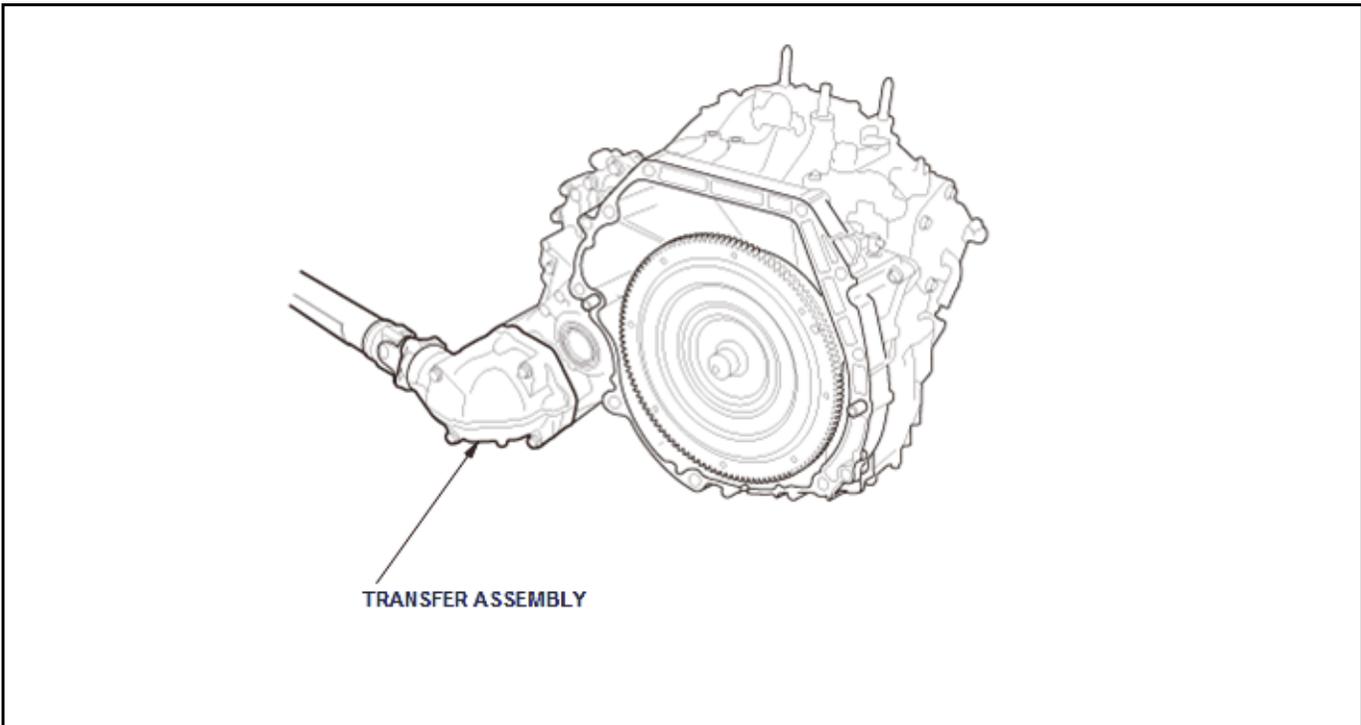


CVT SYSTEM COMPONENT LOCATION INDEX (CVT)





TRANSFER ASSEMBLY COMPONENT LOCATION INDEX (CVT)

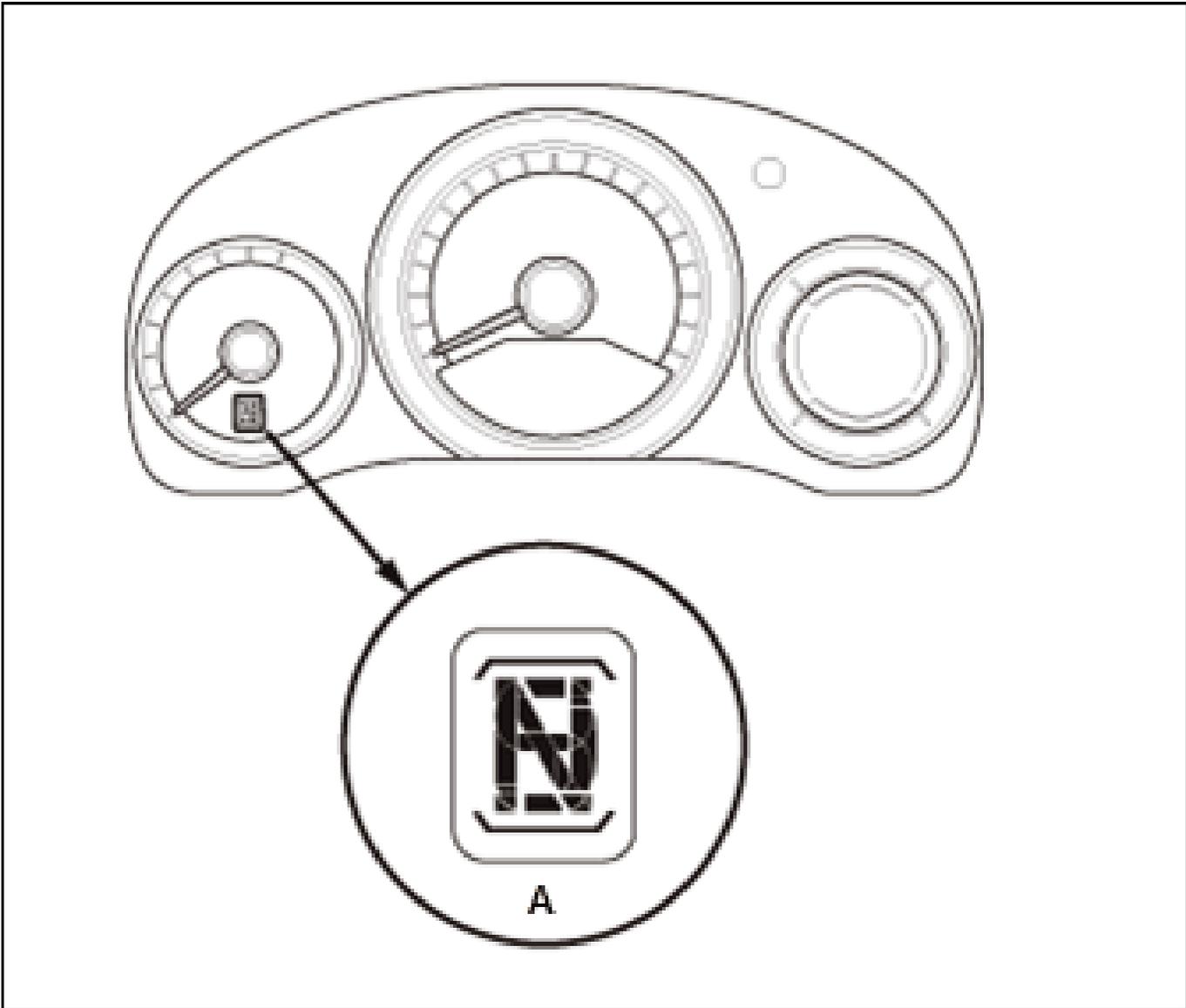


HOW TO INFORMATION

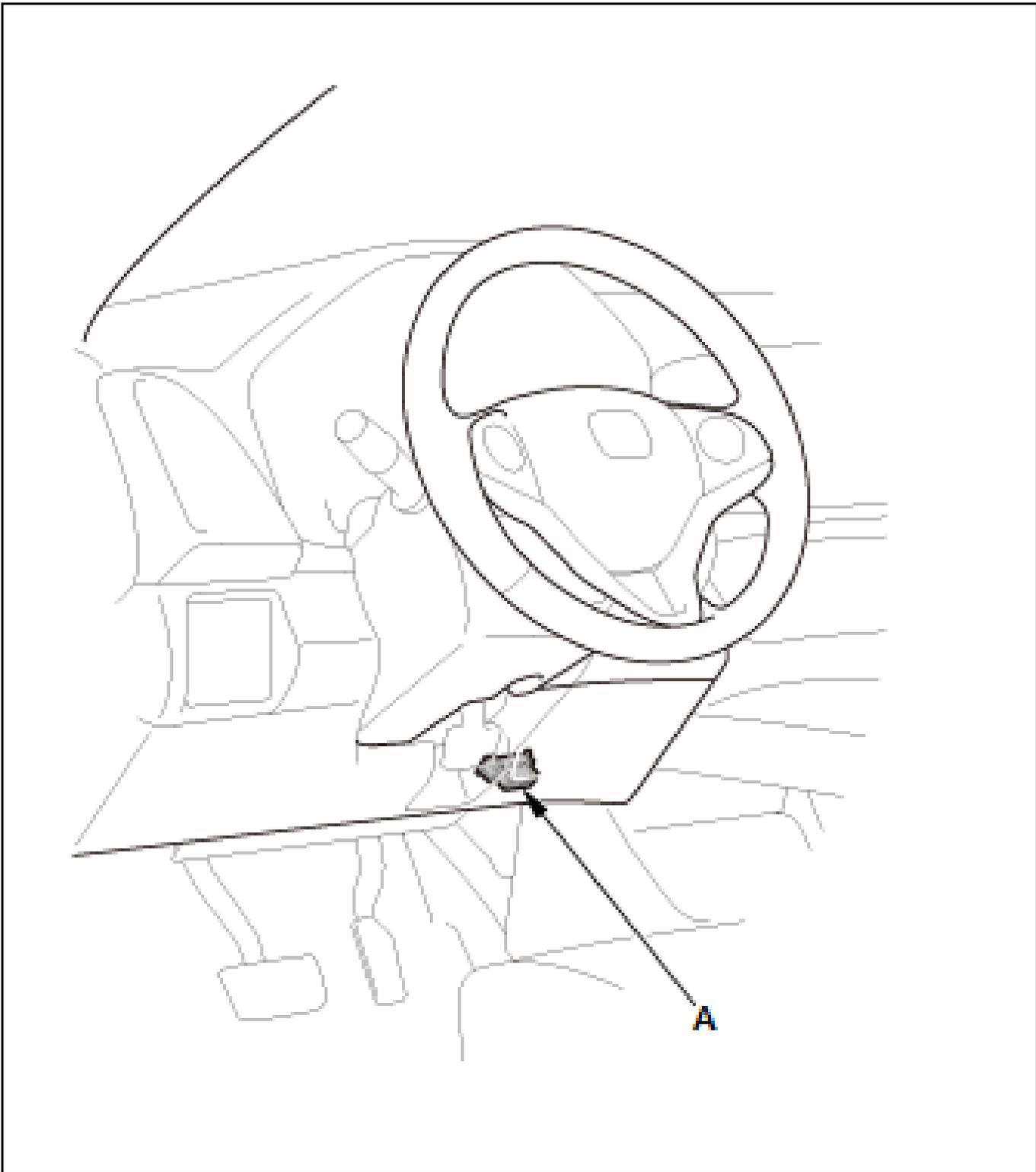
HOW TO TROUBLESHOOT THE CVT SYSTEM (CVT)

How to Check for DTCs with the Honda Diagnostic System (HDS)

When the powertrain control module (PCM) senses an abnormality in the input or output systems, the A/T gear position indicator (A) in the gauge control module will usually blink as shown.



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



If the A/T gear position indicator or the malfunction indicator lamp (MIL) has been reported on, or if a driveability problem is suspected, follow this procedure:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the vehicle to the ON mode.
3. Make sure the HDS communicates with the vehicle. If it does not, [go to the DLC circuit troubleshooting](#).
4. Check for Pending or Confirmed DTCs with the HDS.
5. Record the freeze data and the on-board snapshots for all fuel and emissions DTCs and A/T DTCs.
6. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC.
7. Clear the DTC and the data.
8. 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 DTC's 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.

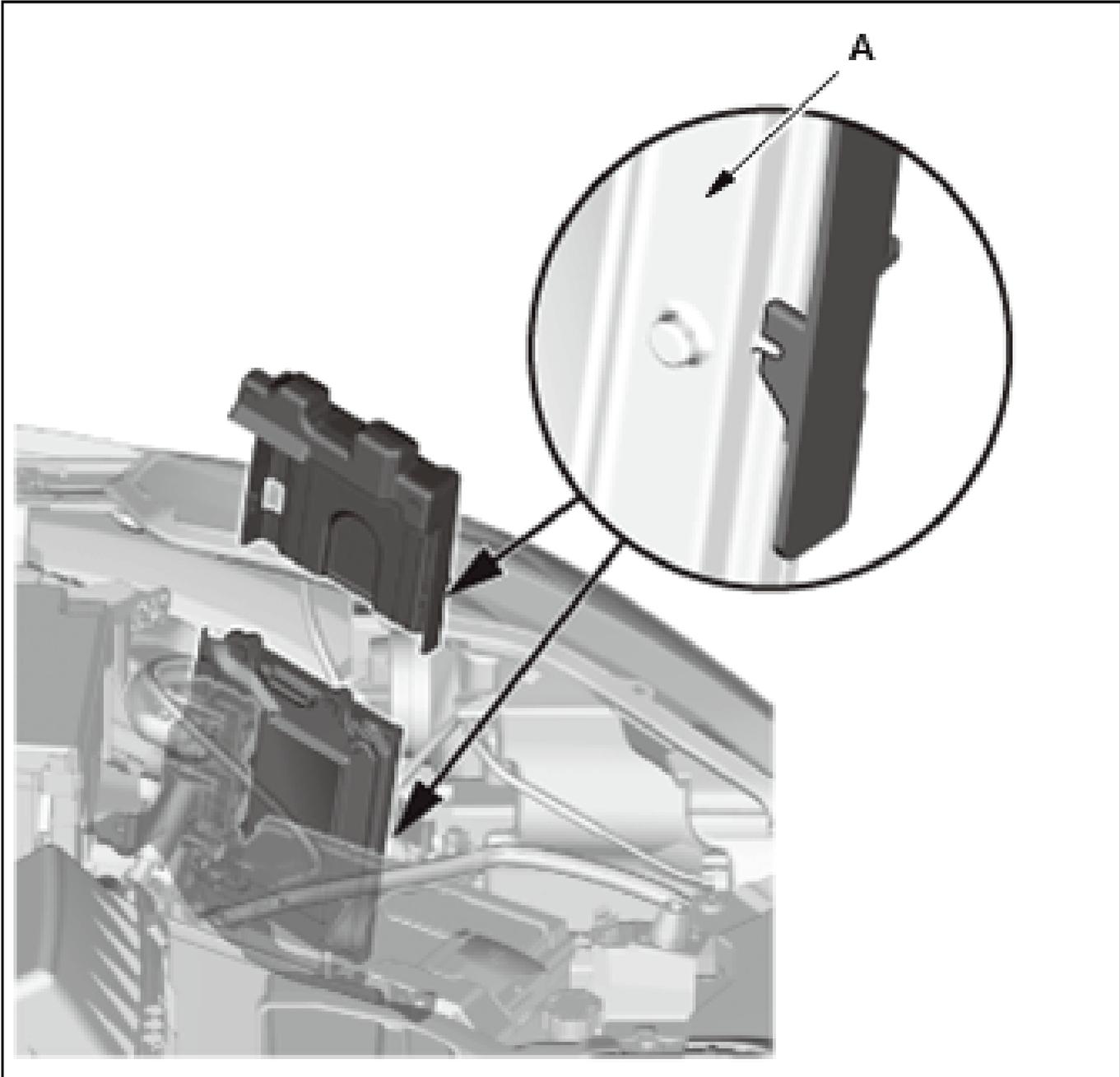
Symptom Troubleshooting Versus DTC Troubleshooting

Some symptoms will not set DTCs or cause the A/T gear position indicator to blink. If the MIL was reported ON or the A/T gear position 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 Troubleshoot Circuits at the PCM Connectors

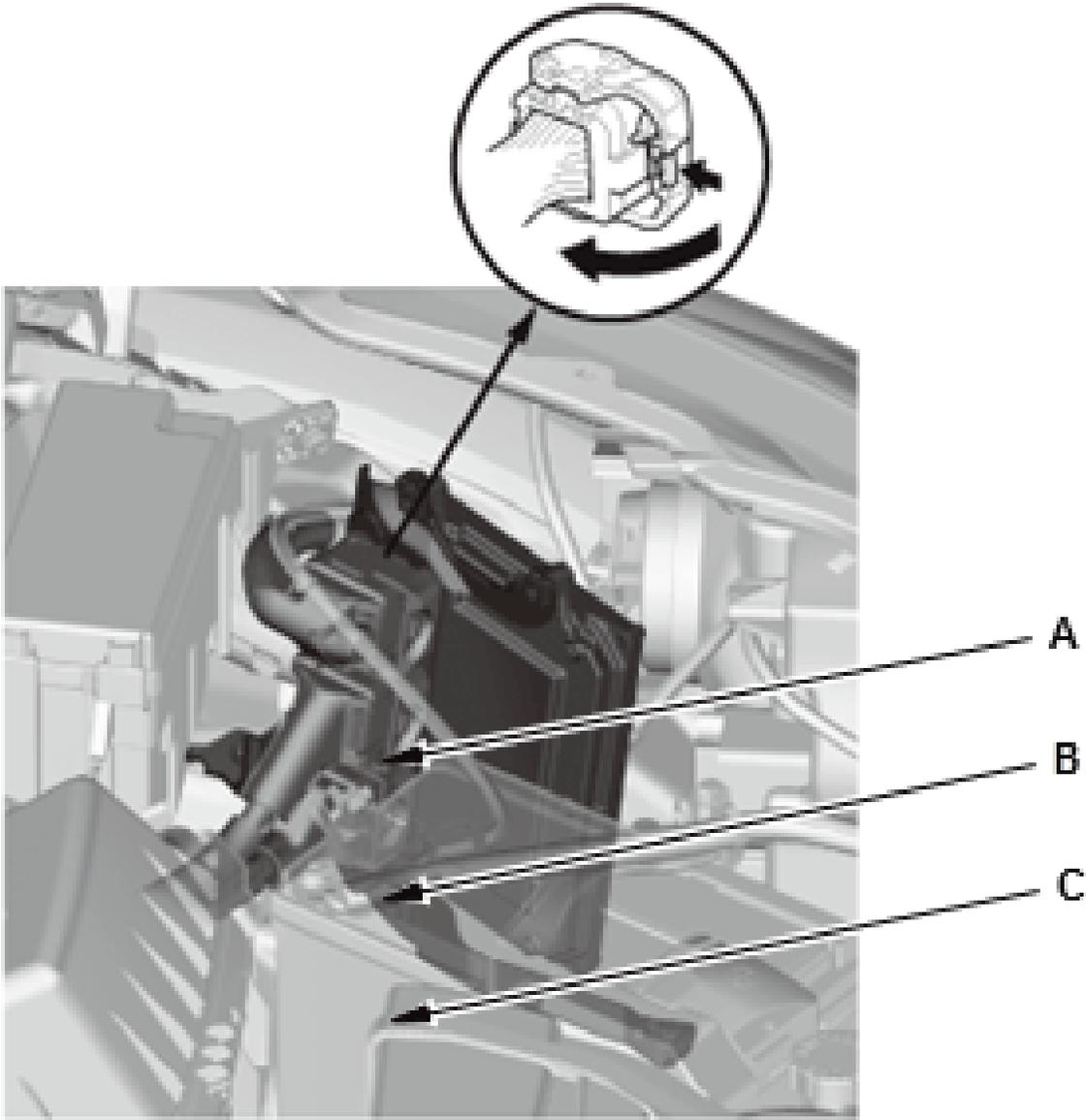
NOTE: The PCM stays on for up to an hour after the vehicle is turned to the OFF (LOCK) mode. Jumping the SCS line after turning the vehicle to select the OFF (LOCK) mode cancels this function. Disconnecting the PCM during this function, without jumping the SCS line first, can damage the PCM.

1. Jump the SCS line with the HDS
2. Remove the PCM cover (A).

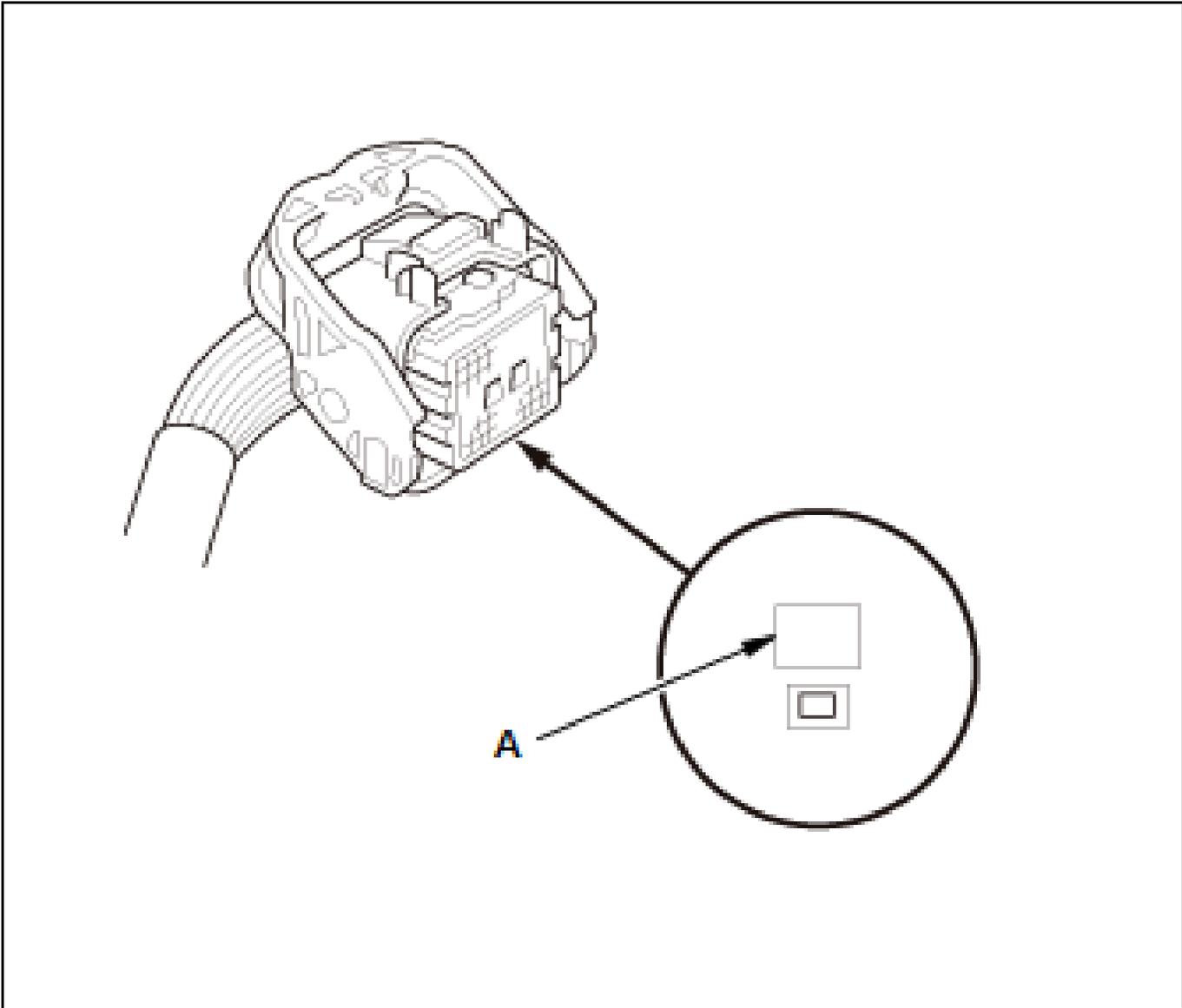


3. Disconnect PCM connectors A, B, and C.

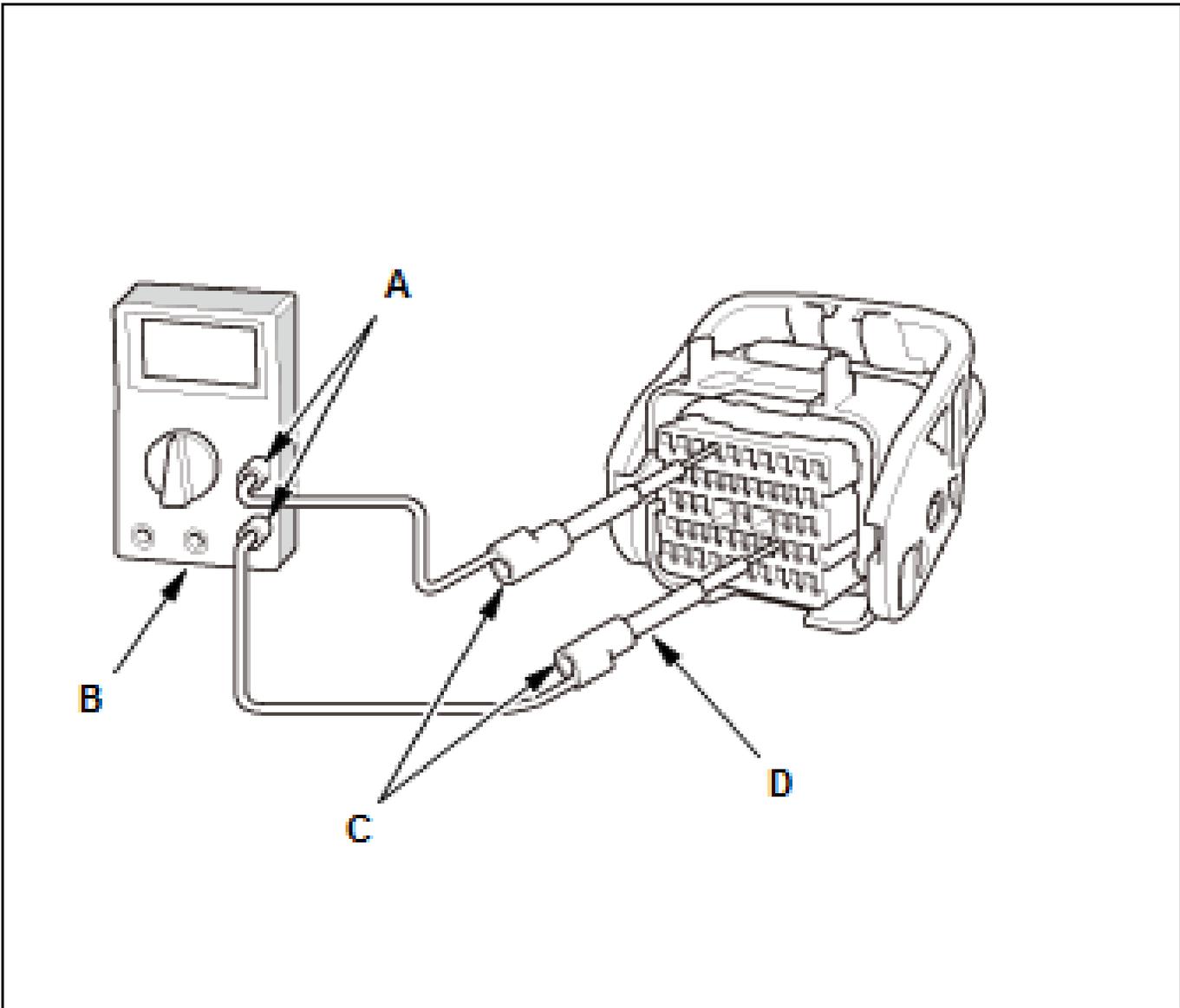
NOTE: PCM connectors A, B, and C have symbols (A=□, B=Δ, C=◊) embossed on them for identification.



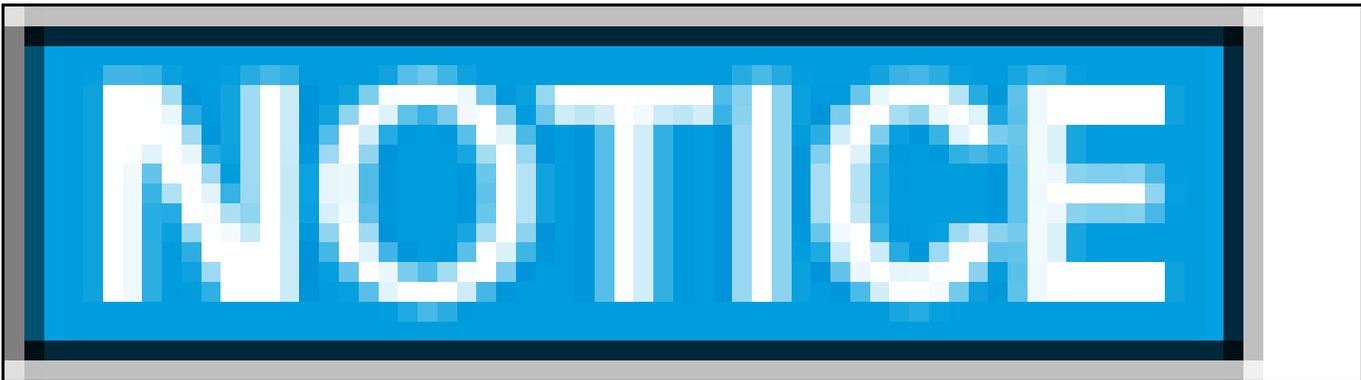
4. When diagnosis/troubleshooting is done at the PCM connectors, use the terminal test port (A) above the terminal you need to check.



5. Connect one side of the patch cord terminals (A) to a commercially available digital multimeter (B), and connect the other side of the terminal (C) to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (D).



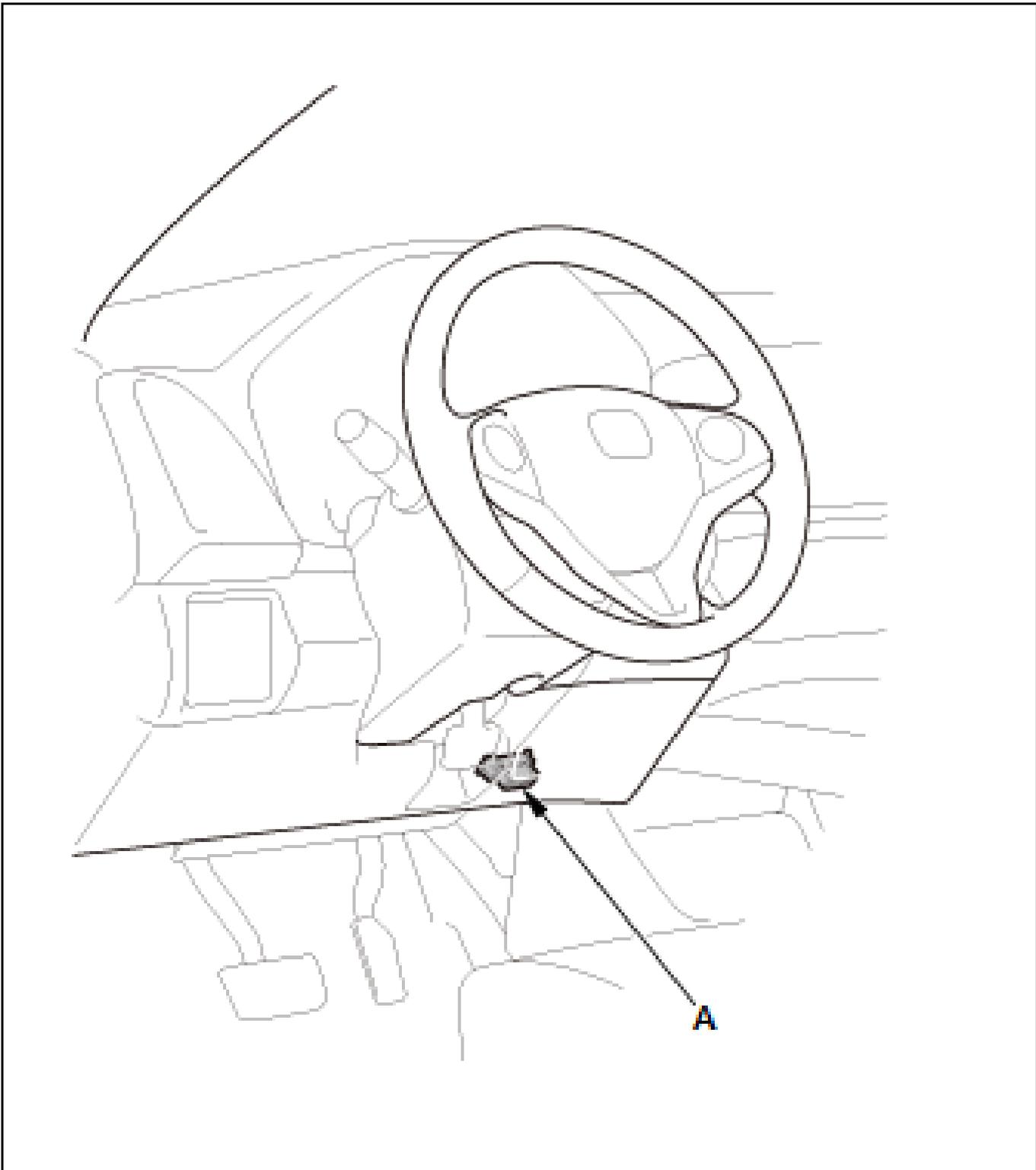
6. Gently contact the pin probe (male) at the terminal test port from the terminal side. Do not force the tips into the terminals.



- For accurate results, always use the pin probe (male).
- To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.
- Do not puncture the insulation on a wire. Punctures can cause or eventually lead to poor or intermittent electrical connections.

Clear A/T DTCs Procedure

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



2. Turn the vehicle to the ON mode.
3. Make sure the HDS communicates with the vehicle. If it does not, [go to the DLC circuit troubleshooting](#).
4. Clear the DTC(s) with the HDS.

OBDD Status

The OBDD status shows the current system status of each DTC and all of the parameters. This function is used to see if a repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- PASSED: The on-board diagnosis is successfully completed.
- 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 \(required after any troubleshooting\)](#)

NOTE: Reset the PCM with the HDS while the engine is stopped.

1. Turn the vehicle to the OFF (LOCK) mode
2. Turn the vehicle to the ON mode, and wait for 30 seconds
3. Turn the vehicle to the OFF (LOCK) mode, and disconnect the HDS from the DLC
4. Start the engine with the shift lever in P or N position/mode, and warm it up to normal operating temperature (the radiator fan comes on twice)
5. To verify that the problem is repaired, test-drive the vehicle for several minutes at speeds over 31 mph (50 km/h) or under the same conditions as those indicated by the freeze data.

Failure Reproduction Technique

NOTE: Follow these points while the vehicle is raised on a lift for the test-drive

- In case of the vehicle speed below 31 mph (50 km/h): Disable the VSA by pressing the VSA OFF button.
- In case of the vehicle speed above 31 mph (50 km/h): [Enter the VSA maintenance mode](#) .
- VSA DTC(s) may come on when test-driving on a lift. If the VSA DTC(s) come on, clear the DTC(s) with the HDS.
- Use the S-paddle shift mode to select gears manually for model equipped with the paddle shifters.

Self-Diagnosis

If the PCM detects the failure of a signal from a sensor, a switch, a solenoid valve, or from another control unit, it stores a Pending or Confirmed DTC. Depending on the failure, a DTC is stored in either the first or the second drive cycle. When a Confirmed DTC is stored, the PCM blinks the A/T gear position indicator and/or turns on the malfunction indicator lamp (MIL) by a signal sent to the gauge control module via F-CAN.

• One Drive Cycle Detection Method:

When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or from another control unit, the PCM stores a Pending or Confirmed DTC for the failure and blinks the A/T gear position indicator and/or turns on the MIL immediately.

• Two Drive Cycle Detection Method:

When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or from another control unit in the first drive cycle, the PCM stores a Pending DTC. The A/T gear position indicator and the MIL do not turn on at this time. If the failure continues in the second drive cycle, the PCM stores a Confirmed DTC and blinks the A/T gear position indicator and/or turns on the MIL.

Fail-Safe Function

When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or from another control unit, the PCM ignores that signal and substitutes a pre-programmed value for that signal to allow the CVT to continue operating. This causes a DTC to be stored and the A/T gear position indicator to blink and/or the MIL to come on. The transmission may not shift normally during fail-safe operation. Do not run the test-driving diagnosis when the MIL is ON, or the A/T gear position indicator is blinking.