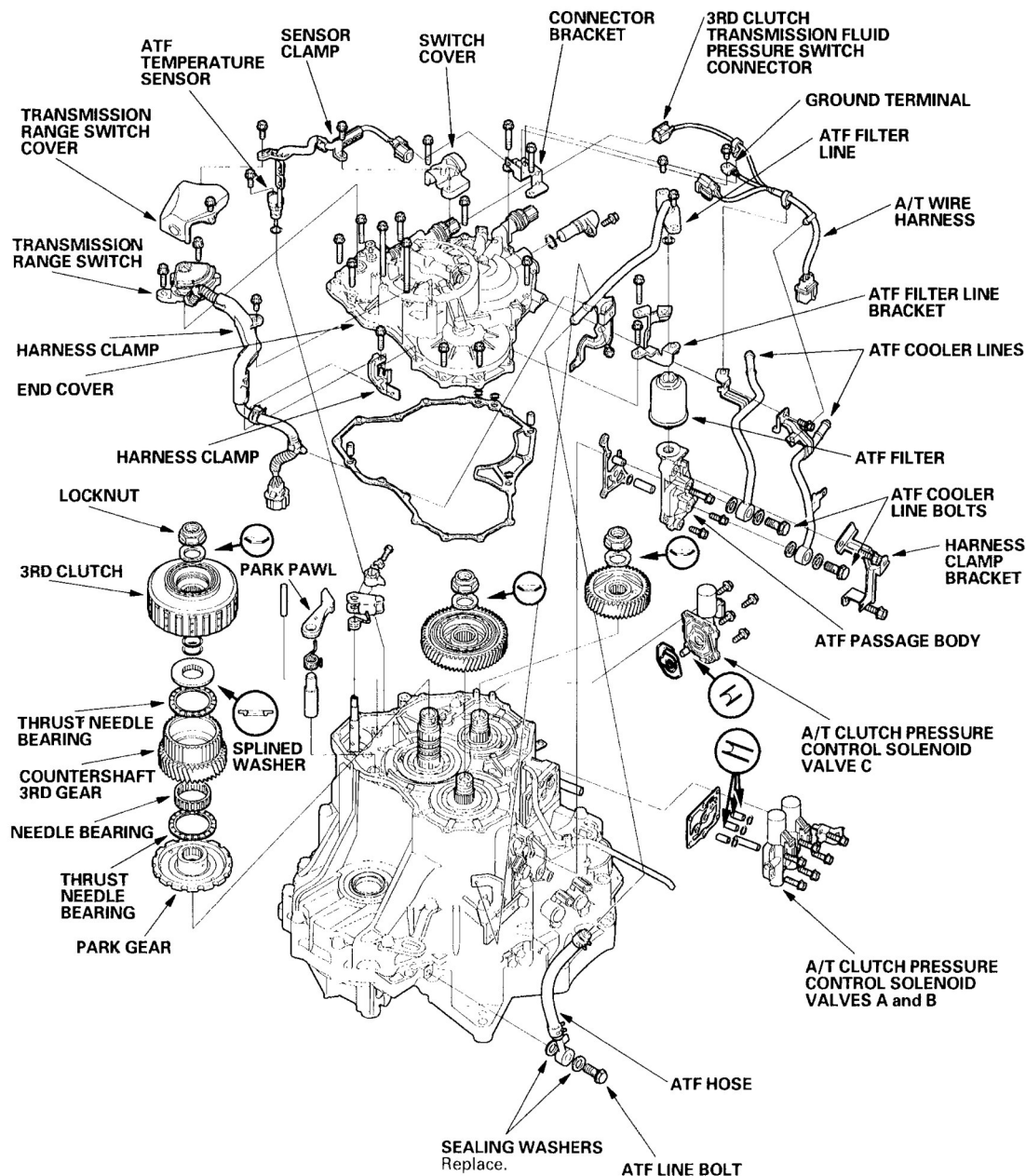


2002-2004 AUTOMATIC TRANSMISSIONS

Overhaul - BYBA 5-Speed

TRANSMISSION END COVER

END COVER, 3RD GEAR, IDLER GEAR & 3RD CLUTCH REMOVAL



G01502422

Fig. 1: Exploded View Of End Cover Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required:

- Mainshaft holder 07GAB-PF50101 or 07GAB-PF50100.
- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A.

NOTE: Refer to Fig. 1 as needed during the following procedure.

1. Remove the ATF temperature sensor connector from the connector bracket, then disconnect the connector.
2. Remove the ATF temperature sensor harness clamp bolts and the ATF temperature sensor, then remove the switch cover.
3. Remove the A/T wire harness ground terminal from the connector bracket, and disconnect the 3rd clutch transmission fluid pressure switch connector, then remove the connector bracket.
4. Remove the transmission range switch cover.
5. Remove the transmission range switch harness clamp bolts and harness clamp, then remove the transmission range switch.
6. Remove the harness clamp bracket, ATF cooler line bolts (two), and lines.
7. Remove the line bolt, the ATF hose, and the ATF filter line.
8. Remove the ATF filter line bracket and ATF filter. Remove the ATF passage body if necessary.
9. Remove the A/T clutch pressure control solenoid valve C.
10. Remove the remaining 10 bolts on the end cover, then remove the end cover.
11. Slip the special tool onto the mainshaft.

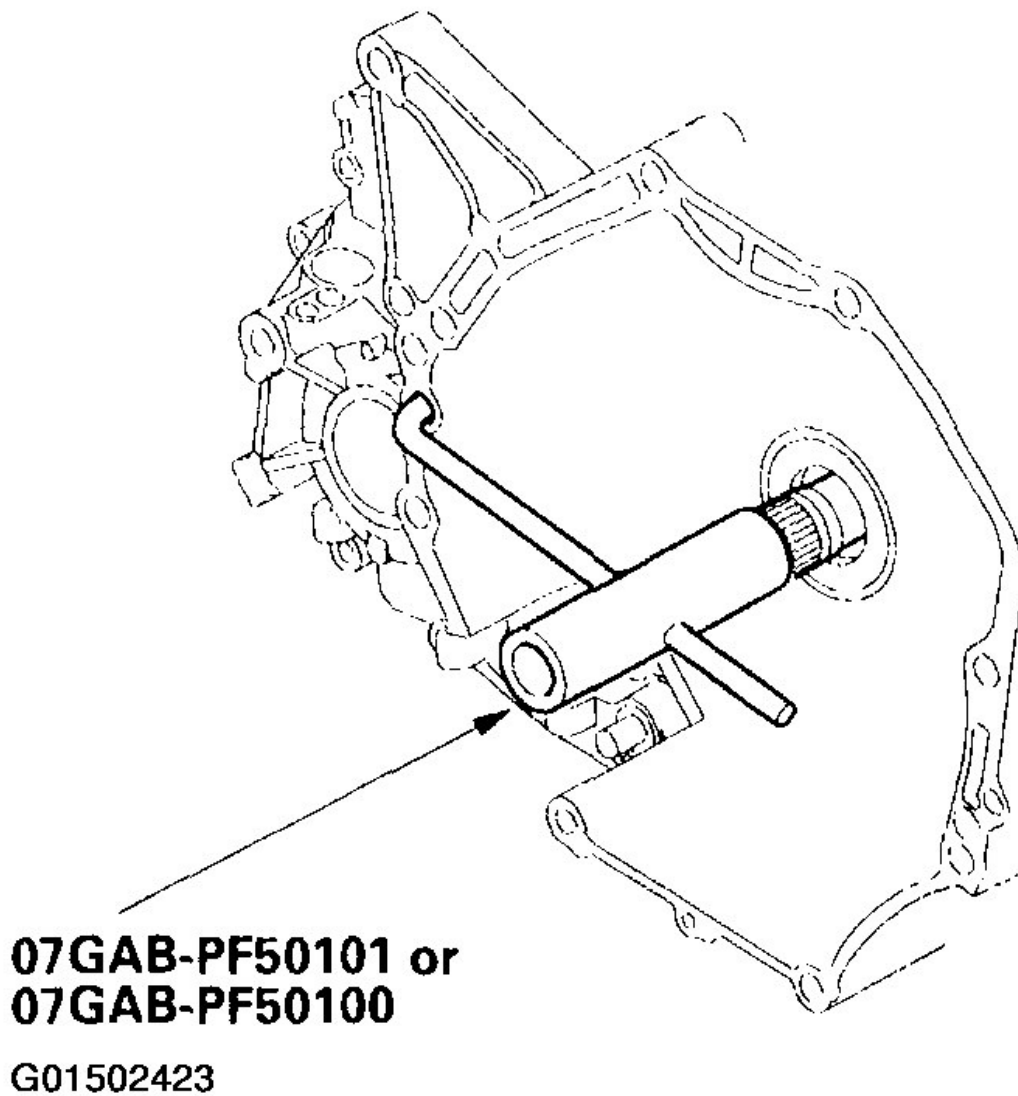


Fig. 2: Slipping Special Tool Onto Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

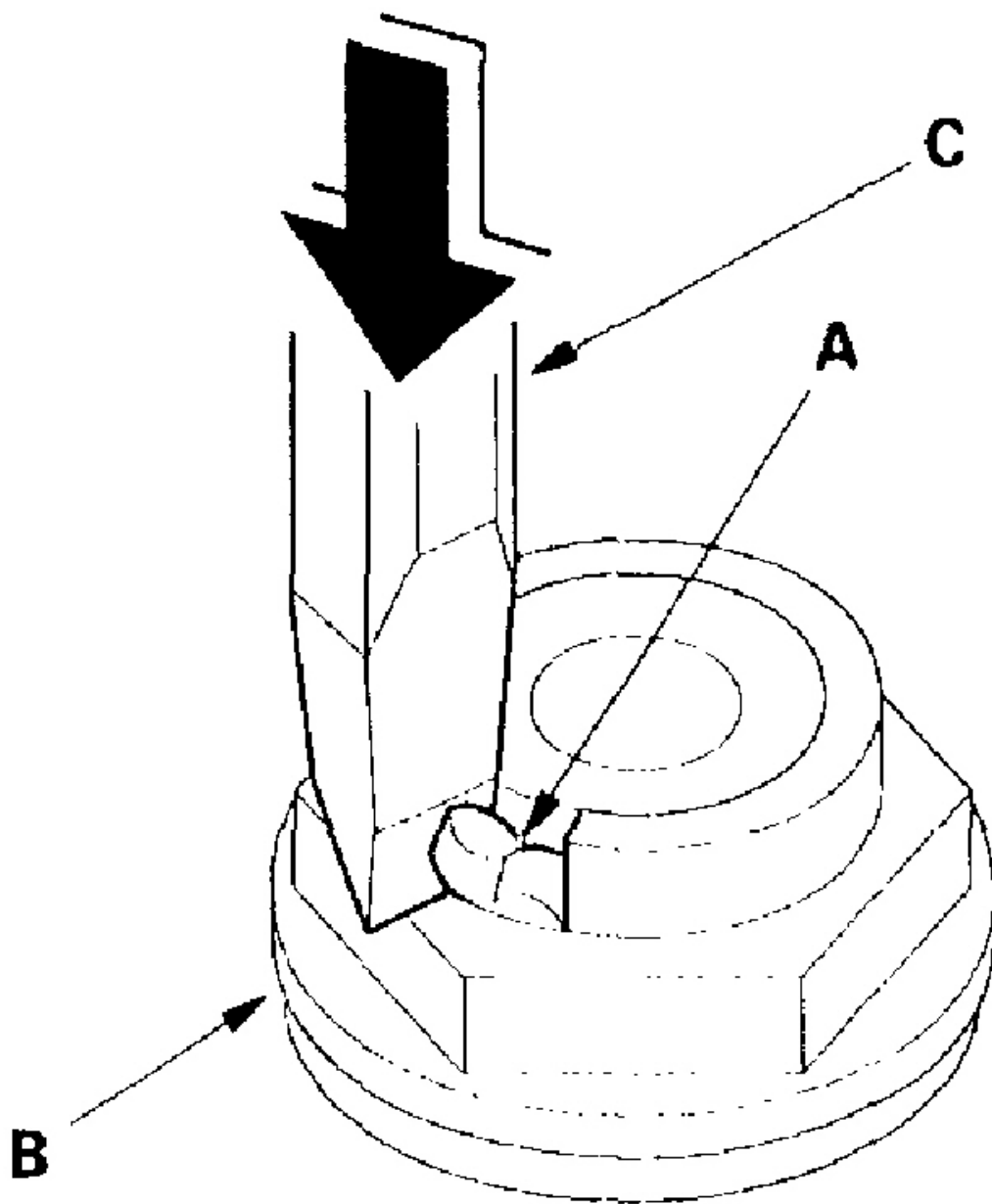
12. Engage the park pawl with the park gear.
13. Cut the lock tabs (A) of each shaft locknut (B) using a chisel (C). Then remove the locknuts and conical spring washers from each shaft.

NOTE:

- Countershaft and secondary shaft locknuts have left-hand threads.
- Clean the old locknut; they are used to install the press fit mainshaft 3rd gear, secondary shaft idler gear, park gear, and 3rd clutch

assembly on the countershaft.

- Keep all of the chiseled particles out of the transmission.

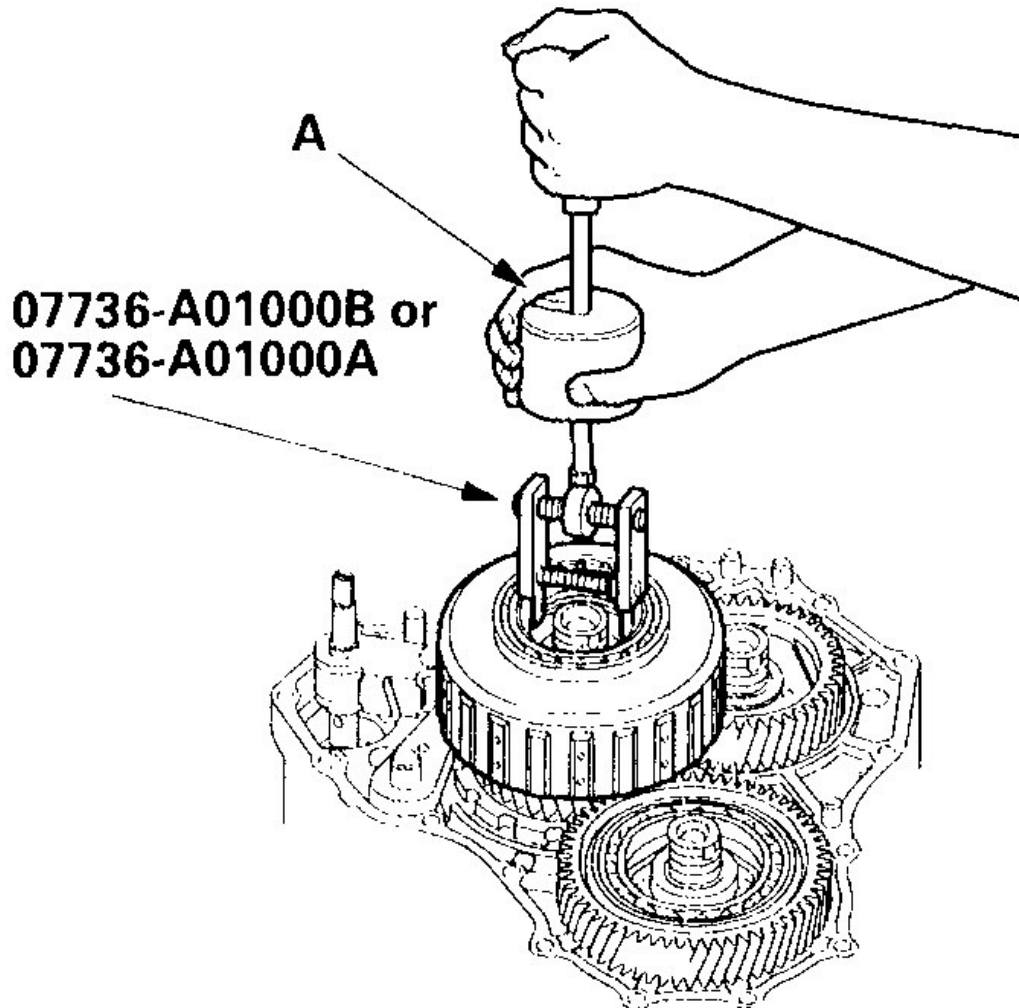


G01502424

Fig. 3: Cutting Lock Tabs Of Each Shaft Locknut Using A Chisel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the special tool from the mainshaft.
15. Remove the 3rd clutch assembly using the special tool and a commercially available 3/8-16" slide hammer (A).



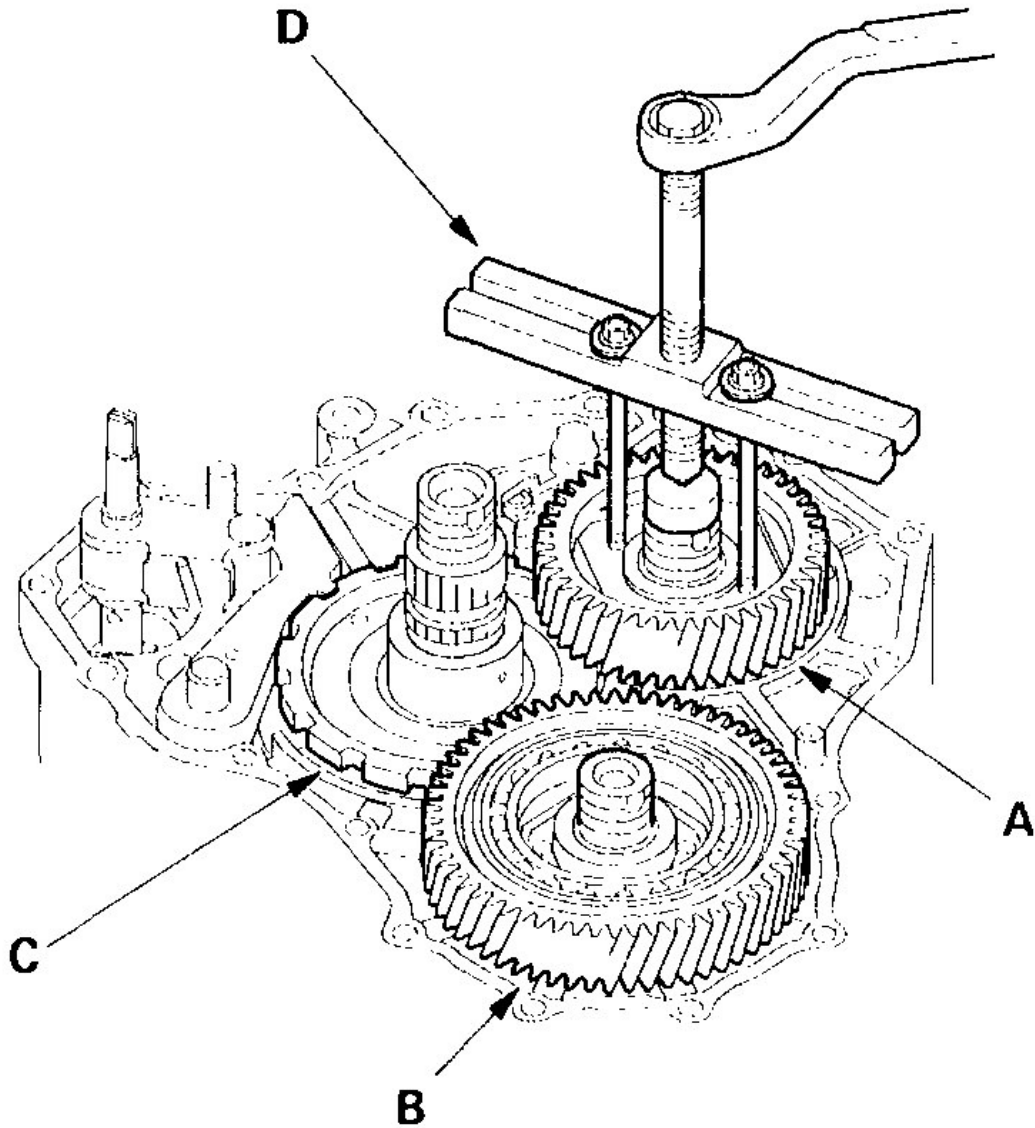
G01502425

Fig. 4: Removing 3rd Clutch Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the splined washer, thrust needle bearing, countershaft 3rd gear, needle bearing, and thrust needle bearing from the countershaft.

17. Remove the mainshaft 3rd gear (A), secondary shaft idler gear (B), and park gear (C) with a puller (D).



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Fig. 5: Removing Mainshaft 3rd Gear, Secondary Shaft Idler Gear & Park Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

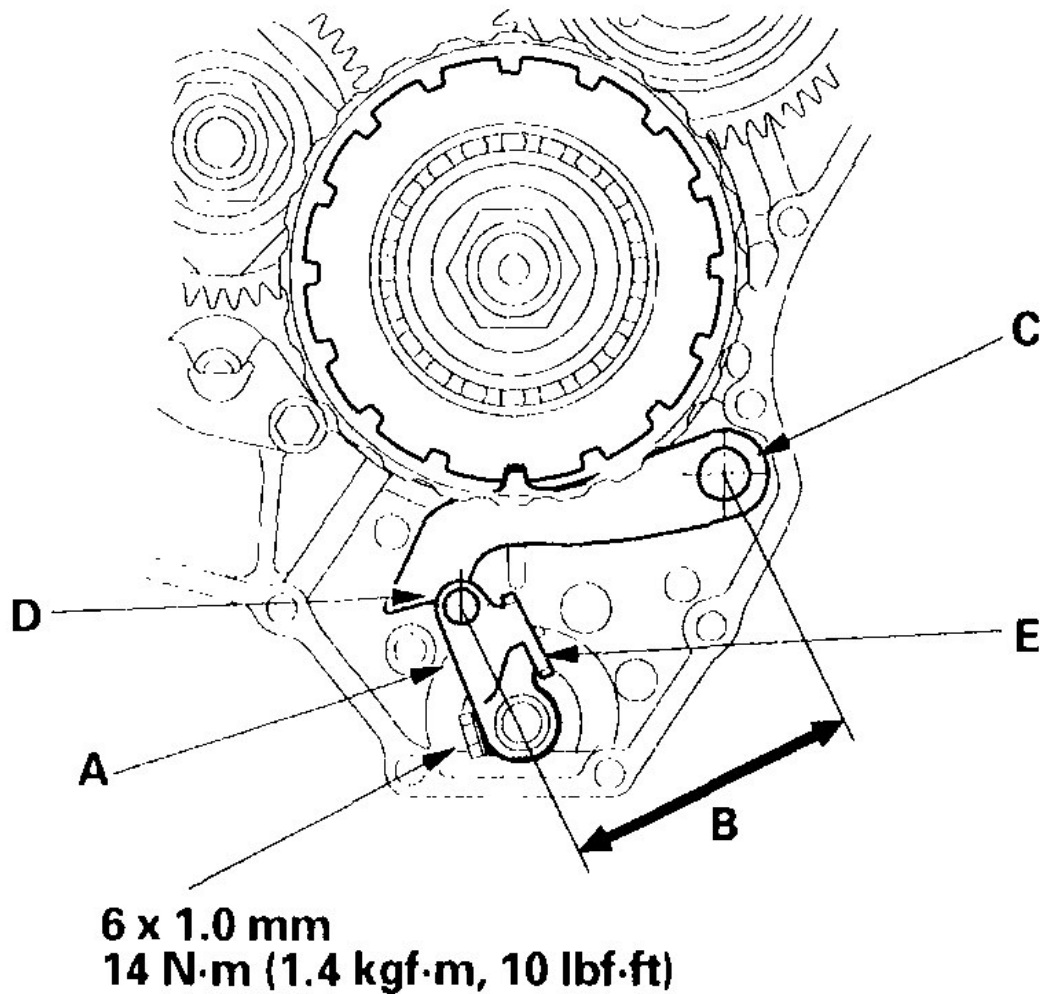
18. Remove the park pawl, park pawl spring, park pawl shaft, and stop shaft.
19. Remove the park lever from the control shaft.
20. Remove A/T clutch pressure control solenoid valves A and B.

PARK LEVER STOP INSPECTION & ADJUSTMENT

1. Set the park lever (A) in the P position.
2. Measure the distance (B) between the park pawl shaft (C) and the park lever roller pin (D). See **Fig. 6**.

Standard: 84.6-85.6 mm (3.33-3.37 in.)

3. If the measurement is out of tolerance, select and install the appropriate park lever stop (E) from the table. See **Fig. 7** and **Fig. 8**.



G01502427

Fig. 6: Exploded View Of Park Lever Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

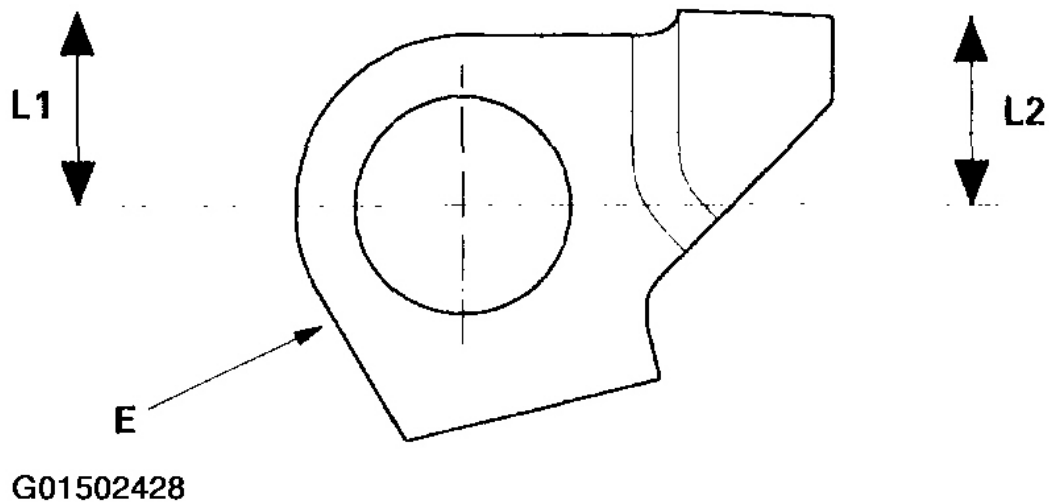


Fig. 7: Detailed View Of Park Lever Stop
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mark	Part Number	L1	L2
1	24537-PA9-003	11.00 mm (0.433 in.)	11.00 mm (0.433 in.)
2	24538-PA9-003	10.80 mm (0.425 in.)	10.65 mm (0.419 in.)
3	24539-PA9-003	10.60 mm (0.417 in.)	10.30 mm (0.406 in.)

G01502429

Fig. 8: Selecting Appropriate Park Lever Stop
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

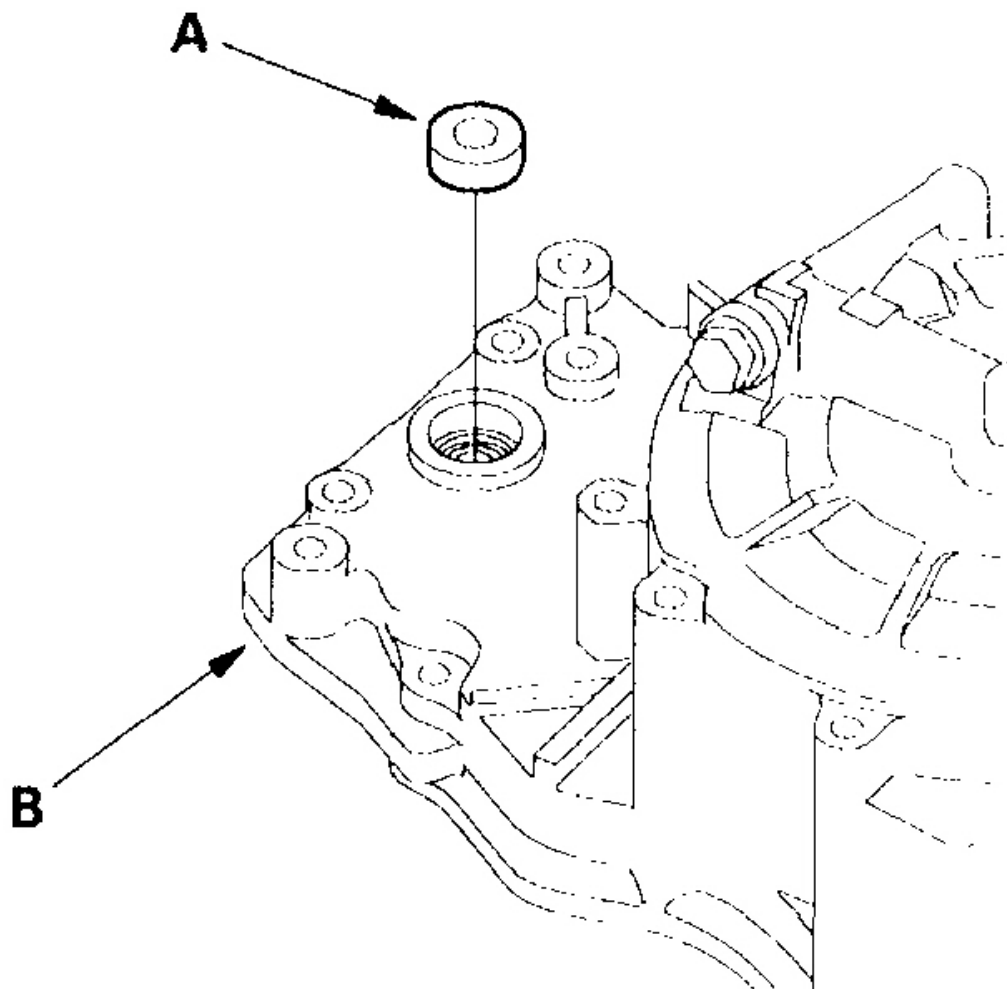
- After replacing the park lever stop, make sure the distance is within tolerance.

CONTROL SHAFT OIL SEAL REPLACEMENT

Special Tools Required:

- Driver 07749-0010000.
- Attachment, 22 x 24 mm 07746-0010800.

1. Remove the oil seal (A) from the end cover (B).



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Fig. 9: Removing Oil Seal From End Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new oil seal flush to the end cover with the special tools.

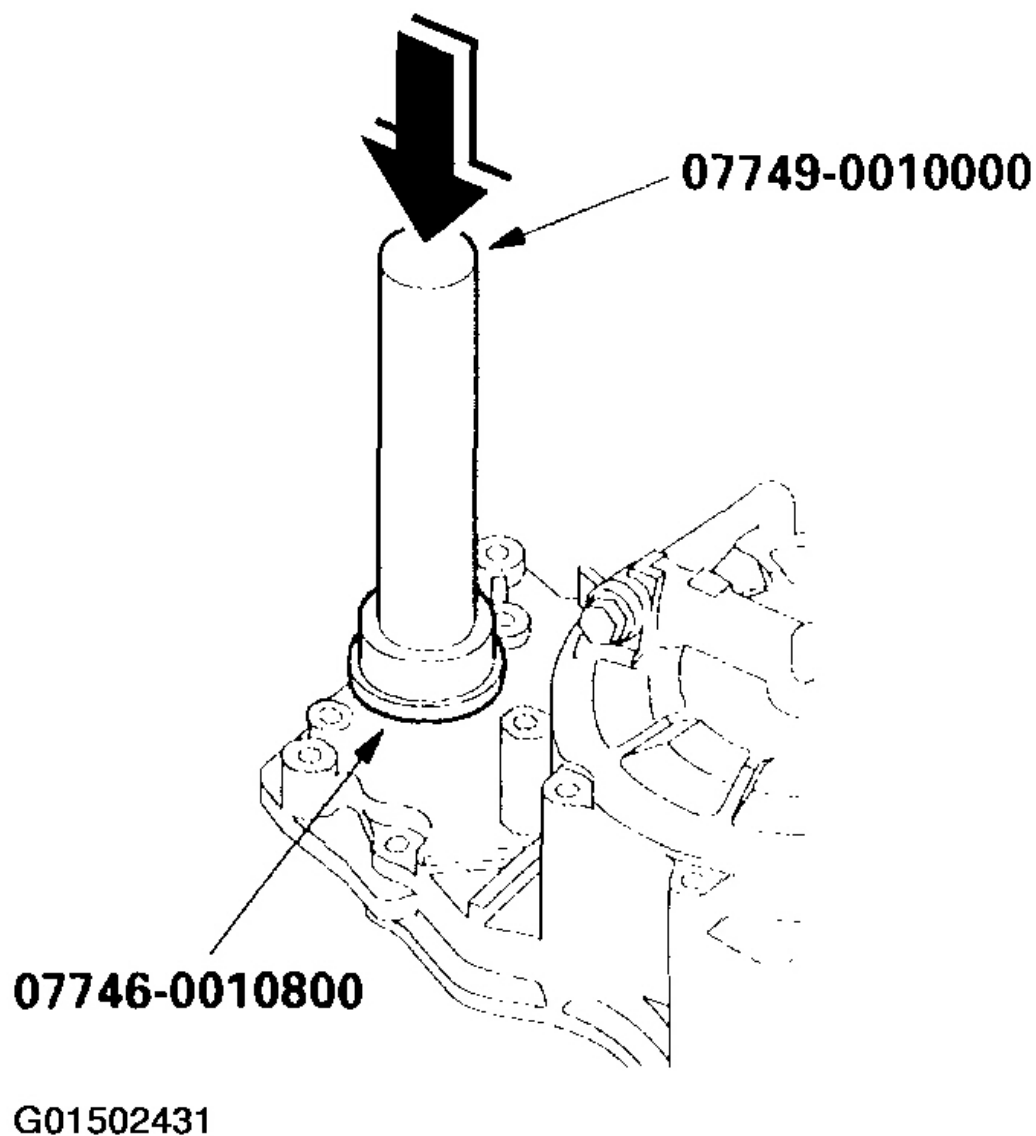


Fig. 10: Installing New Oil Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONTROL SHAFT BEARING REPLACEMENT

Special Tools Required:

- Driver 07749-0010000.
- Attachment, 22 x 24 mm 07746-0010800.

1. Remove the oil seal from the end cover, then remove the bearing.

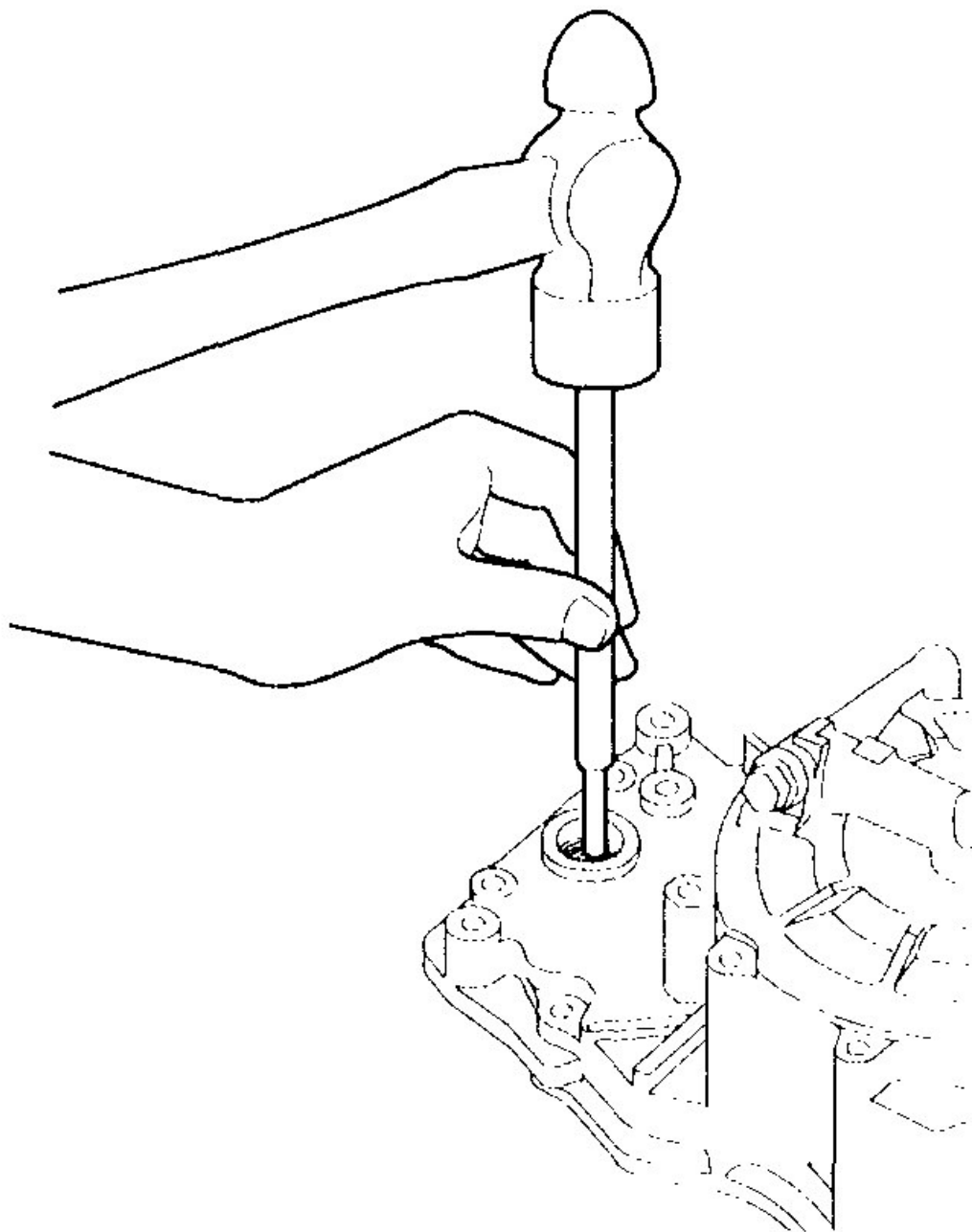
**G01502432**

Fig. 11: Removing Oil Seal & Bearing From End Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing flush to the end cover with the special tools.

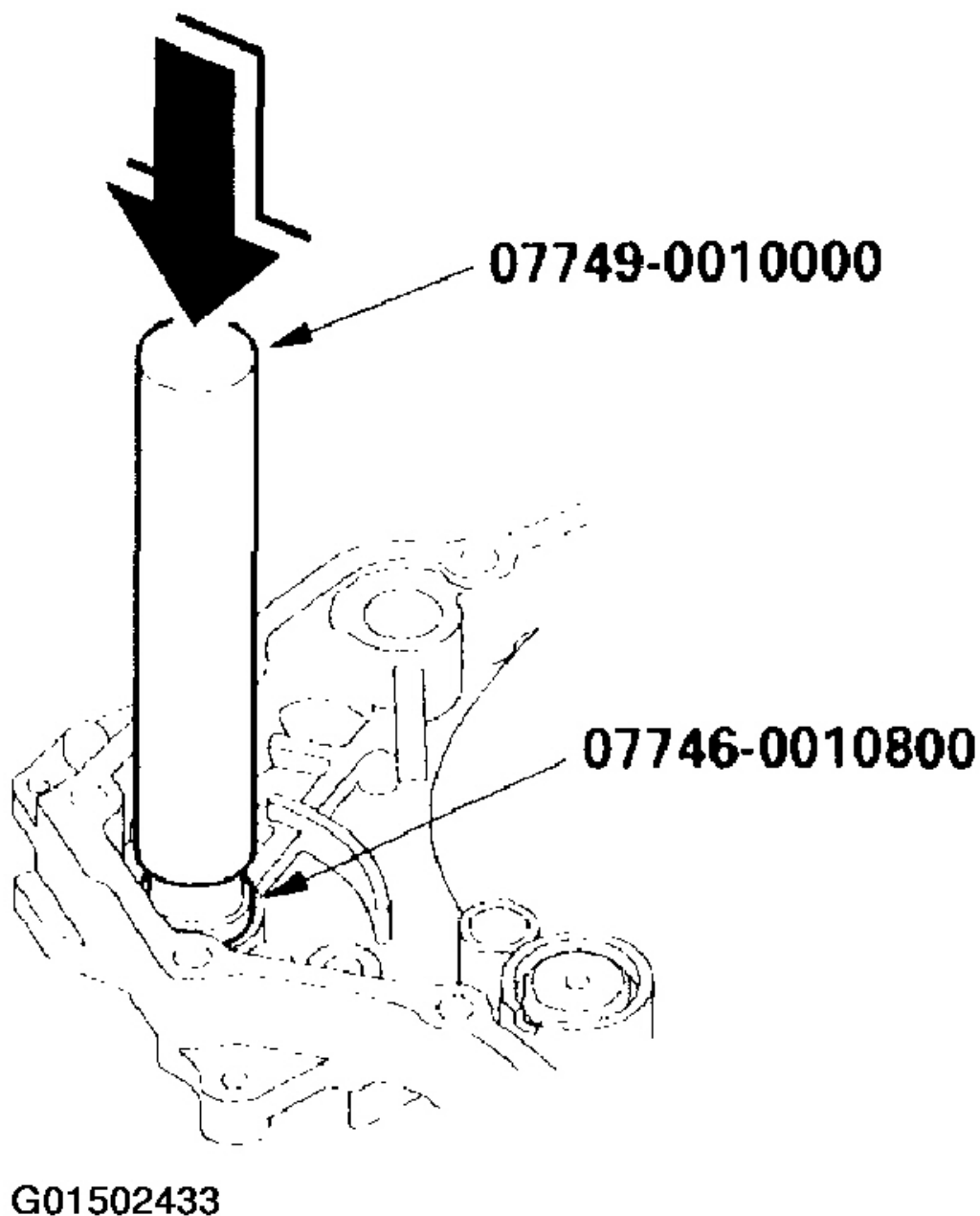
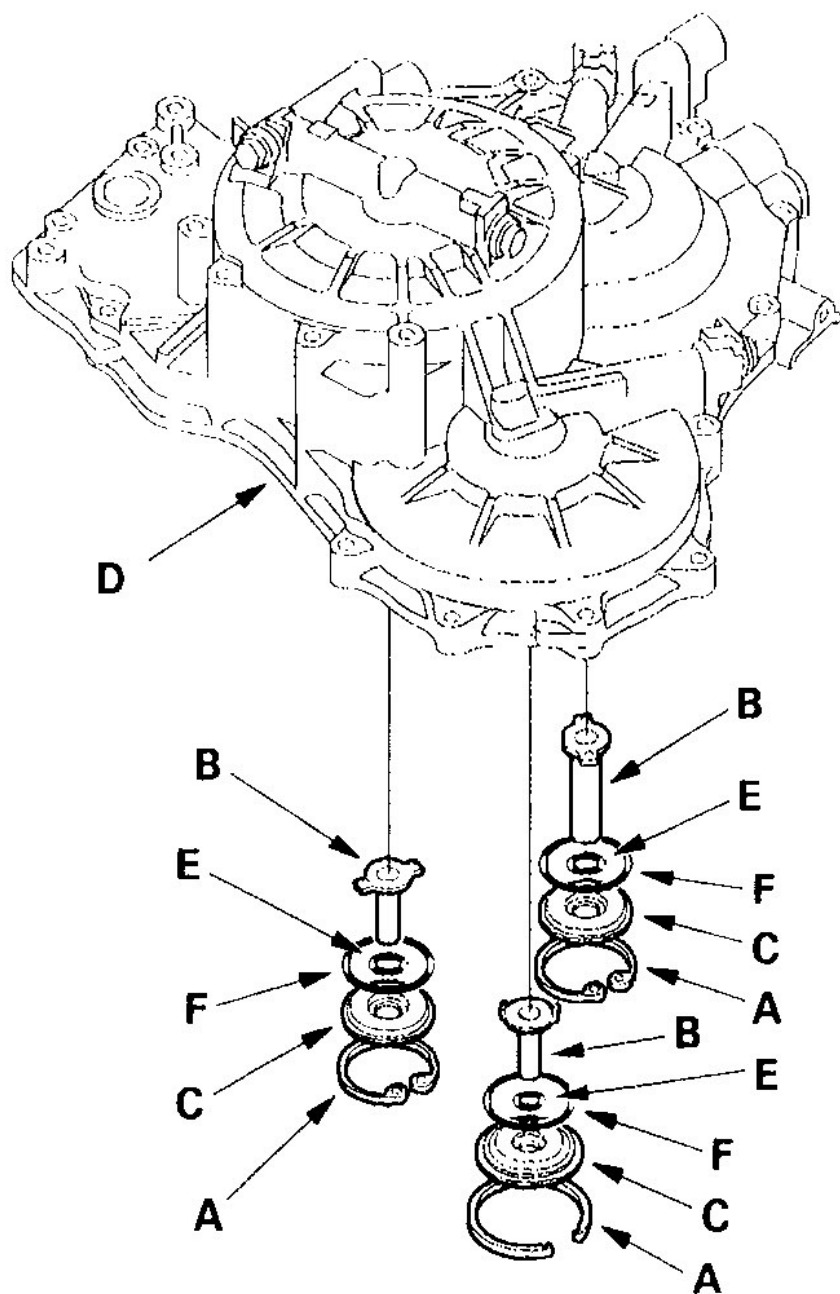


Fig. 12: Installing New Control Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal.

ATF FEED PIPE REPLACEMENT

1. Remove the snap rings (A), ATF feed pipes (B) and feed pipe flanges (C) from the end cover (D).



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Fig. 13: Exploded View Of ATF Feed Pipes At End Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

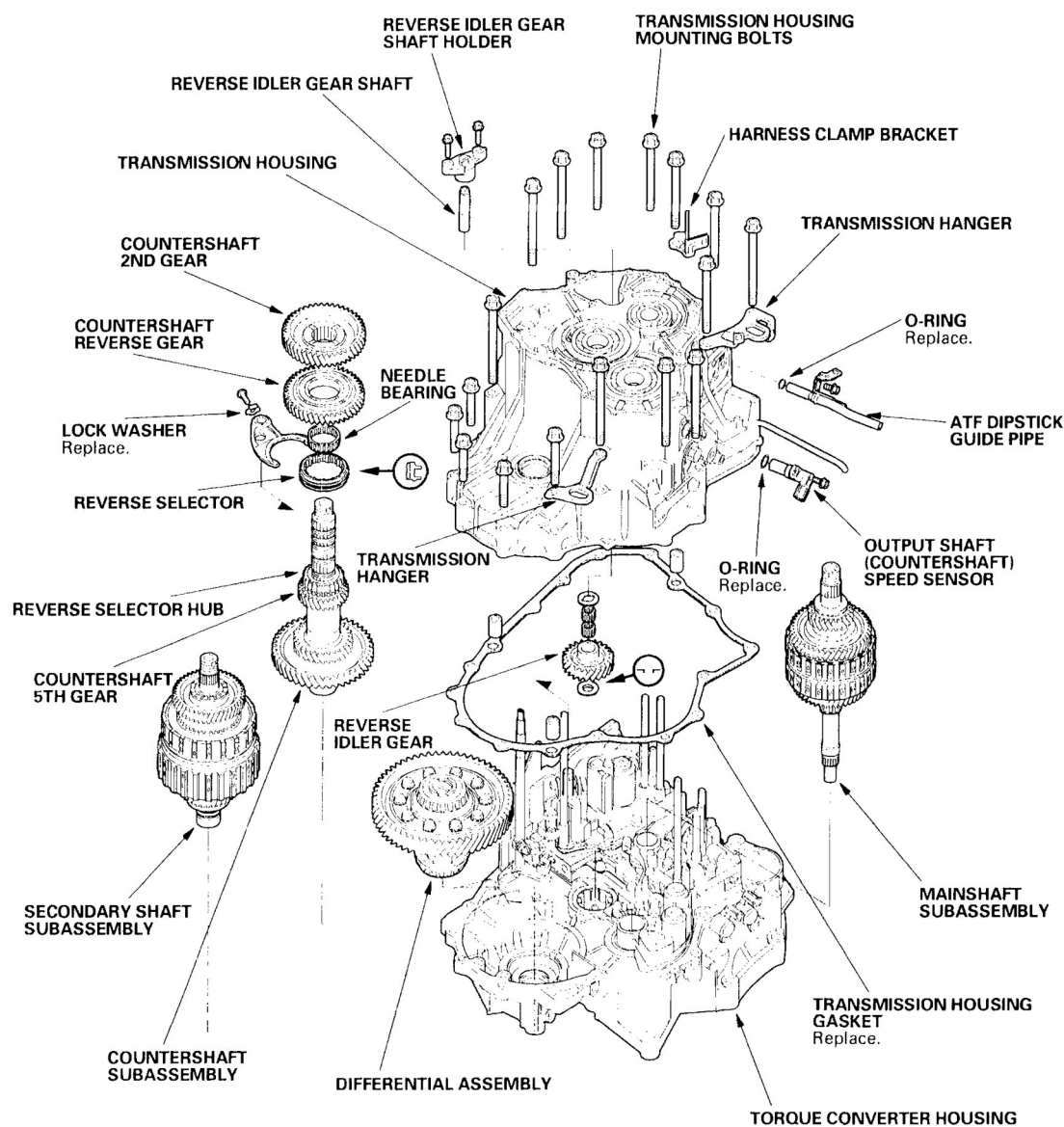
2. Install the new O-ring (E) over the ATF feed pipe.
3. Install ATF feed pipe in the end cover with aligning the feed pipe tabs with the indentations in the end

cover.

4. Install the new O-ring (F) in the end cover, then install the feed pipe flange over the ATF feed pipe and O-rings.
5. Secure the ATF feed pipe and feed pipe flange with the snap ring.

TRANSMISSION HOUSING

HOUSING & SHAFT ASSEMBLY REMOVAL



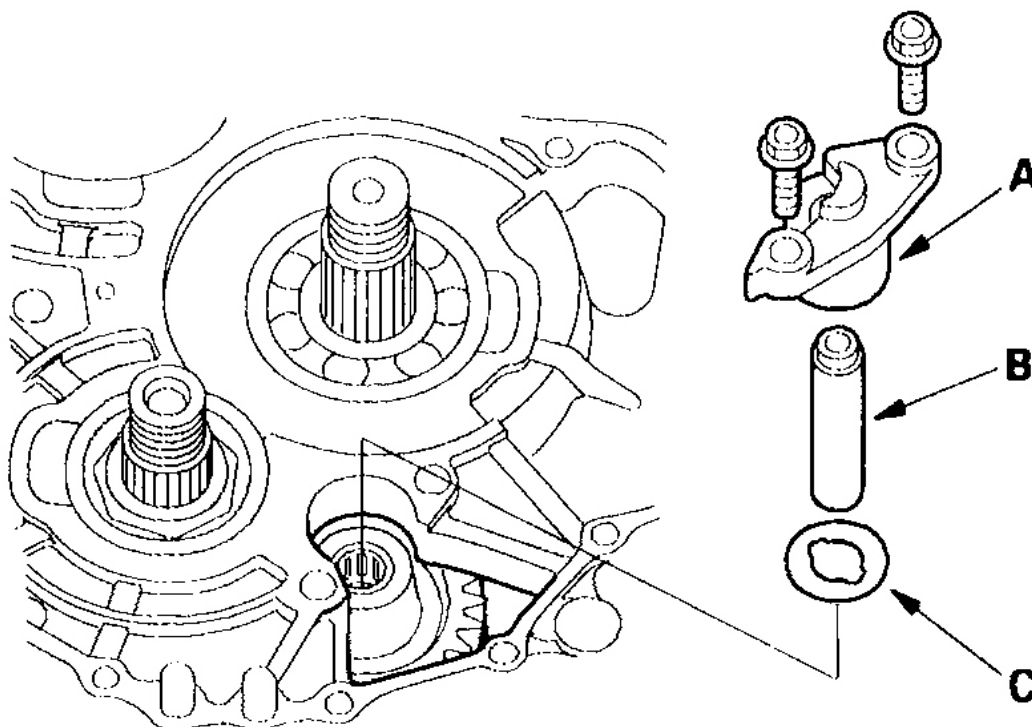
G01502435

Fig. 14: Exploded View Of Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required: Housing puller 07HAC-PK40102.

NOTE: Refer to Fig. 14 as needed during the following procedure.

1. Remove the ATF dipstick guide pipe.
2. Remove the two bolts securing the reverse idler gear shaft holder, then remove the reverse idler gear shaft holder (A), shaft (B), and washer (C).

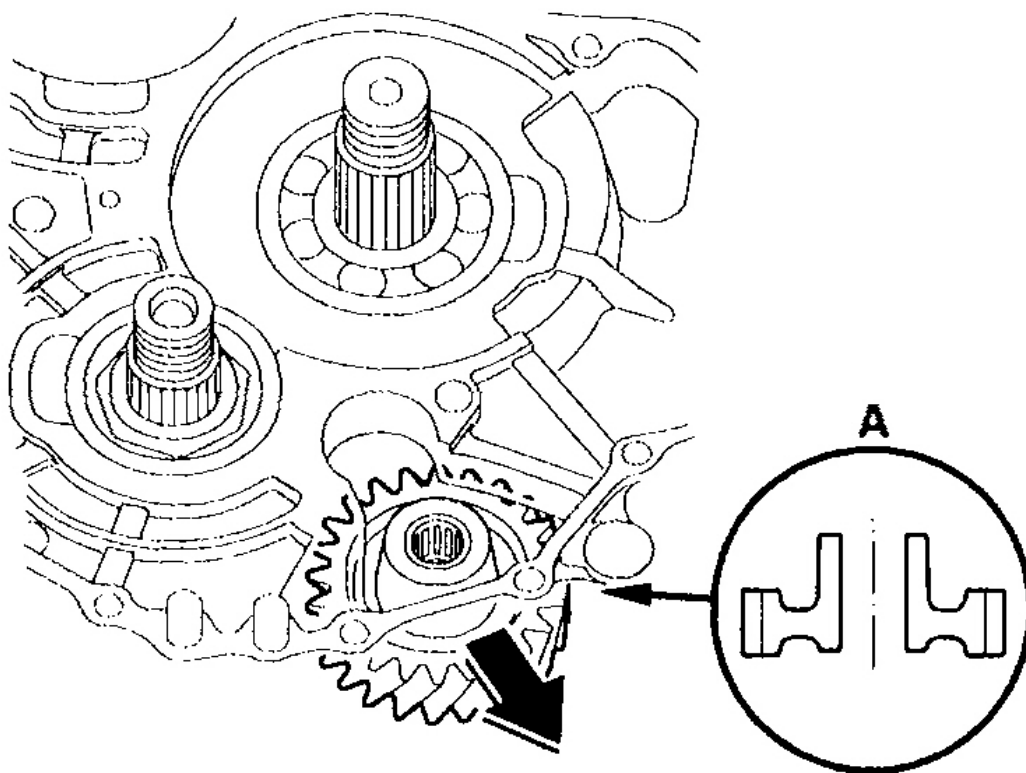


G01502436

Fig. 15: Exploded View Of Reverse Idler Gear Shaft Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the transmission housing mounting bolts, transmission hangers, and harness clamp bracket.
4. Move the reverse idler gear (A) to disengage it from the mainshaft and countershaft reverse gears.

NOTE: The transmission housing will not separate from the torque converter housing if the reverse idler gear is not moved.



G01502437

Fig. 16: Disengaging Reverse Idler Gear From Mainshaft & Countershaft Reverse Gears
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Align the spring pin (A) on the control shaft (B) with the transmission housing groove (C) by turning the control shaft.

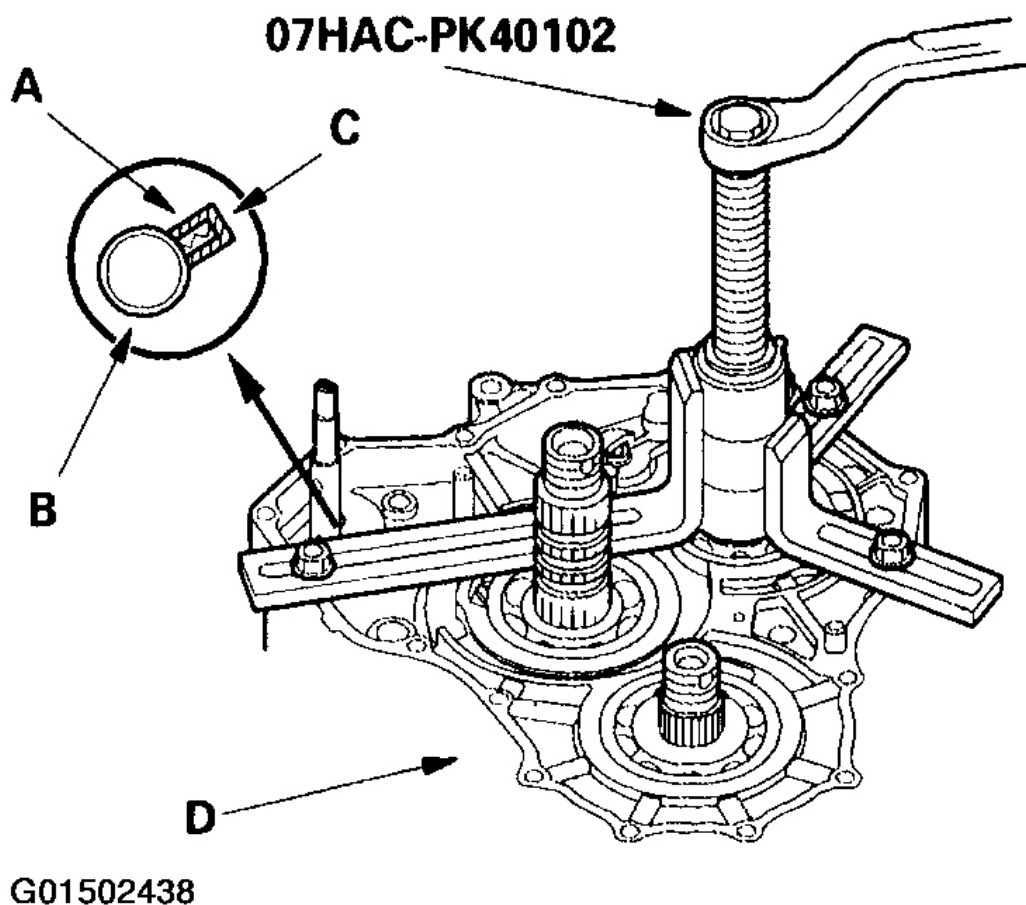


Fig. 17: Aligning Spring Pin On Control Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the special tool over the mainshaft, then remove the transmission housing (D).

NOTE: If the top arm of your housing puller is too short, replace it with Housing puller arm, 205 mm, T/N 07SAC-P0Z0101.

7. Remove the reverse idler gear, needle bearings, and thrust washer from the transmission housing.
8. Remove the countershaft 2nd gear, then remove the countershaft reverse gear and the needle bearing.
9. Remove the lock bolt securing the shift fork, then remove the shift fork with the reverse selector.

If the reverse selector hub is not press-fitted, remove the reverse selector hub, countershaft 5th gear, and needle bearing from the countershaft.

10. Remove the secondary shaft subassembly. If the reverse selector hub is press-fitted, remove the secondary

shaft subassembly, countershaft subassembly and mainshaft subassembly together.

11. Remove the countershaft subassembly.
12. Remove the mainshaft subassembly.
13. Remove the differential assembly.
14. Remove the output shaft (countershaft) speed sensor if necessary.

BEARING REMOVAL & INSTALLATION

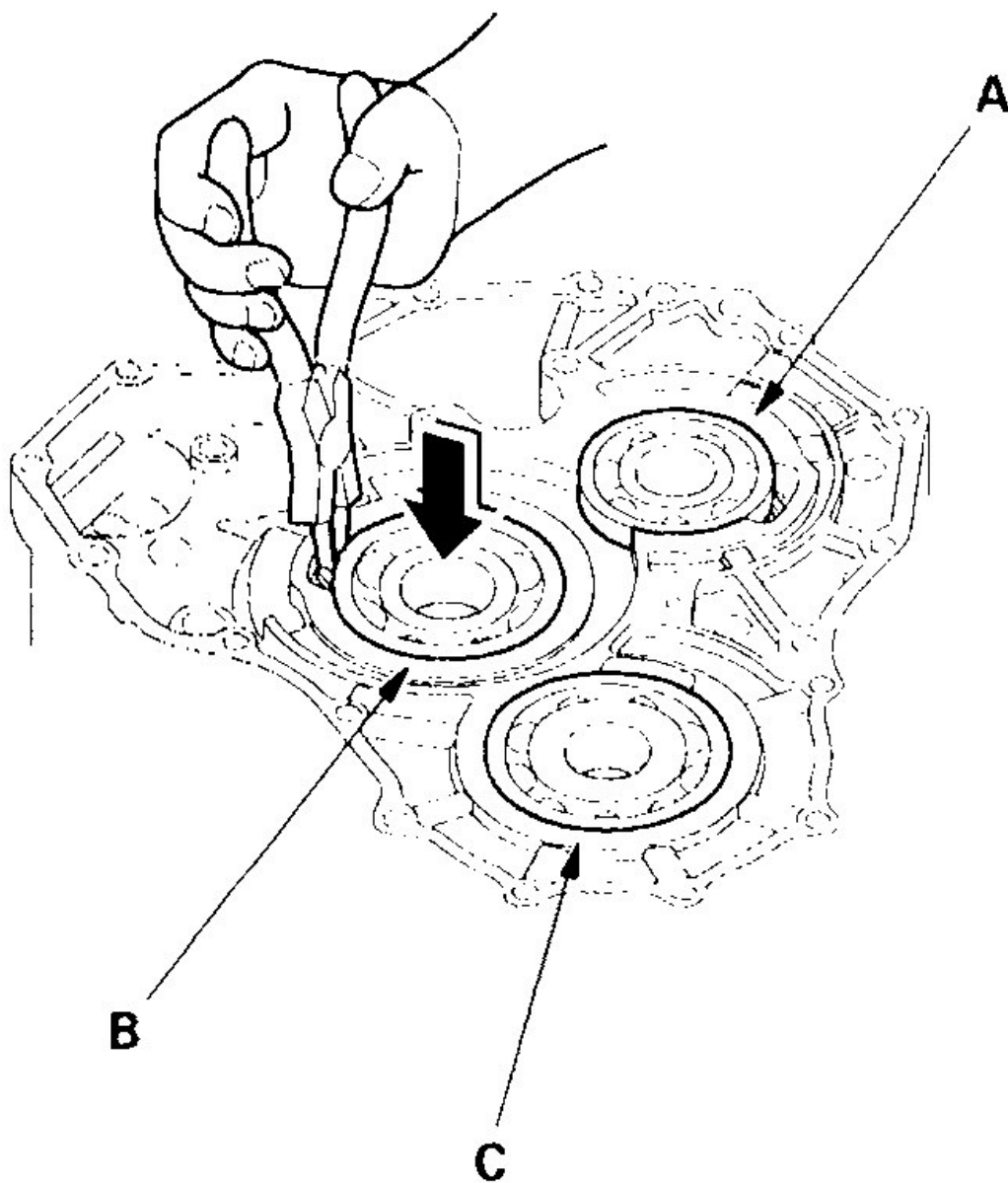
Special Tools Required:

- Driver 07749-0010000.
- Seal driver attachment 07GAD-PG40101 or 07GAD-PG40100.
- Attachment, 62 x 68 mm 07746-0010500.
- Attachment, 72 x 75 mm 07746-0010600.

NOTE: Coat all parts with ATF before assembly.

1. To remove the mainshaft bearing (A), countershaft bearing (B), and secondary shaft bearing (C) from the transmission housing, expand each snap ring with the snap ring pliers, then push the bearing out.

NOTE: Do not remove the snap rings unless it's necessary to clean the grooves in the housing.



G01502439

Fig. 18: Locating Snap Rings For Mainshaft Bearing, Countershaft Bearing & Secondary Shaft Bearing Removal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the bearings in the direction shown.
3. Expand each snap ring with the snap ring pliers, and insert the bearing part-way into the housing.

4. Release the pliers, then push the bearing down into the housing until the snap ring snaps in place around it.

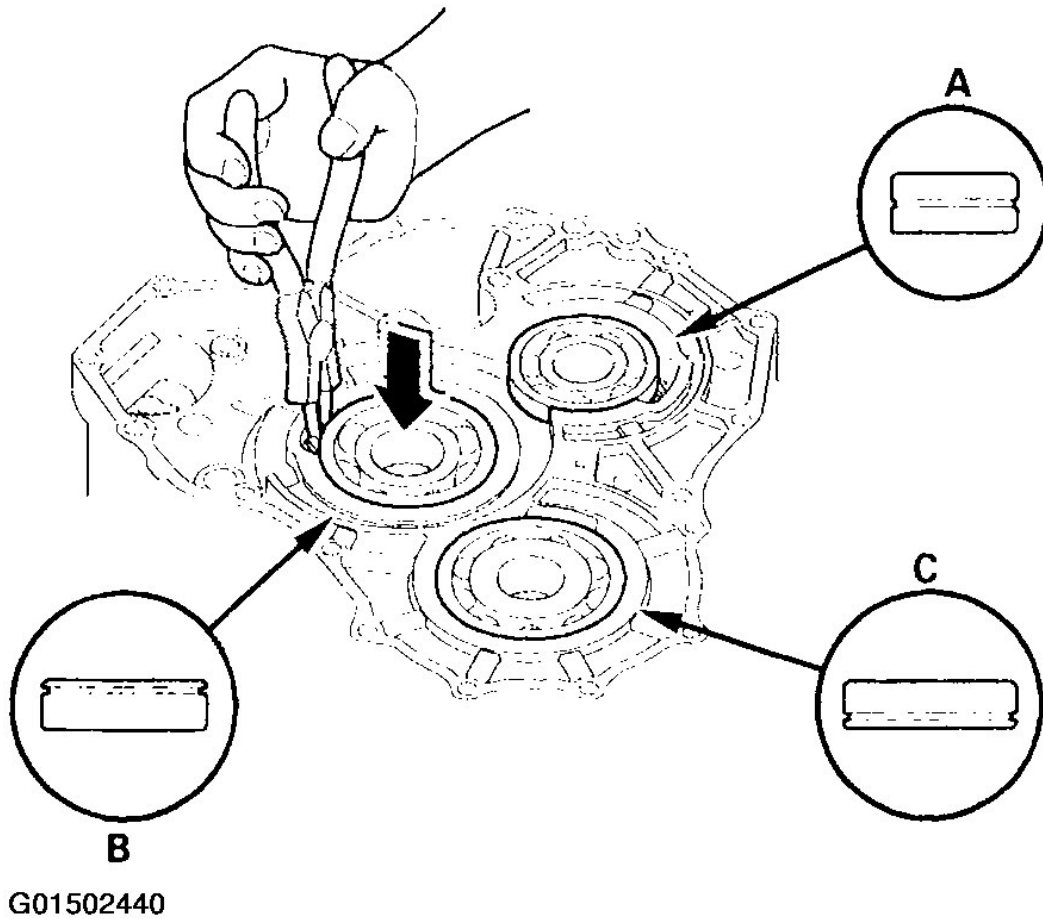
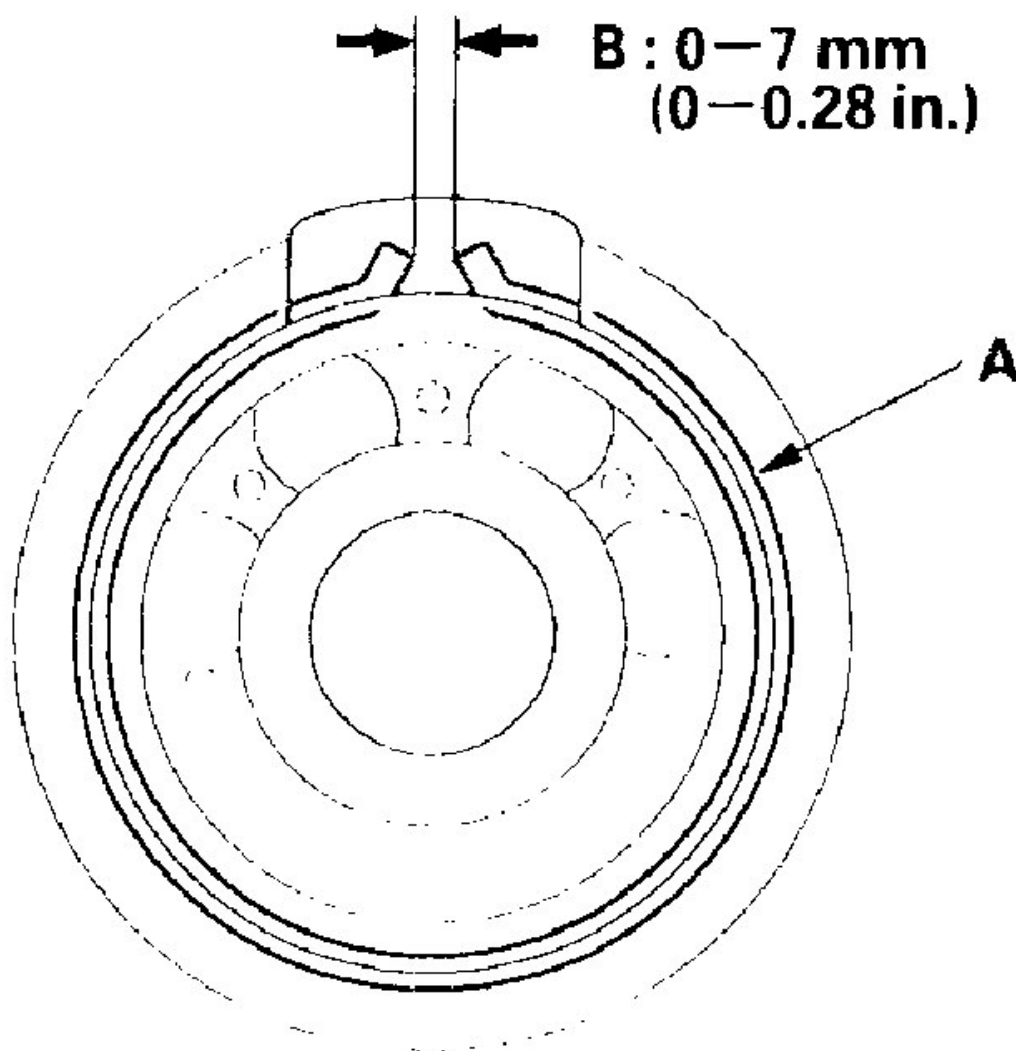


Fig. 19: Installing Mainshaft, Countershaft & Secondary Shaft Bearings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. After installing the bearings verify the following:
 - The snap rings (A) are seated in the bearing and housing grooves.
 - The ring end gaps (B) are correct.

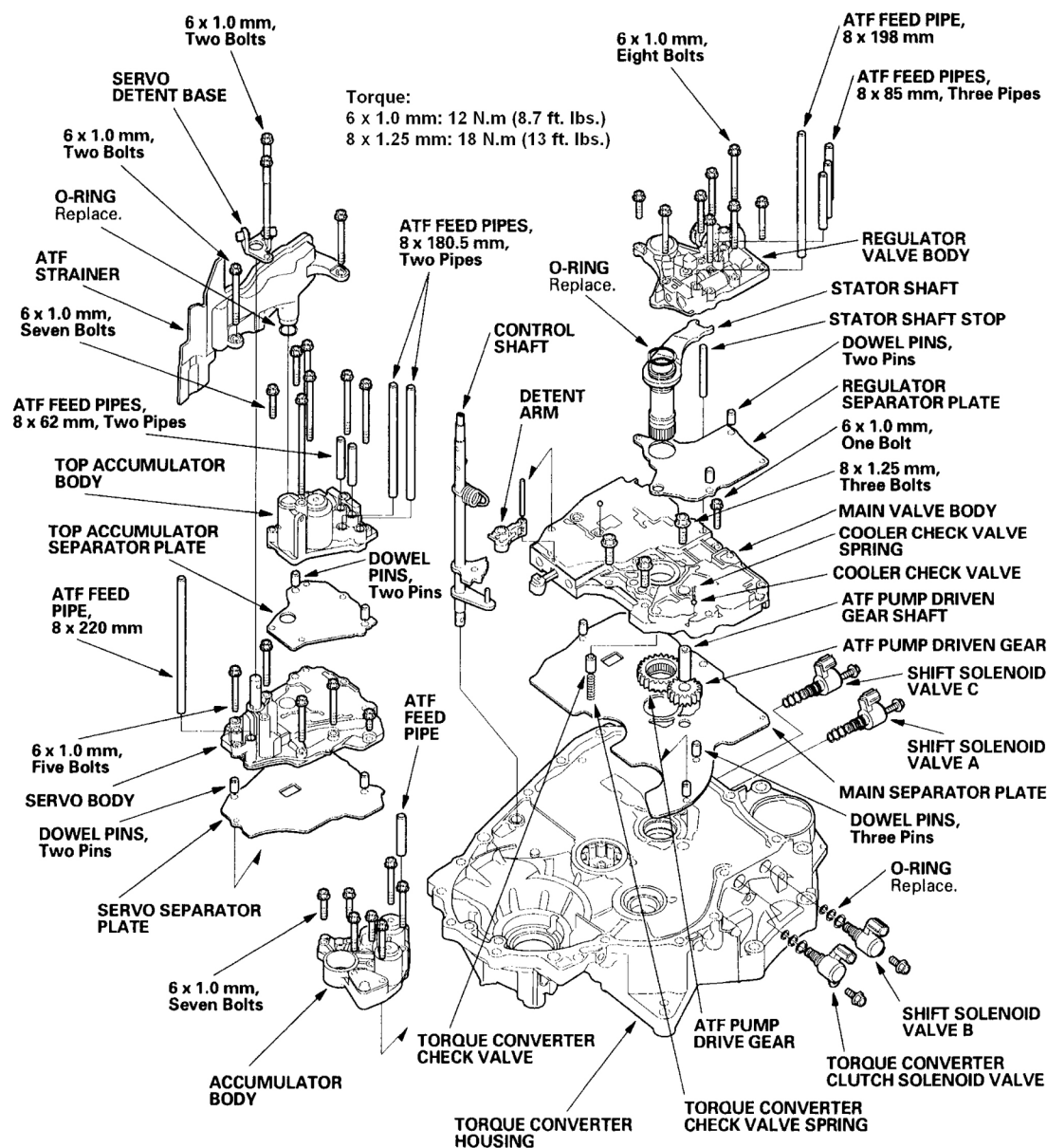


G01502441

Fig. 20: Ensuring Correct Snap Ring End Gaps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE BODY

VALVE BODY & ATF STRAINER REMOVAL



G01502442

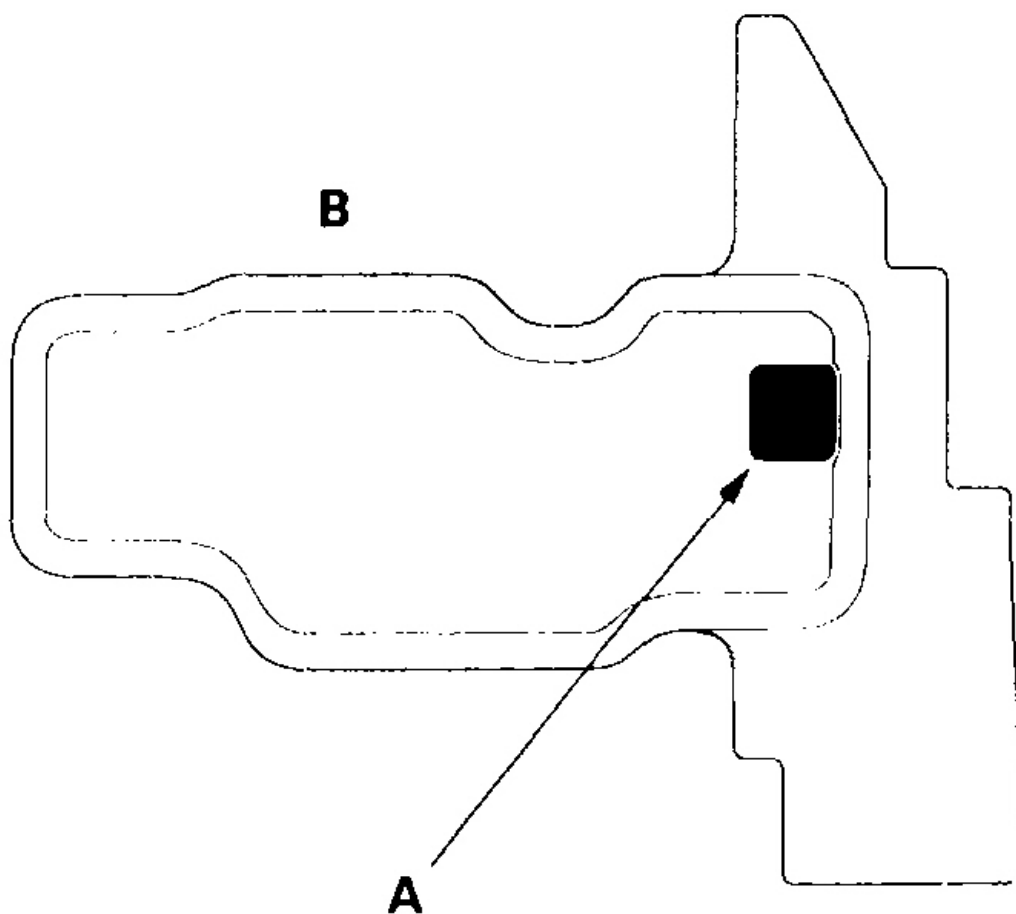
Fig. 21: Exploded View Of Valve Body With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to **Fig. 21** as needed during the following procedure.

1. Remove the ATF feed pipes from the regulator valve body, servo body, top accumulator body, and accumulator body.
2. Remove the servo detent base (two bolts).
3. Remove the ATF strainer (two bolts).
4. Remove the top accumulator body (seven bolts), then remove the accumulator body separator plate and

dowel pins (2).

5. Remove the servo body (five bolts), then remove servo separator plate and dowel pins (2).
6. Remove the regulator valve body (eight bolts).
7. Remove the stator shaft and stator shaft stop.
8. Remove the regulator separator plate and dowel pins (2).
9. Remove the accumulator body (seven bolts).
10. Unhook the detent spring from the detent arm, then remove the detent arm shaft, detent arm, and control shaft.
11. Remove the cooler check valve spring and cooler check valve (ball).
12. Remove the main valve body (four bolts).
13. Remove the torque converter check valve and spring.
14. Remove the ATF pump driven gear shaft, then remove the ATF pump gears.
15. Remove the main separator plate and dowel pins (3).
16. Clean the inlet opening (A) of the ATF strainer (B) thoroughly with compressed air, then check that it is in good condition and that the inlet opening is not clogged.



G01502443

Fig. 22: Locating Inlet Opening Of ATF Strainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Test the ATF strainer by pouring clean ATF through the inlet opening, and replace it if it is clogged or damaged.

VALVE BODY REPAIR

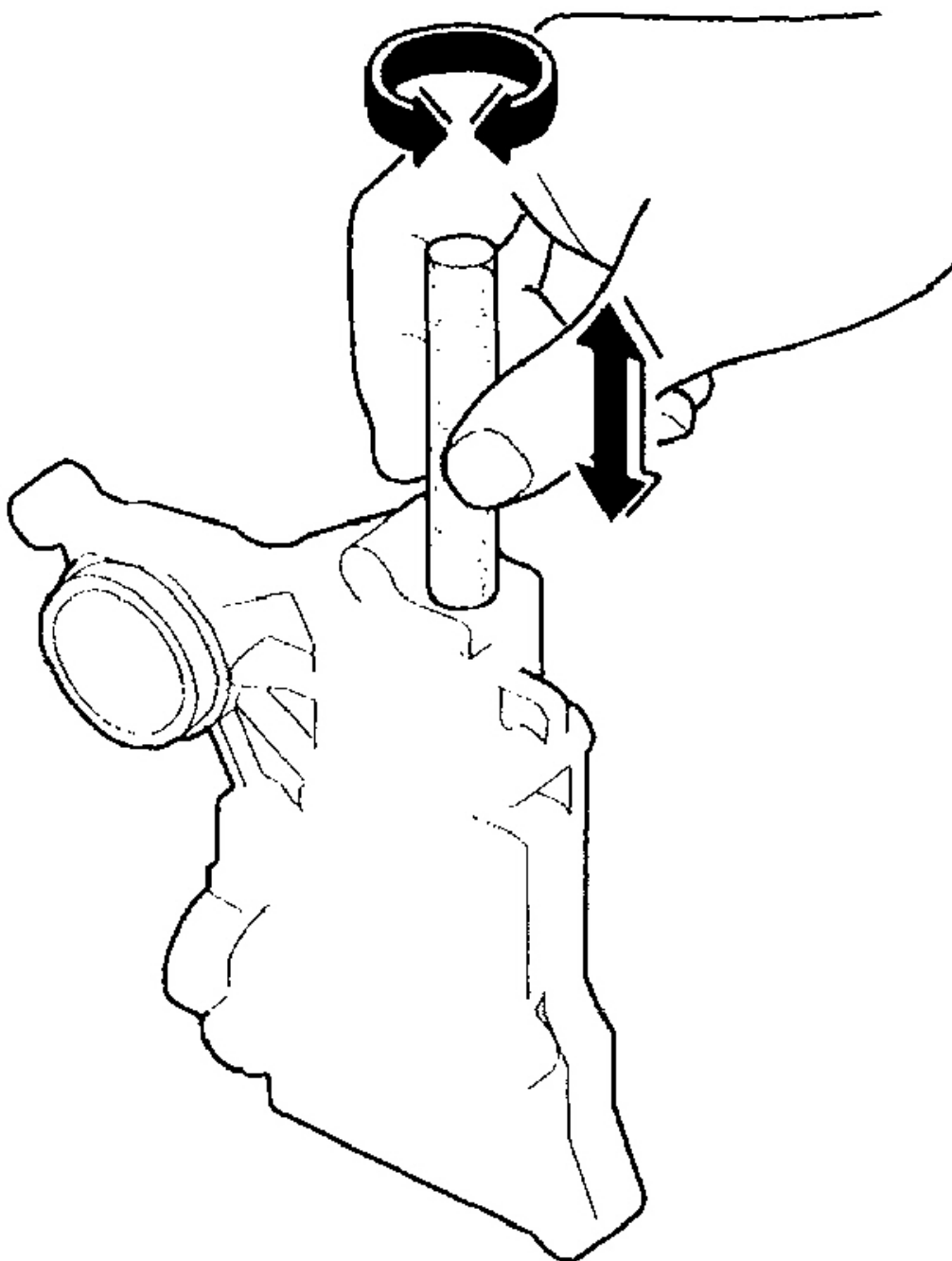
NOTE: This repair is only necessary if one or more of the valves in a valve body do not slide smoothly in their bores. Use this procedure to free the valves.

1. Soak a sheet of #600 abrasive paper in ATF for about 30 minutes.
2. Carefully tap the valve body so the sticking valve drops out of its bore. It may be necessary to use a small

screwdriver to pry the valve free. Be careful not to scratch the bore with the screwdriver.

3. Inspect the valve for any scuff marks. Use the ATF-soaked #600 paper to polish off any burrs that are on the valve, then wash the valve in solvent and dry it with compressed air.
4. Roll up half a sheet of ATF-soaked #600 paper and insert it in the valve bore of the sticking valve. Twist the paper slightly, so that it unrolls and fits the bore tightly, then polish the bore by twisting the paper as you push it in and out.

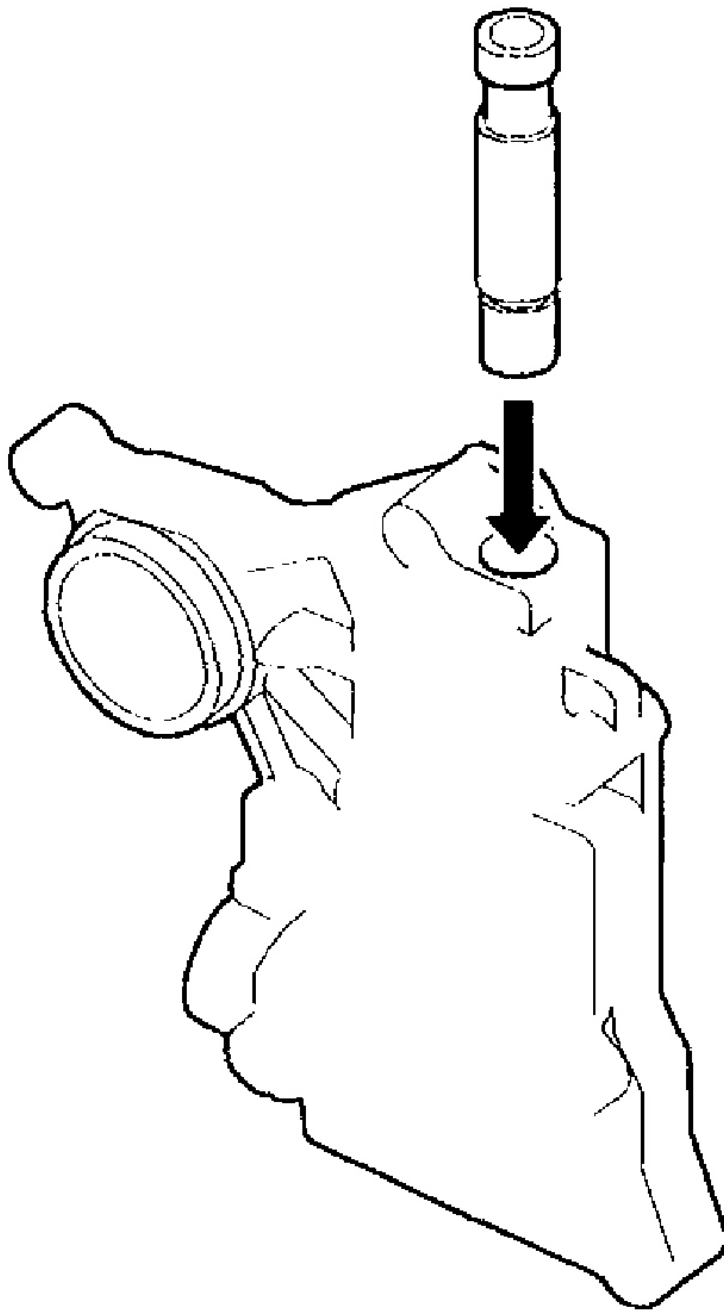
NOTE: **The valve body is aluminum and doesn't require much polishing to remove any burrs.**



G01502444

Fig. 23: Using ATF-Soaked #600 Paper To Polish Sticking Valve Bore
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the #600 paper. Thoroughly wash the entire valve body in solvent, then dry it with compressed air.
6. Coat the valve with ATF, then drop it into its bore. It should drop to the bottom of the bore under its own weight. If not, repeat steps 4 and 5, then retest. If the valve still sticks, replace the valve body.



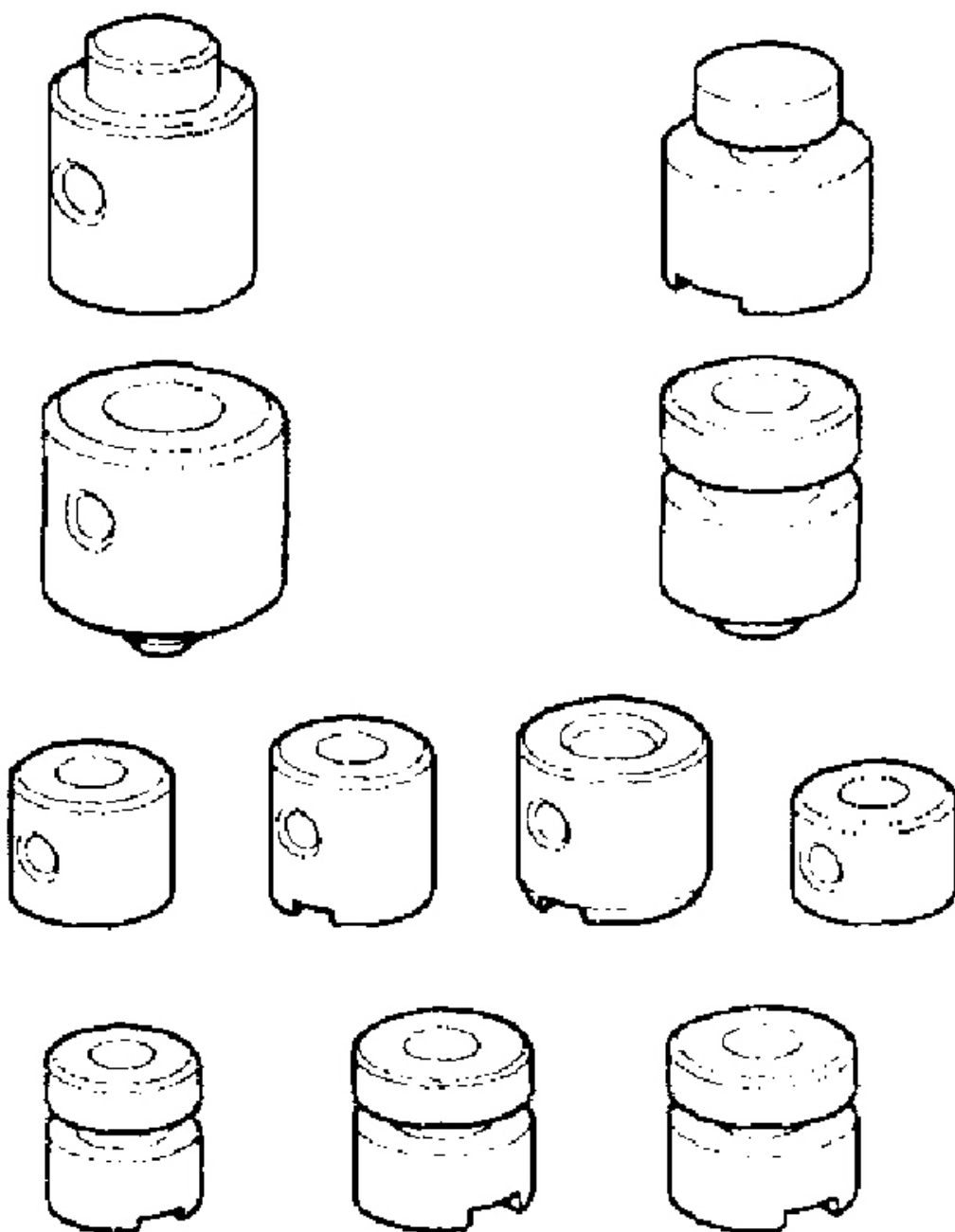
G01502445

Fig. 24: Dropping Valve Into Bore
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve, and thoroughly clean it and the valve body with solvent. Dry all parts with compressed air, then reassemble using ATF as a lubricant.

VALVE BODY VALVE INSTALLATION

1. Coat all parts with ATF before assembly.
2. Install the valves and springs in the sequence shown for the main valve body (see **MAIN VALVE BODY DISASSEMBLY, INSPECTION & REASSEMBLY**), regulator valve body (see **REGULATOR VALVE BODY DISASSEMBLY, INSPECTION & REASSEMBLY**), servo body (see **SERVO BODY DISASSEMBLY, INSPECTION & REASSEMBLY**), and top accumulator body (see **TOP ACCUMULATOR BODY DISASSEMBLY, INSPECTION & REASSEMBLY**). Refer to the following valve cap illustrations, and install each valve cap so the end shown facing up will be facing the outside of the valve body.

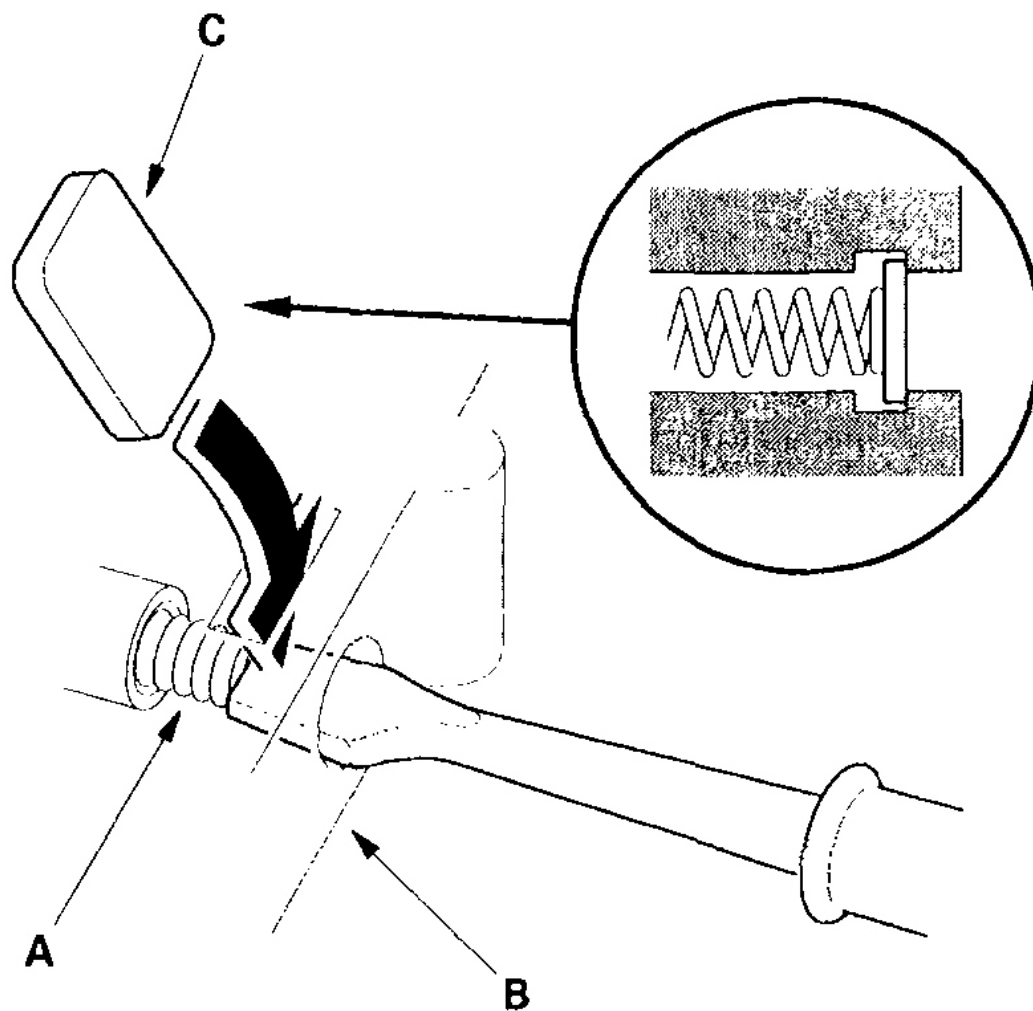


G01502446

Fig. 25: Valve Cap Illustration

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install all the springs and seats. Insert the spring (A) in the valve, then install the valve in the valve body (B). Push the spring in with a screwdriver, then install the spring seat (C).



G01502447

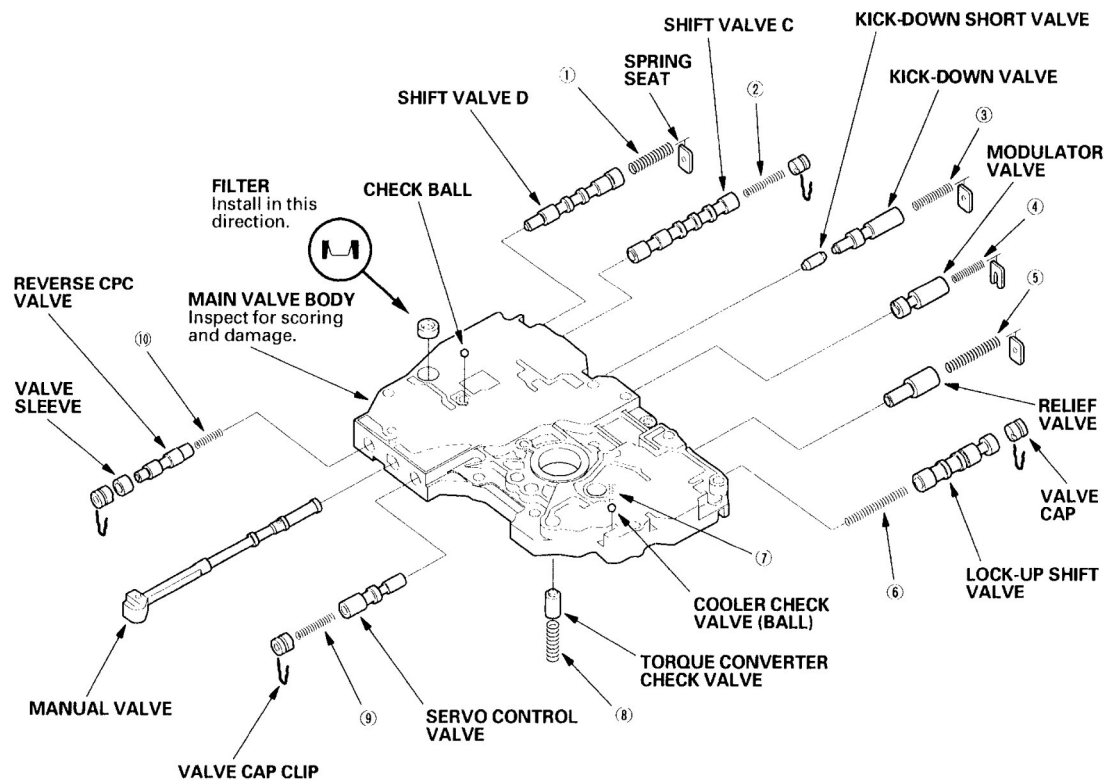
Fig. 26: Installing Springs & Seats

Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAIN VALVE BODY DISASSEMBLY, INSPECTION & REASSEMBLY

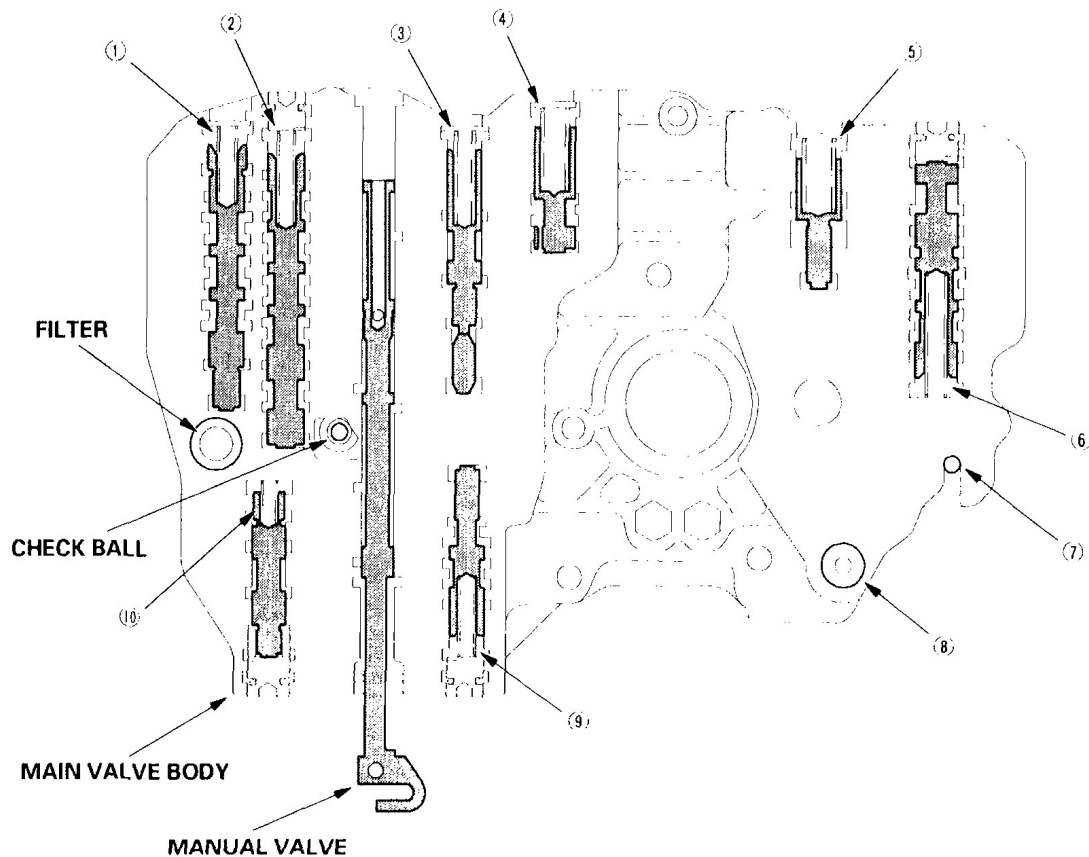
1. Clean all parts thoroughly in solvent or carburetor cleaner, and dry them with compressed air. Blow out all passages.
2. Do not use a magnet to remove the check ball, it may magnetize the ball.
3. Check all valves for free movement. If any fail to slide freely, see **VALVE BODY REPAIR**.

4. Replace the valve body as an assembly if any parts worn or damaged.
5. Coat all parts with ATF during assembly.
6. Install the filter in the direction shown.



G01502448

Fig. 27: Exploded View Of Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.



G01502449

Fig. 28: Sectional View Of Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

No.	Spring	Standard (New)-Unit: mm (in.)			No. of Coils
		Wire Dia.	O.D.	Free Length	
①	Shift valve D spring	0.7 (0.028)	6.6 (0.260)	33.7 (1.327)	11.6
②	Shift valve C spring	0.8 (0.031)	6.6 (0.260)	49.1 (1.933)	21.7
③	Kick-down valve spring	0.8 (0.031)	6.6 (0.260)	49.1 (1.933)	21.7
④	Modulator valve spring	1.6 (0.063)	10.4 (0.409)	33.5 (1.319)	9.8
⑤	Relief valve spring	1.2 (0.047)	11.1 (0.437)	39.0 (1.535)	9.9
⑥	Lock-up shift valve spring	0.9 (0.035)	7.6 (0.299)	63.0 (2.480)	22.4
⑦	Cooler check valve spring	0.6 (0.024)	5.8 (0.228)	14.5 (0.571)	6.8
⑧	Torque converter check valve spring	1.2 (0.047)	8.6 (0.339)	34.4 (1.354)	11.7
⑨	Servo control valve spring	0.9 (0.035)	6.4 (0.252)	32.5 (1.280)	17.5
⑩	Reverse CPC valve spring	0.7 (0.028)	6.1 (0.240)	17.8 (0.701)	7.9

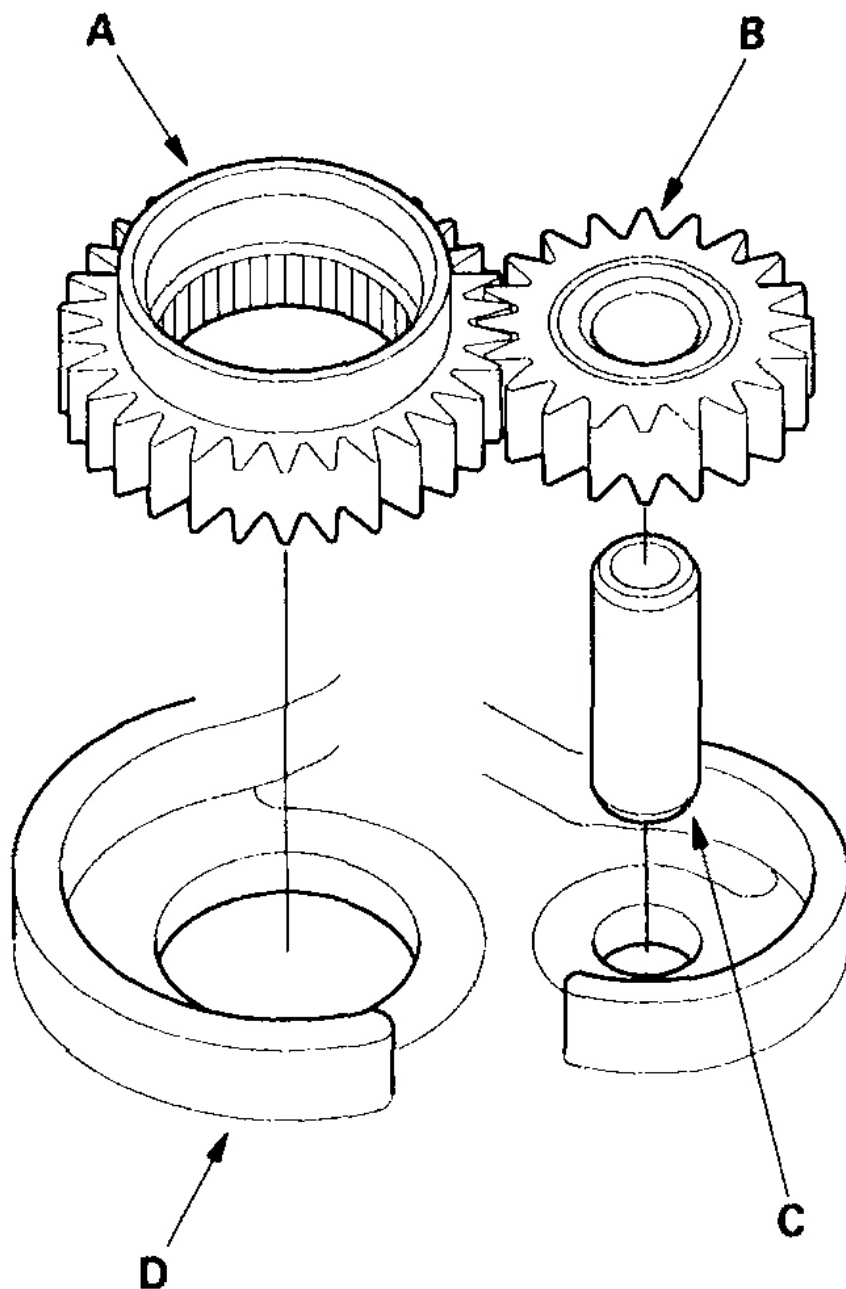
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Fig. 29: Main Valve Body Spring Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ATF PUMP INSPECTION

1. Install the ATF pump drive gear (A), driven gear (B), and ATF pump driven gear shaft (C) in the main

valve body (D). Lubricate all parts with ATF, and install the ATF pump driven gear with its grooved and chamfered side facing up.



G01502451

Fig. 30: Assembling ATF Pump Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the side clearance of the ATF pump drive gear (A) and driven gear (B).

ATF Pump Gears Side (Radial) Clearance:**Standard (New):**

ATF Pump Drive Gear - 0.210-0.265 mm (0.0083-0.0104 in.).

ATF Pump Driven Gear - 0.070-0.125 mm (0.0028-0.0050 in.).

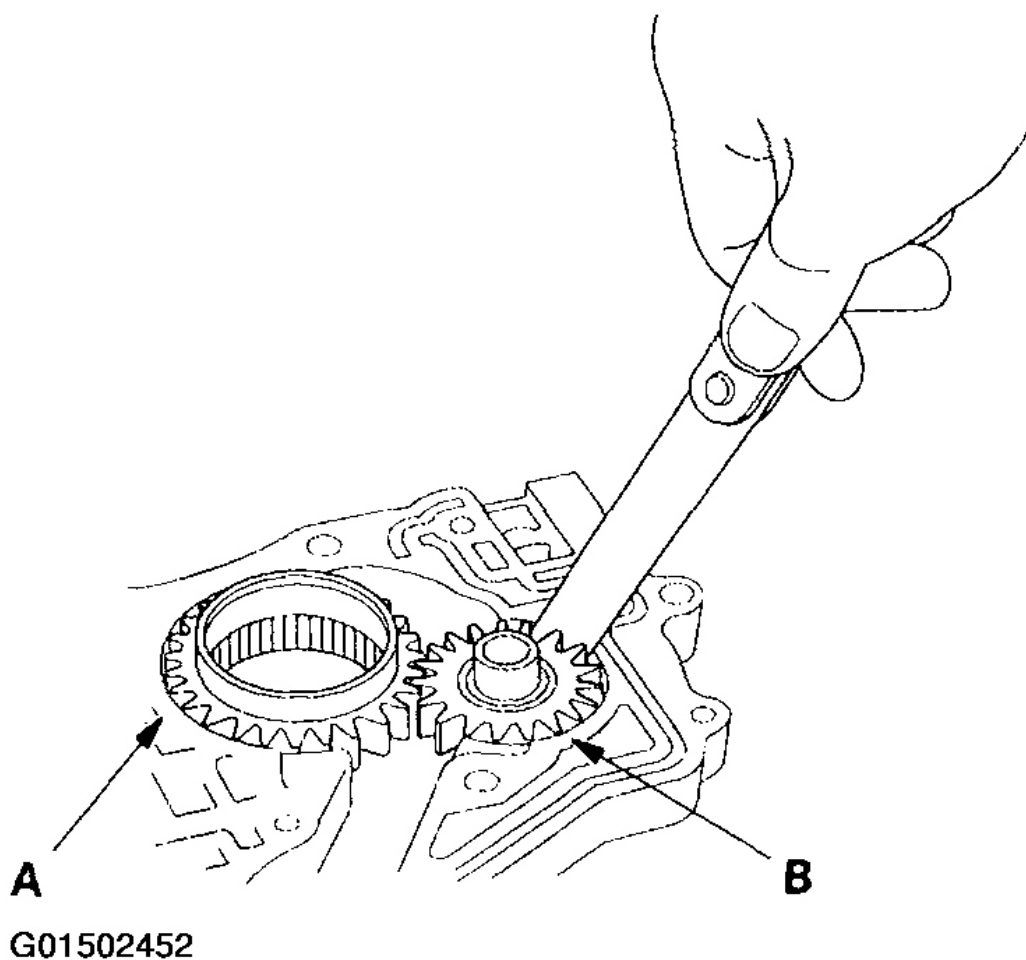


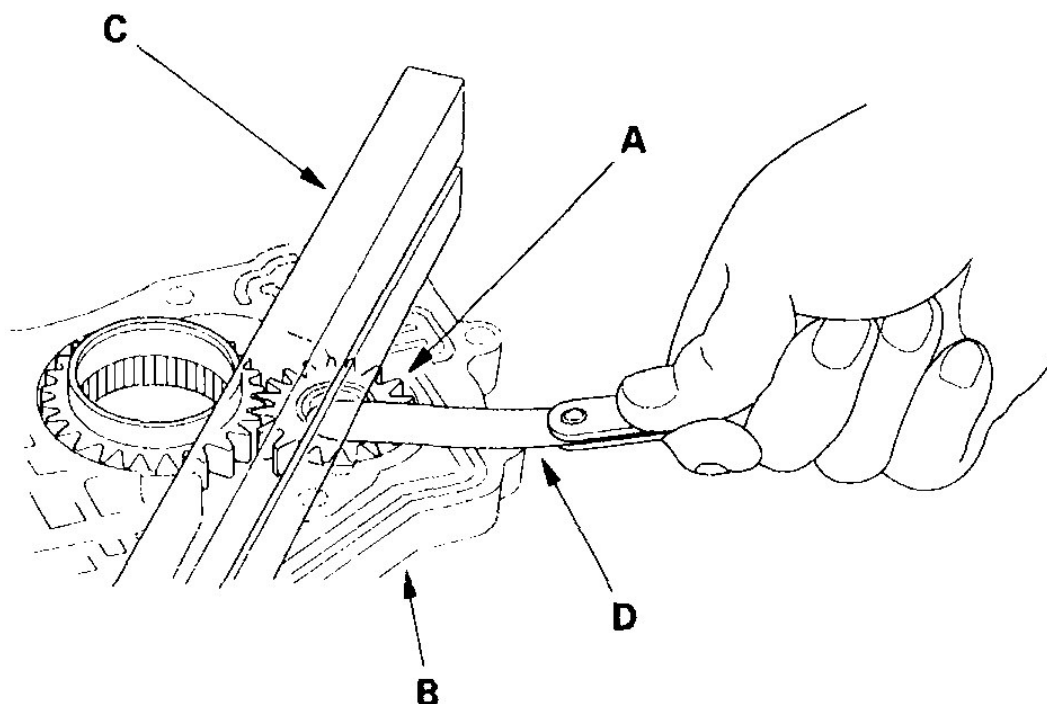
Fig. 31: Measuring Side Clearance Of ATF Pump Drive Gear & Driven Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the ATF pump driven gear shaft. Measure the thrust clearance between the ATF pump driven gear (A) and the valve body (B) with a straight edge (C) and a feeler gauge (D).

ATF Pump Drive/Driven Gear Thrust (Axial) Clearance:

Standard (New) - 0.03-0.05 mm (0.001-0.002 in.).

Service Limit - 0.07 mm (0.003 in.).



G01502453

Fig. 32: Measuring Thrust Clearance Between ATF Pump Driven Gear & Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REGULATOR VALVE BODY DISASSEMBLY, INSPECTION & REASSEMBLY

1. Clean all parts thoroughly in solvent or carburetor cleaner, and dry them with compressed air. Blow out all passages.
2. Check all valves for free movement. If any fail to slide freely, refer to Valve Body Repair (see **VALVE BODY REPAIR**).
3. Replace the valve body as an assembly if any parts are worn or damaged.
4. Hold the regulator spring cap in place while removing the stop bolt. The regulator spring cap is spring loaded. Once the stop bolt is removed, release the spring cap slowly so it does not pop out.
5. Reassembly is the reverse of the disassembly. Install the filter in the direction shown.
6. Coat all parts with ATF during assembly.

7. Align the hole in the regulator spring cap with the hole in the valve body, then press the spring cap into the valve body, and tighten the stop bolt.

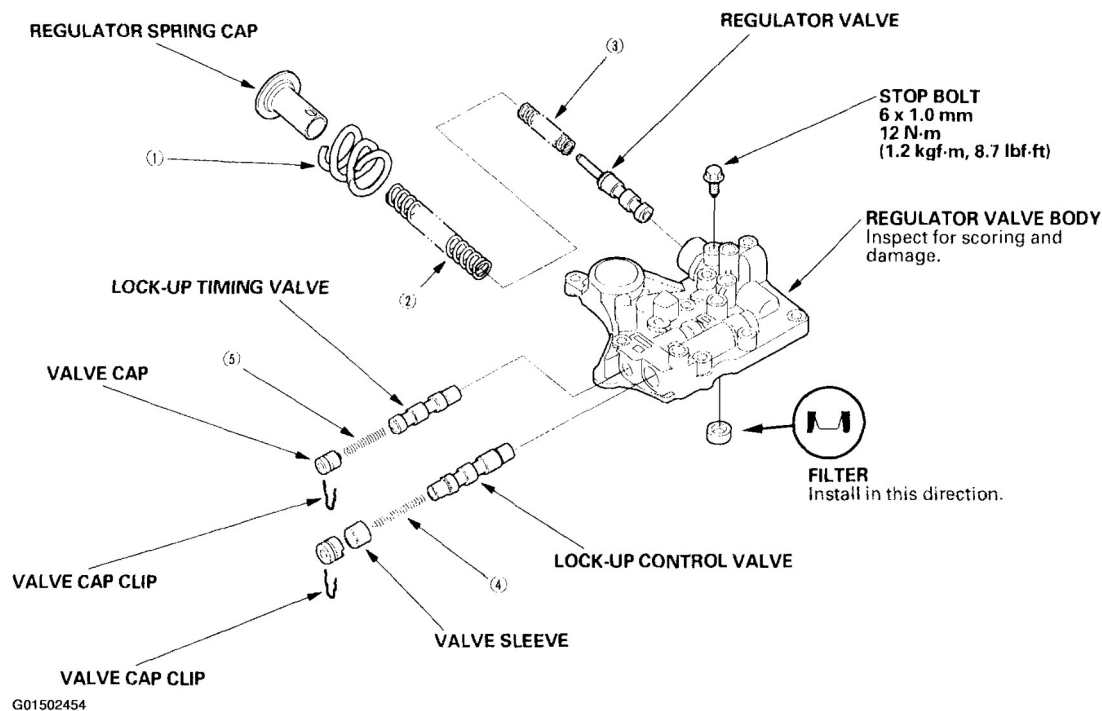


Fig. 33: Exploded View Of Regulator Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

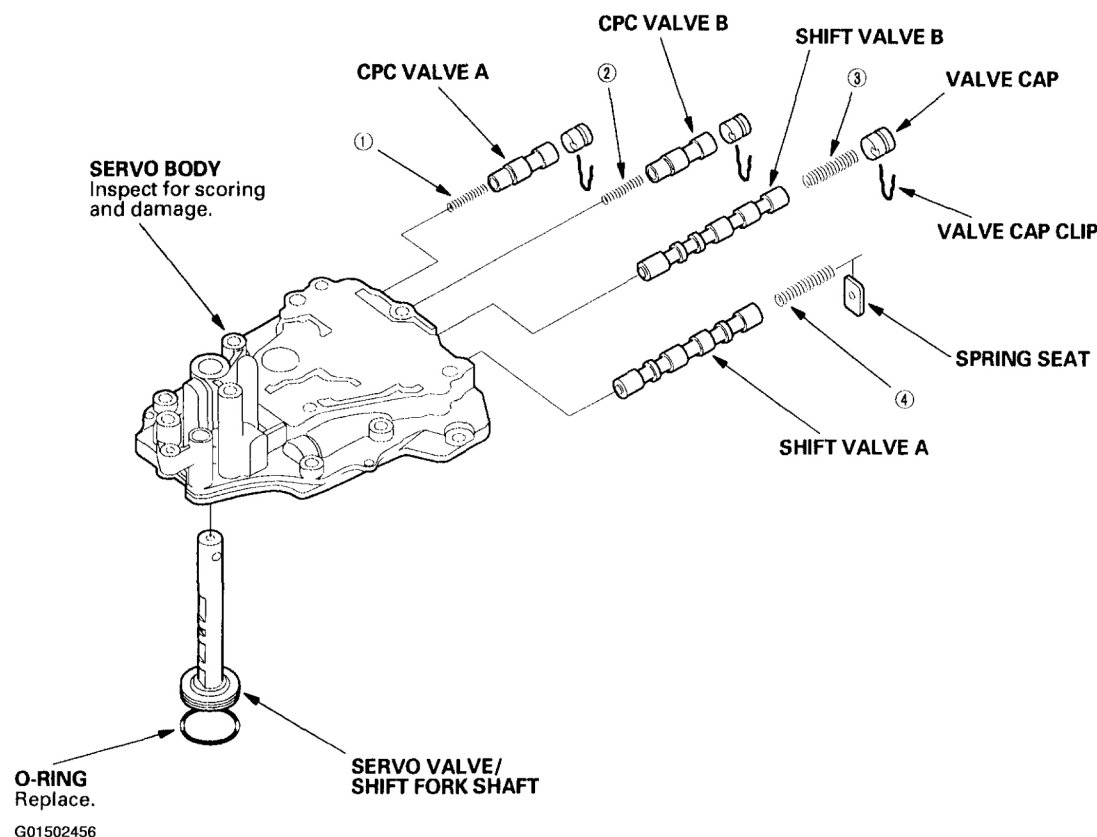
No.	Spring	Standard (New)-Unit: mm (in.)			
		Wire Dia.	O.D.	Free Length	No. of Coils
(1)	Stator reaction spring	5.5 (0.217)	37.4 (1.472)	30.3 (1.193)	2.1
(2)	Regulator valve spring A	1.9 (0.075)	14.7 (0.579)	80.6 (3.173)	16.1
(3)	Regulator valve spring B	1.6 (0.063)	9.2 (0.362)	44.0 (1.732)	12.5
(4)	Lock-up control valve spring	0.7 (0.028)	6.6 (0.260)	42.9 (1.689)	14.2
(5)	Lock-up timing valve spring	0.65 (0.026)	6.6 (0.260)	34.8 (1.370)	15.6

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Fig. 34: Regulator Valve Body Spring Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SERVO BODY DISASSEMBLY, INSPECTION & REASSEMBLY

1. Clean all parts thoroughly in solvent or carburetor cleaner, and dry them with compressed air. Blow out all passages.
2. Check all valves for free movement. If any fail to slide freely, refer to Valve Body Repair (see **VALVE BODY REPAIR**).
3. Replace the valve body as an assembly if any parts are worn or damaged.
4. Coat all parts with ATF during assembly.

**Fig. 35: Exploded View Of Servo Body**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

No.	Spring	Standard (New)-Unit: mm (in.)			
		Wire Dia.	O.D.	Free Length	No. of Coils
①	CPC valve A spring	0.7 (0.028)	6.1 (0.240)	17.8 (0.701)	7.9
②	CPC valve B spring	0.7 (0.028)	6.1 (0.240)	17.8 (0.701)	7.9
③	Shift valve B spring	0.8 (0.031)	6.6 (0.260)	49.1 (1.933)	21.7
④	Shift valve A spring	0.8 (0.031)	6.6 (0.260)	49.1 (1.933)	21.7

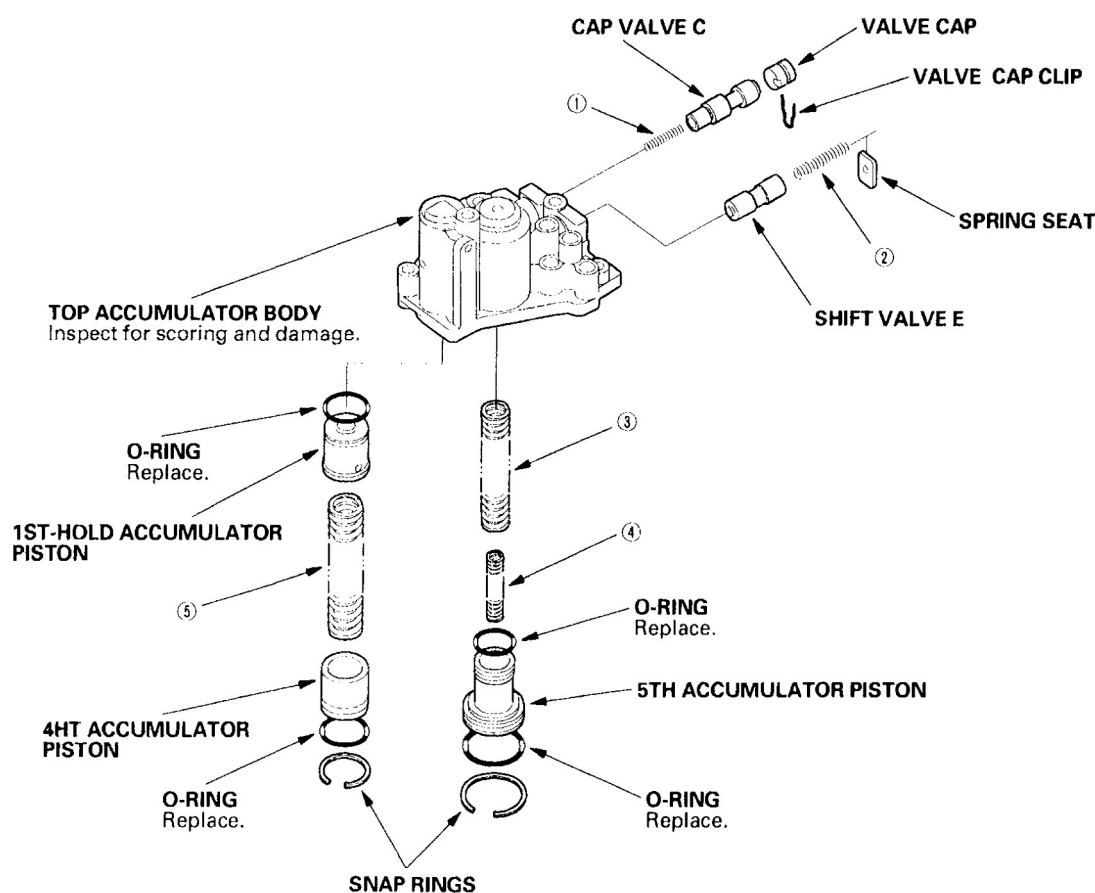
G01502457

Fig. 36: Servo Body Spring Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TOP ACCUMULATOR BODY DISASSEMBLY, INSPECTION & REASSEMBLY

1. Clean all parts thoroughly in solvent or carburetor cleaner, and dry them with compressed air. Blow out all passages.
2. Check all valves for free movement. If any fail to slide freely, refer to Valve Body Repair (see **VALVE BODY REPAIR**).
3. Replace the valve body as an assembly if any parts are worn or damaged.
4. Coat all parts with ATF during assembly.



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Fig. 37: Exploded View Of Top Accumulator Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

No.	Springs	Standard (New)-Unit: mm (in.)			
		Wire Dia.	O.D.	Free Length	No. of Coils
①	CPC valve C spring	0.7 (0.028)	6.1 (0.240)	17.8 (0.701)	7.9
②	Shift valve E spring	0.8 (0.031)	7.1 (0.280)	49.0 (1.929)	17.2
③	5th accumulator spring A	2.2 (0.087)	16.4 (0.646)	75.7 (2.980)	14.2
④	5th accumulator spring B	2.0 (0.079)	10.0 (0.394)	45.5 (1.791)	11.6
⑤	4th/1st-hold accumulator spring	3.4 (0.134)	19.6 (0.772)	57.4 (2.260)	8.4

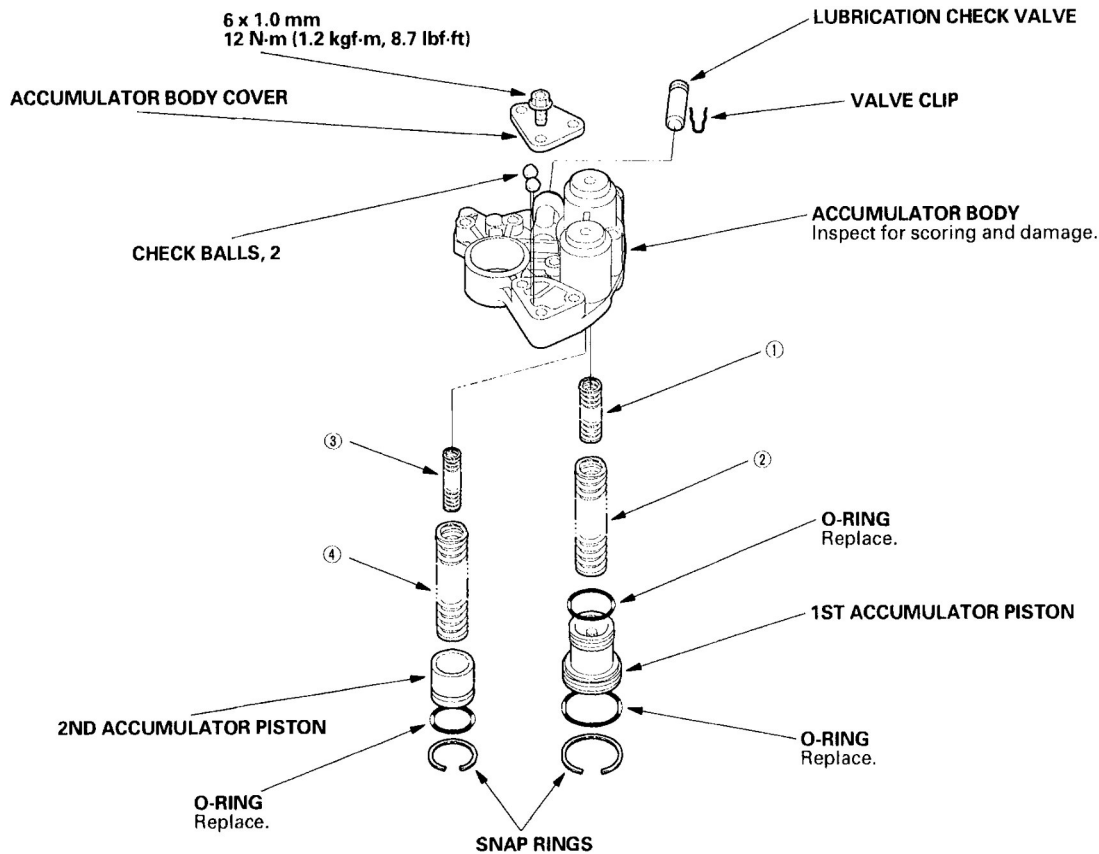
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Fig. 38: Top Accumulator Body Spring Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ACCUMULATOR BODY DISASSEMBLY, INSPECTION & REASSEMBLY

1. Do not use a magnet to remove the check balls; it may magnetize the balls.
2. Clean all parts thoroughly in solvent or carburetor cleaner, and dry them with compressed air. Blow out all passages.

3. Coat all parts with ATF during assembly.



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Fig. 39: Exploded View Of Accumulator Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

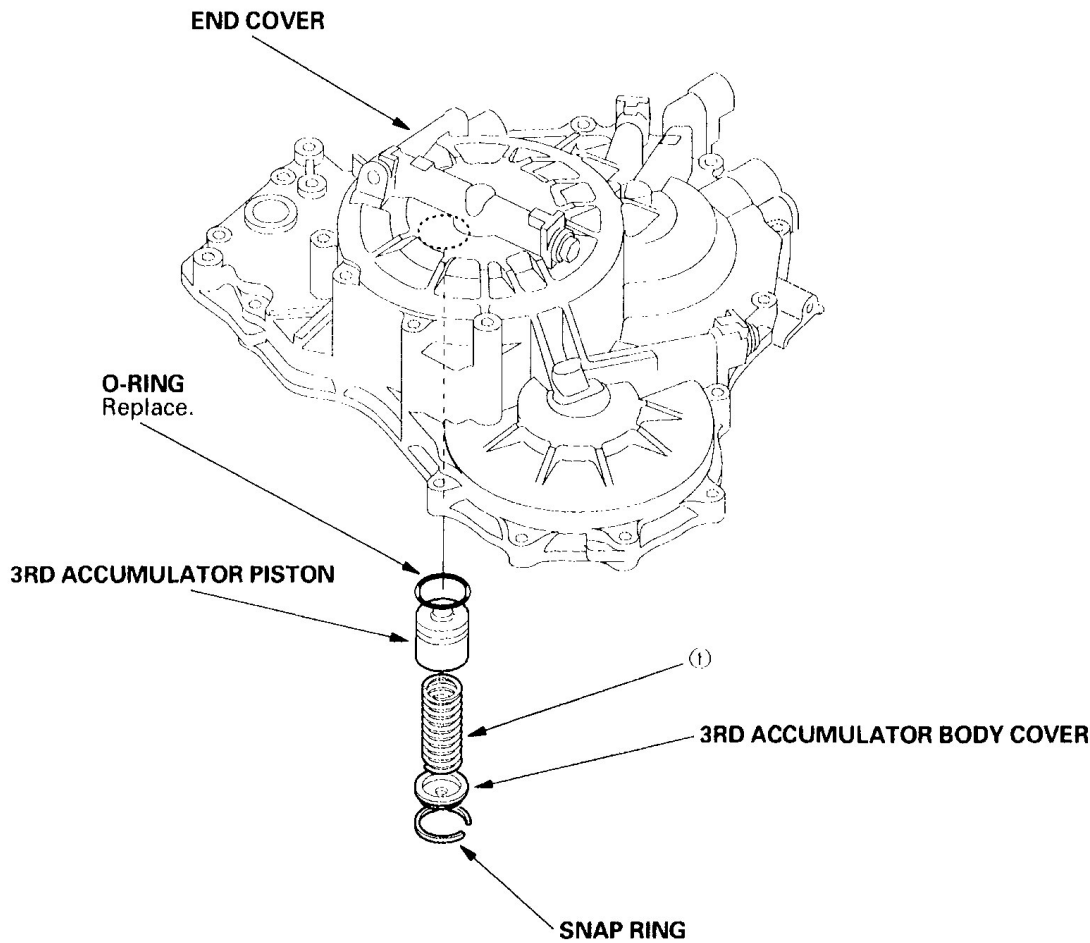
No.	Springs	Standard (New)-Unit: mm (in.)			
		Wire Dia.	O.D.	Free Length	No. of Coils
①	1st accumulator spring B	2.3 (0.091)	12.6 (0.496)	42.0 (1.654)	9.9
②	1st accumulator spring A	2.4 (0.094)	19.5 (0.768)	67.7 (2.665)	10.2
③	2nd accumulator spring B	2.6 (0.102)	13.2 (0.520)	44.0 (1.732)	8.5
④	2nd accumulator spring A	2.3 (0.091)	19.6 (0.772)	57.7 (2.272)	6.6

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Fig. 40: Accumulator Body Spring Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3RD ACCUMULATOR & END COVER DISASSEMBLY, INSPECTION & REASSEMBLY

1. Clean all parts thoroughly in solvent or carburetor cleaner, and dry them with compressed air. Blow out all passages.
2. Coat all parts with ATF during assembly.



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Fig. 41: Exploded View Of 3rd Accumulator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

No.	Springs	Standard (New)-Unit: mm (in.)			
		Wire Dia.	O.D.	Free Length	No. of Coils
①	3rd accumulator spring	3.1 (0.122)	19.6 (0.772)	39.4 (1.551)	5.5

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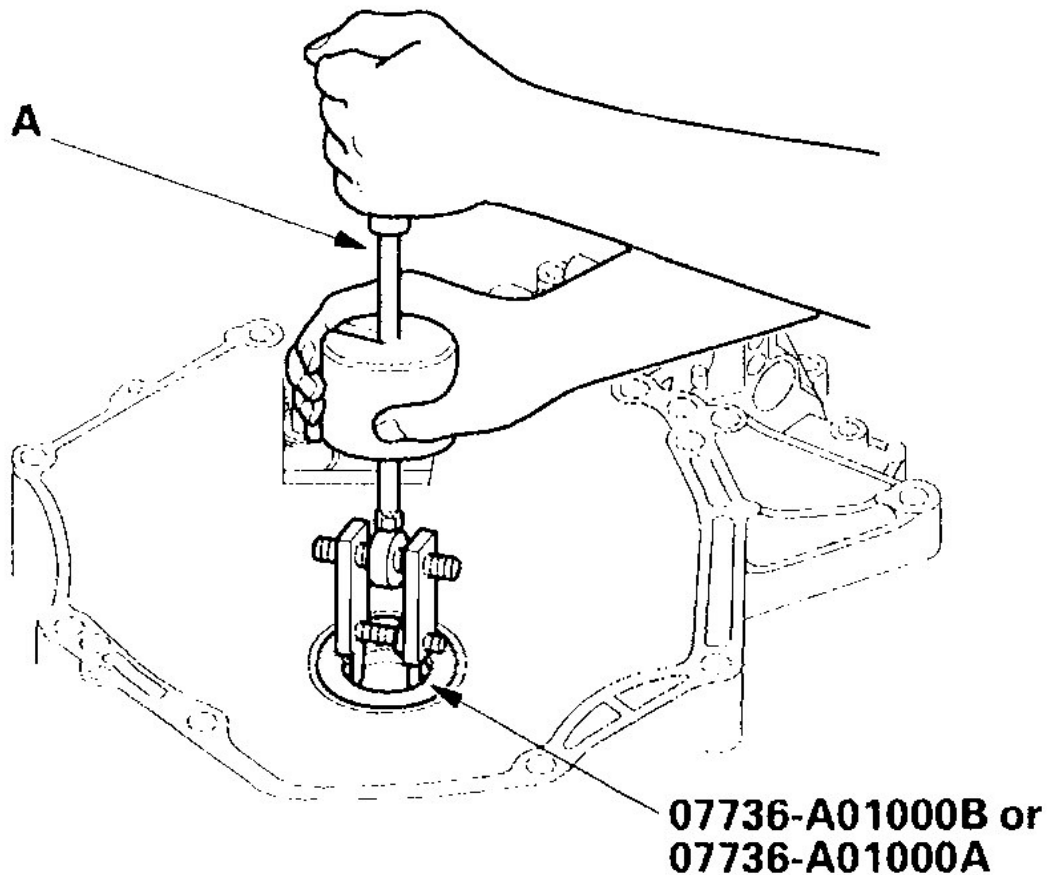
Fig. 42: 3rd Accumulator Spring Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TORQUE CONVERTER HOUSING

MAINSHAFT BEARING & OIL SEAL REPLACEMENT

Special Tools Required:

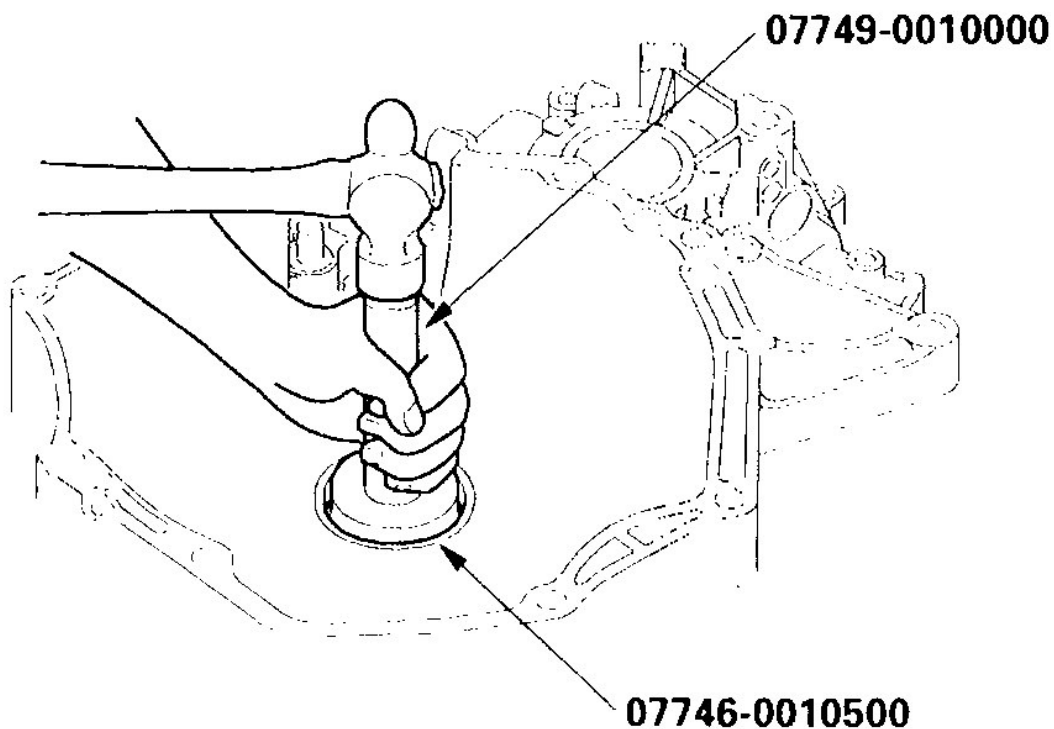
- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A.
 - Driver 07749-0010000.
 - Attachment, 62 x 68 mm 07746-0010500.
 - Attachment, 72 x 75 mm 07746-0010600.
1. Remove the mainshaft bearing and oil seal with the special tools and a commercially available 3/8"-16 slide hammer (A).



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Fig. 43: Removing Mainshaft Bearing & Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new mainshaft bearing until it bottoms in the housing with the special tools.

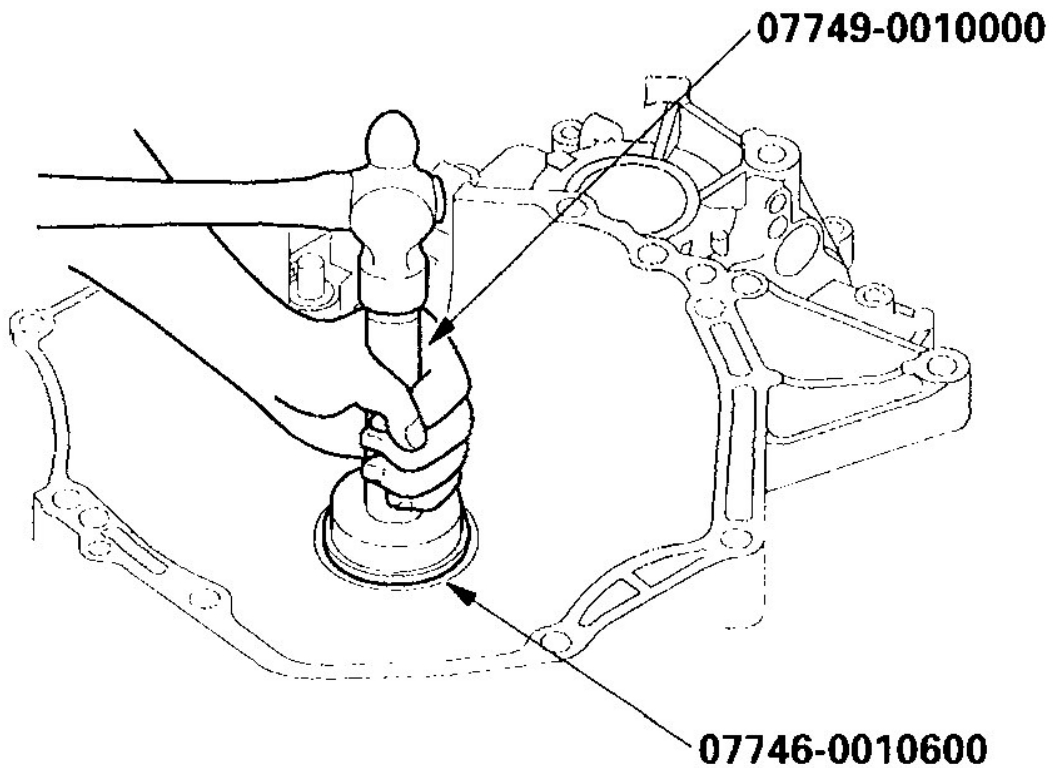


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Fig. 44: Installing New Mainshaft Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal flush to the housing with the special tools.



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Fig. 45: Installing New Mainshaft Bearing Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT BEARING REPLACEMENT

Special Tools Required:

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A.
- Driver 07749-0010000.
- Attachment, 62 x 68 mm 07746-0010500.

1. Remove the countershaft bearing (A) with the special tools and a commercially available 3/8"-16 slide hammer (B).

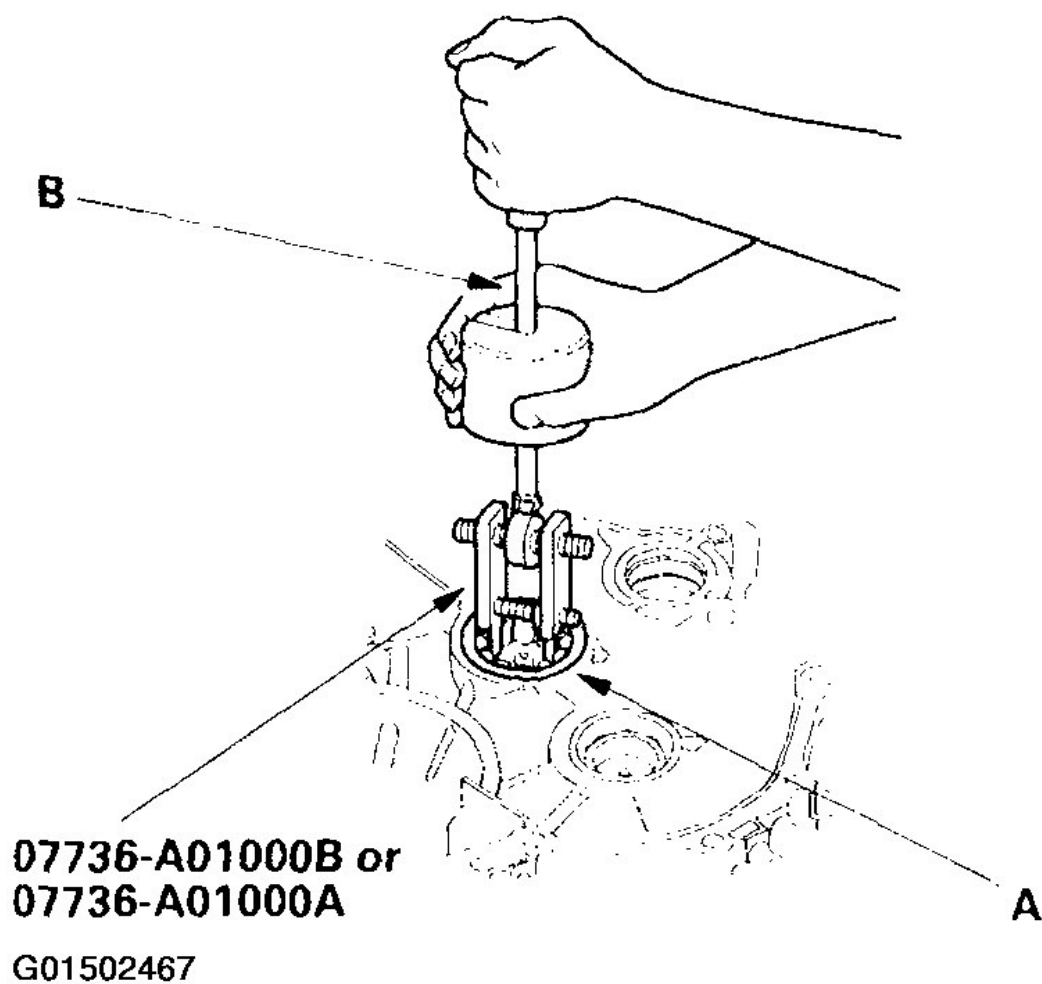


Fig. 46: Removing Countershaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the ATF guide plate (A).

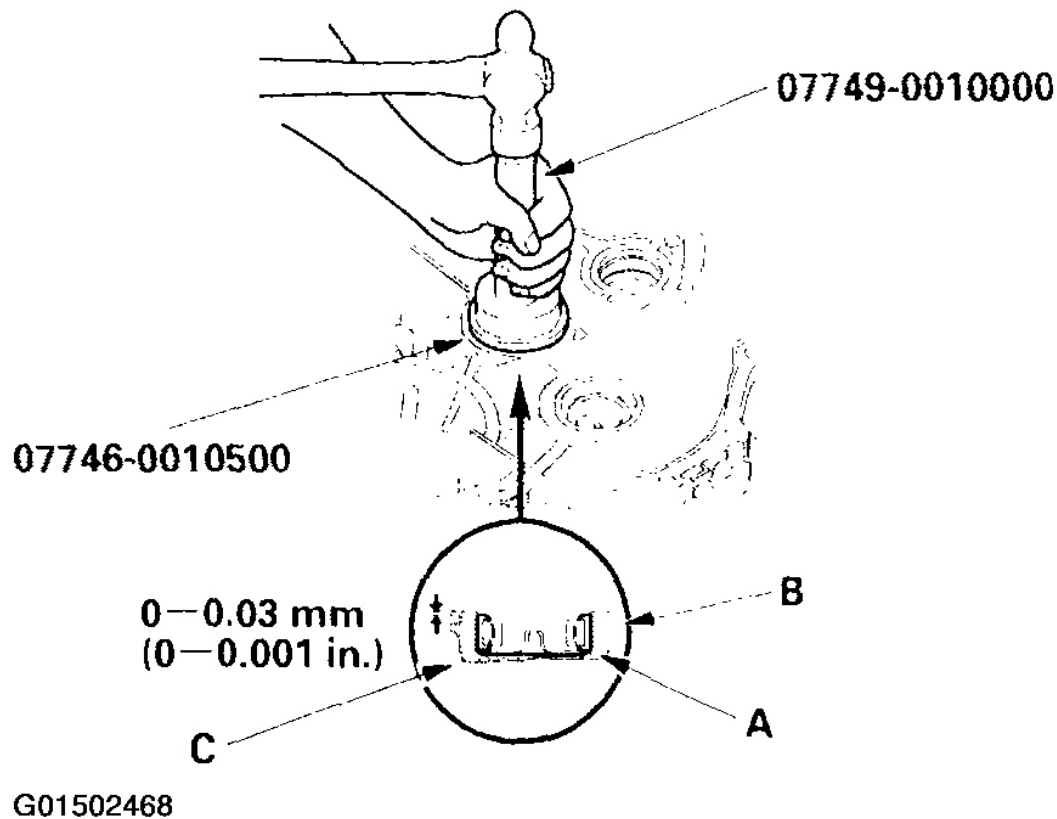


Fig. 47: Installing ATF Guide Plate
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new bearing (B) into the housing (C) with the special tools.

SECONDARY SHAFT BEARING REPLACEMENT

Special Tools Required:

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A.
 - Driver 07749-0010000.
 - Driver attachment 07947-6340500.
1. Remove the secondary shaft bearing (A) with the special tools and a commercially available 3/8"-16 slide hammer (B).

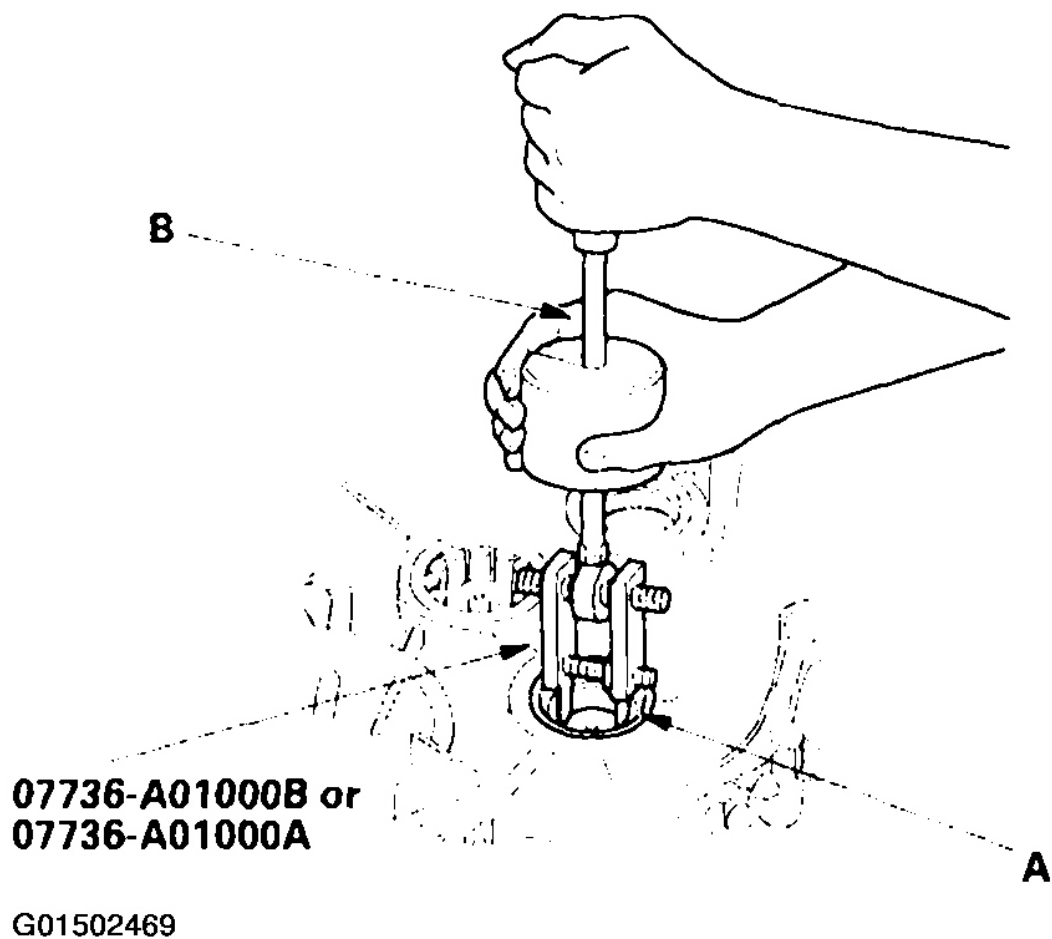


Fig. 48: Removing Secondary Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the ATF guide plate (A).

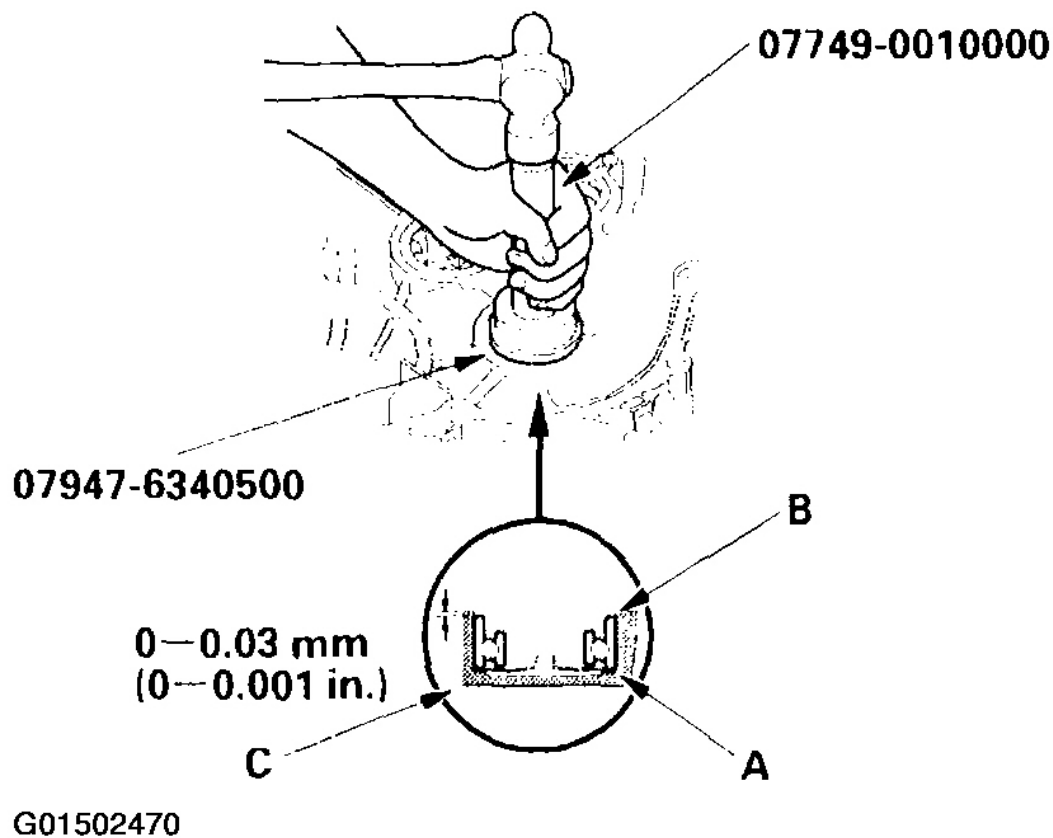


Fig. 49: Installing ATF Guide Plate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

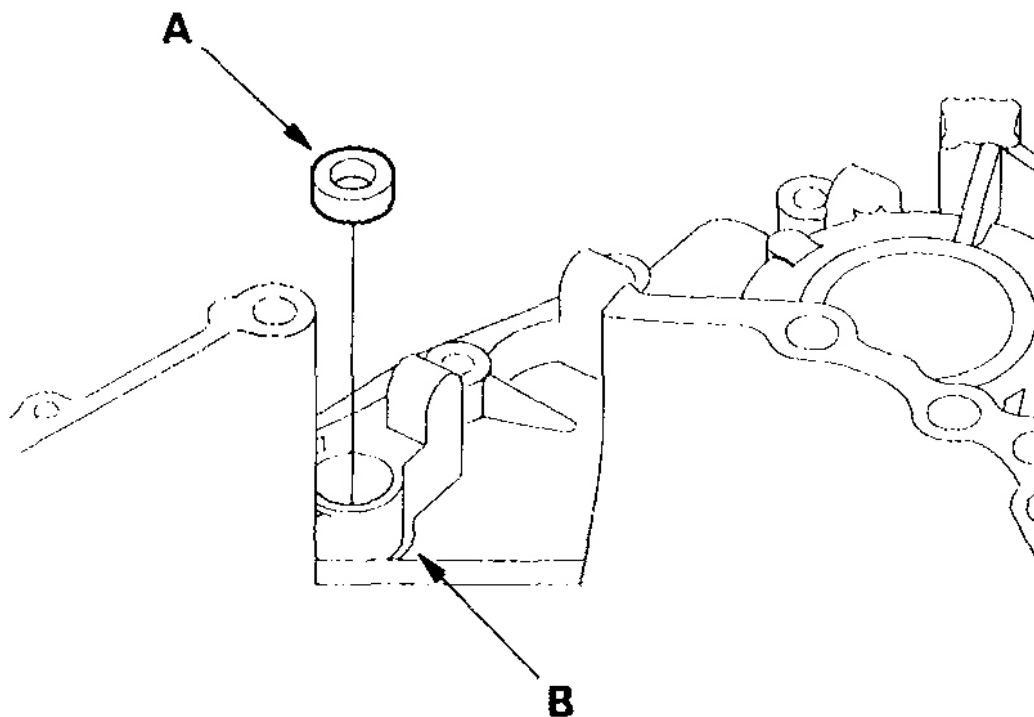
3. Install the new bearing (B) into the housing (C) with the special tools.

CONTROL SHAFT OIL SEAL REPLACEMENT

Special Tools Required:

- Driver 07749-0010000.
- Attachment, 22 x 24 mm 07746-0010800.

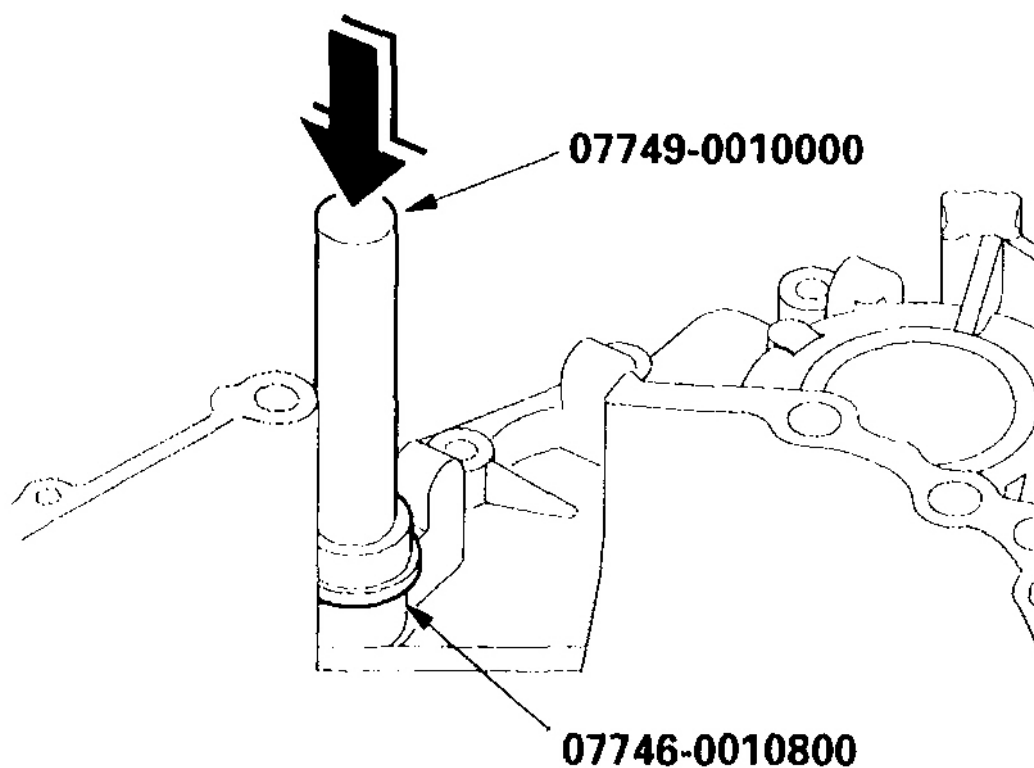
1. Remove the oil seal (A), from the torque converter housing (B).



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Fig. 50: Removing Control Shaft Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new oil seal flush to the torque converter housing with the special tools.



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Fig. 51: Installing New Control Shaft Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHAFTS AND CLUTCHES

MAINSHAFT DISASSEMBLY, INSPECTION & REASSEMBLY

1. Lubricate all parts with ATF during assembly.

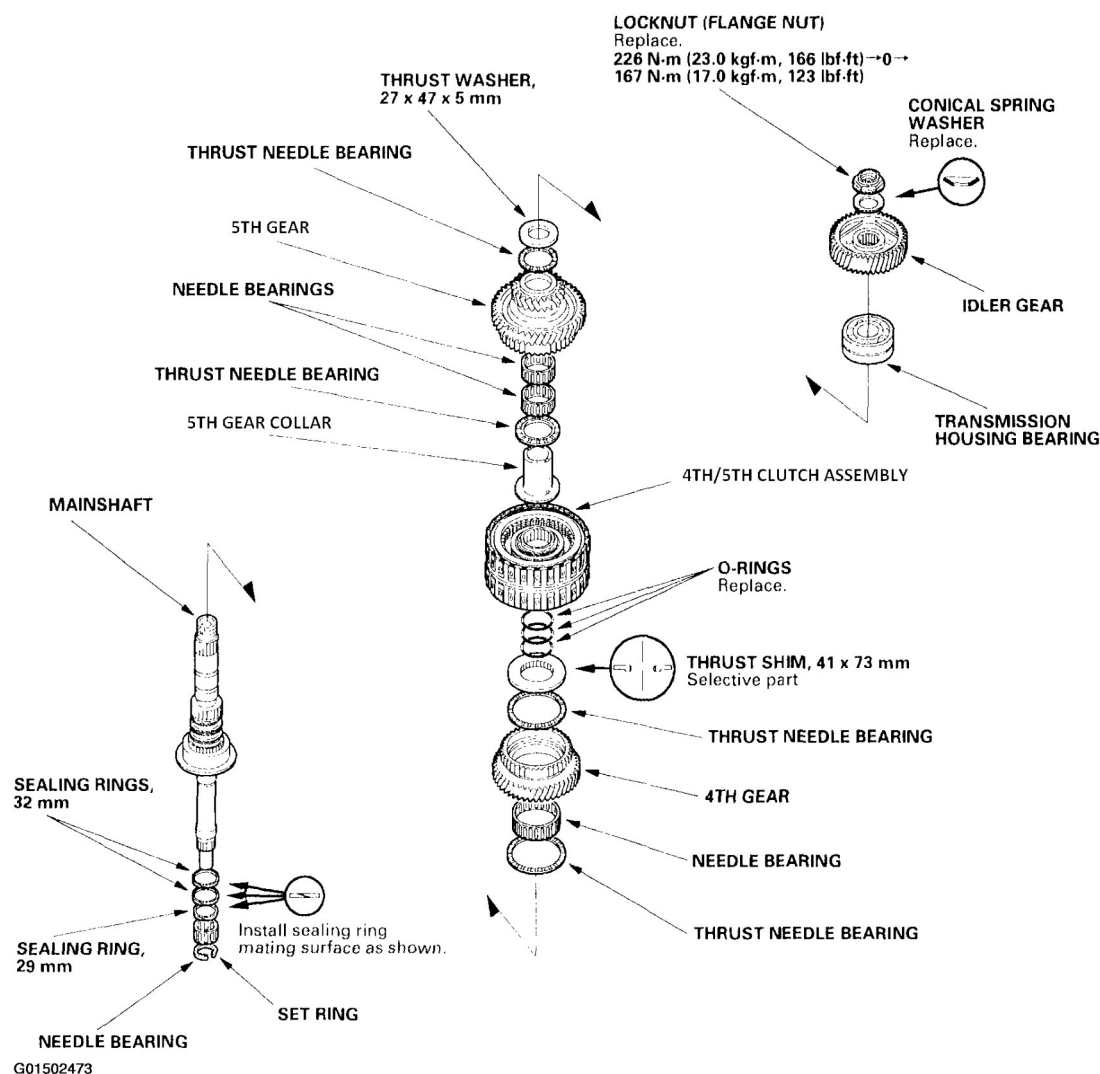
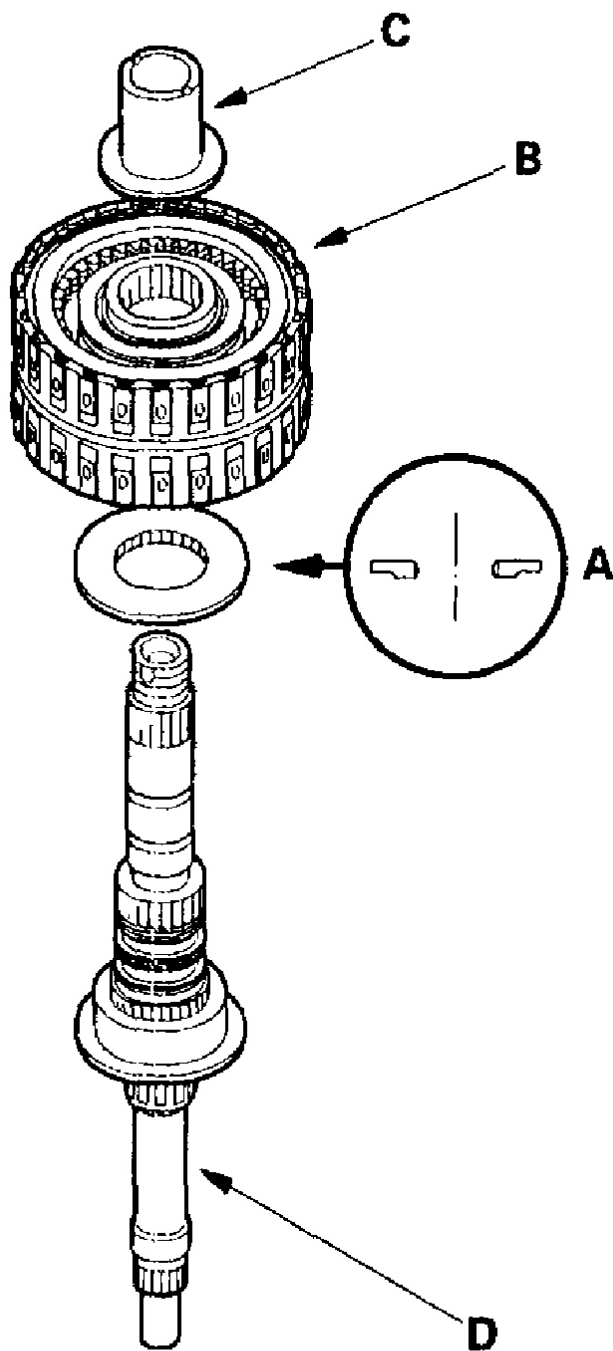


Fig. 52: Exploded View Of Mainshaft Components With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the clearance of the 4th/5th clutch assembly.
3. Inspect the thrust needle bearing and the needle bearing for galling and rough movement.
4. Inspect the splines for excessive wear and damage.
5. Check shaft bearing surfaces for scoring and excessive wear.
6. Before installing the O-rings, wrap the shaft splines with tape to prevent O-ring damage.
7. Install the conical spring washer and 41 x 73 mm thrust shim in the direction shown.
8. Inspect the condition of the sealing rings. If the sealing rings are worn, distorted, or damaged, replace them (see **MAINSHAFT SEALING RING REPLACEMENT**).

4TH/5TH CLUTCH CLEARANCE INSPECTION

1. Remove the O-rings from the mainshaft.
2. Assemble the 41 x 73 mm thrust shim (A), 4th/5th clutch assembly (B), and 5th gear collar (C) on the mainshaft (D).

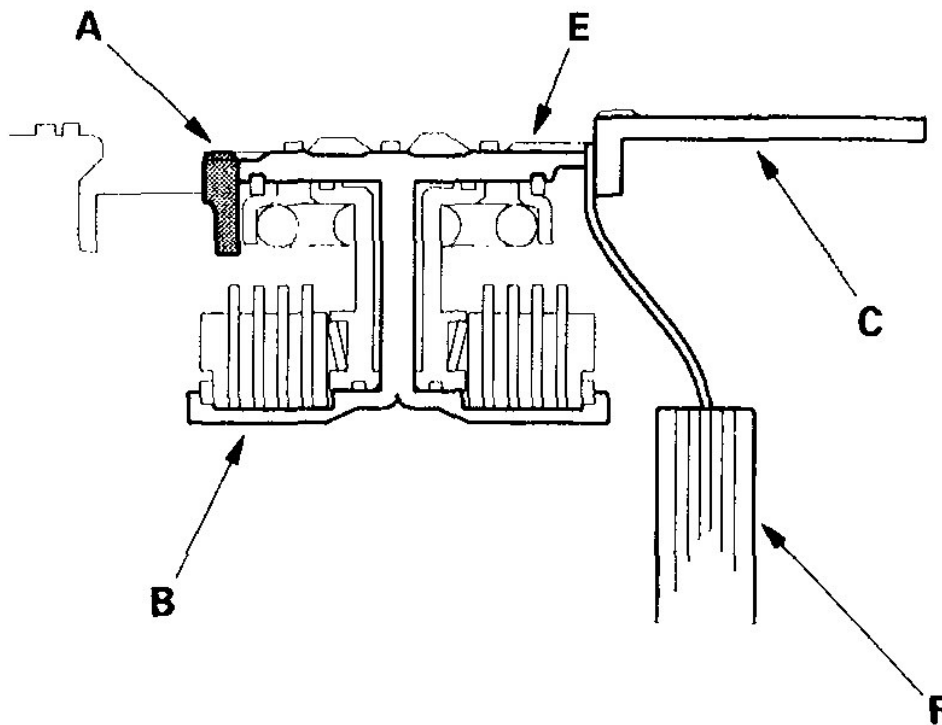
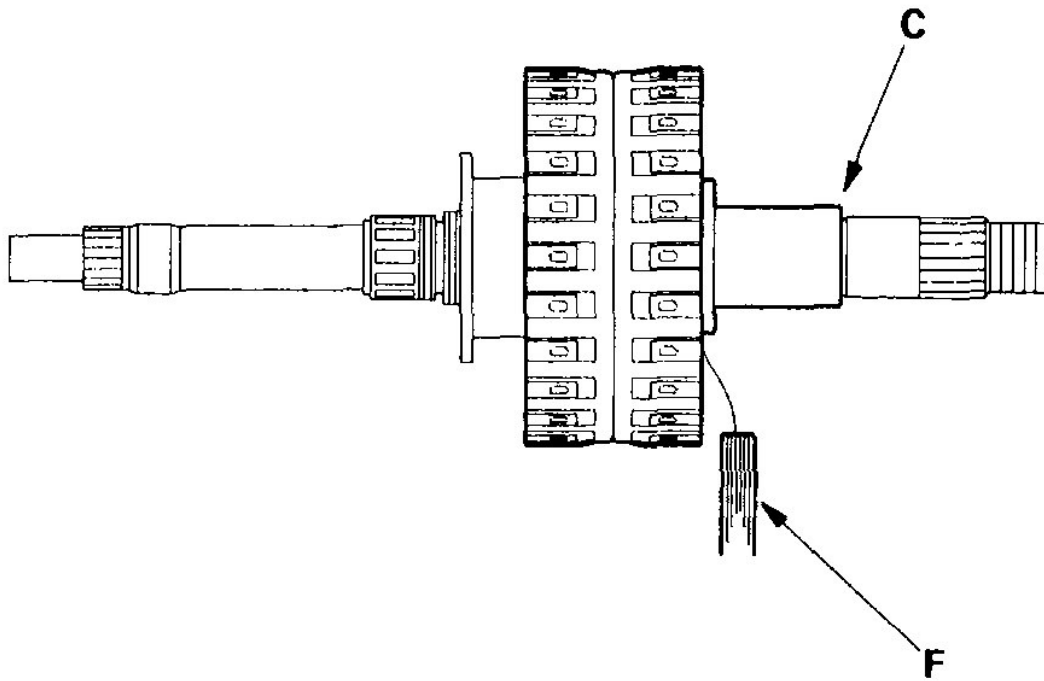


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Fig. 53: Assembling Thrust Shim, 4th/5th Clutch Assembly & 5th Gear Collar On Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Hold the 5th gear collar (C) against the clutch assembly (B), then measure the clearance between the clutch guide (E) and the 5th gear collar with a feeler gauge (F) in at least 3 places. Use the average as the actual clearance.

Standard - 0.03-0.11 mm (0.001-0.004 in.).



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Fig. 54: Measuring Clearance Between Clutch Guide & 5th Gear Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the clearance is out of standard, remove the thrust shim and measure its thickness.
5. Select and install a new shim, then recheck.

No.	Part Number	Thickness
1	90414-P7W-000	7.85 mm (0.309 in.)
2	90415-P7W-000	7.90 mm (0.311 in.)
3	90416-P7W-000	7.95 mm (0.313 in.)
4	90417-P7W-000	8.00 mm (0.315 in.)
5	90418-P7W-000	8.05 mm (0.317 in.)
6	90419-P7W-000	8.10 mm (0.319 in.)

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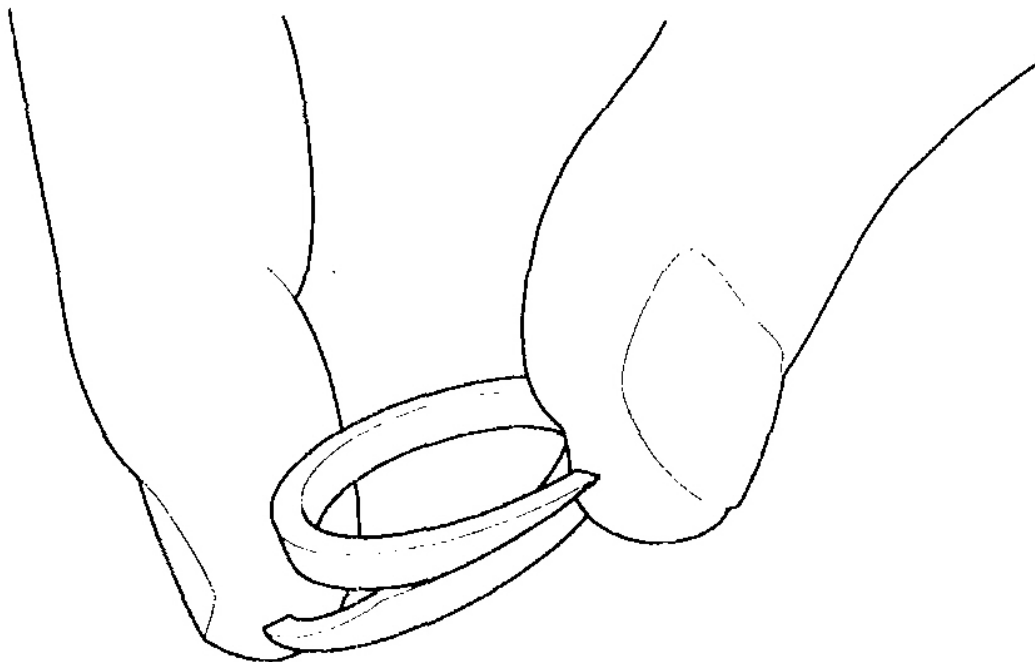
Fig. 55: Thrust Shim Selection Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. After replacing the thrust shim, make sure the clearance is within standard.

MAINSHAFT SEALING RING REPLACEMENT

The sealing rings are synthetic resin with chamfered ends. Check the condition of the sealing rings, and replace them only if they are worn, distorted, or damaged.

1. For a better fit, squeeze sealing rings together slightly before installing them.



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Fig. 56: Squeezing Sealing Rings Together Slightly Before Installation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply ATF to the new sealing rings then install them on the mainshaft.

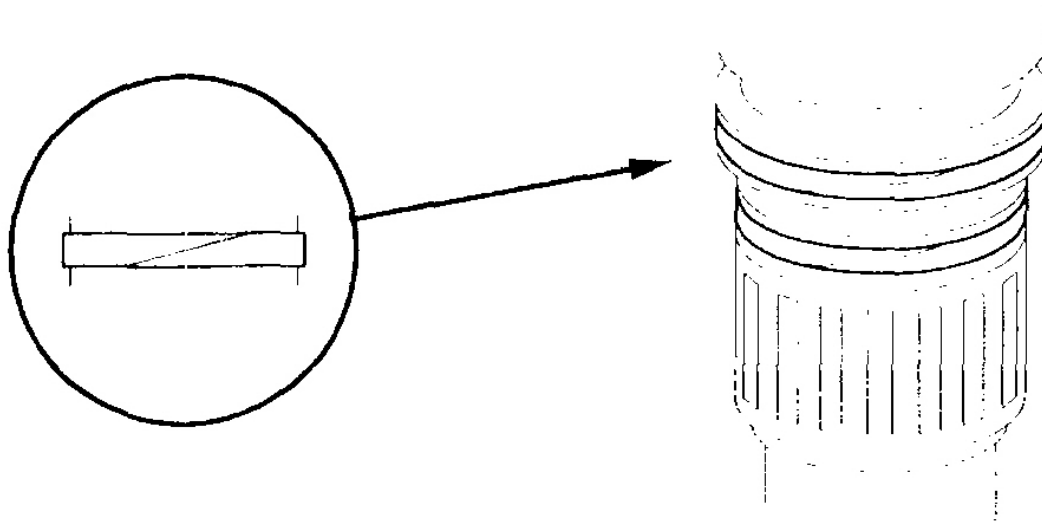
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Fig. 57: Installing Sealing Rings On Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. After installing the sealing rings, verify the following:
 - The rings are fully seated in the groove.
 - The rings are not twisted.
 - The chamfered ends of the rings are properly joined.

COUNTERSHAFT DISASSEMBLY, INSPECTION & REASSEMBLY

1. Remove the locknut, and take off components down to the reverse selector hub.

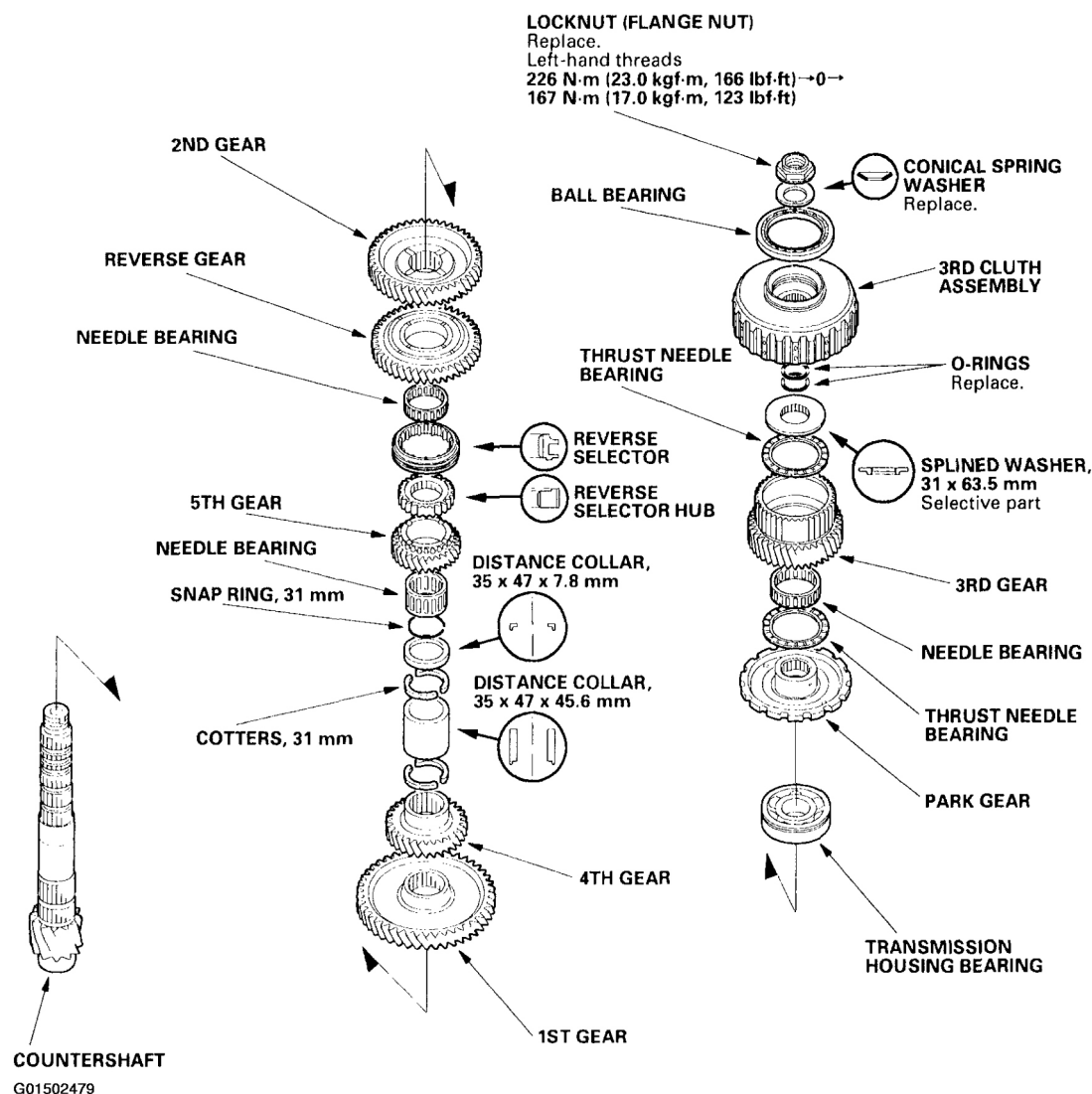


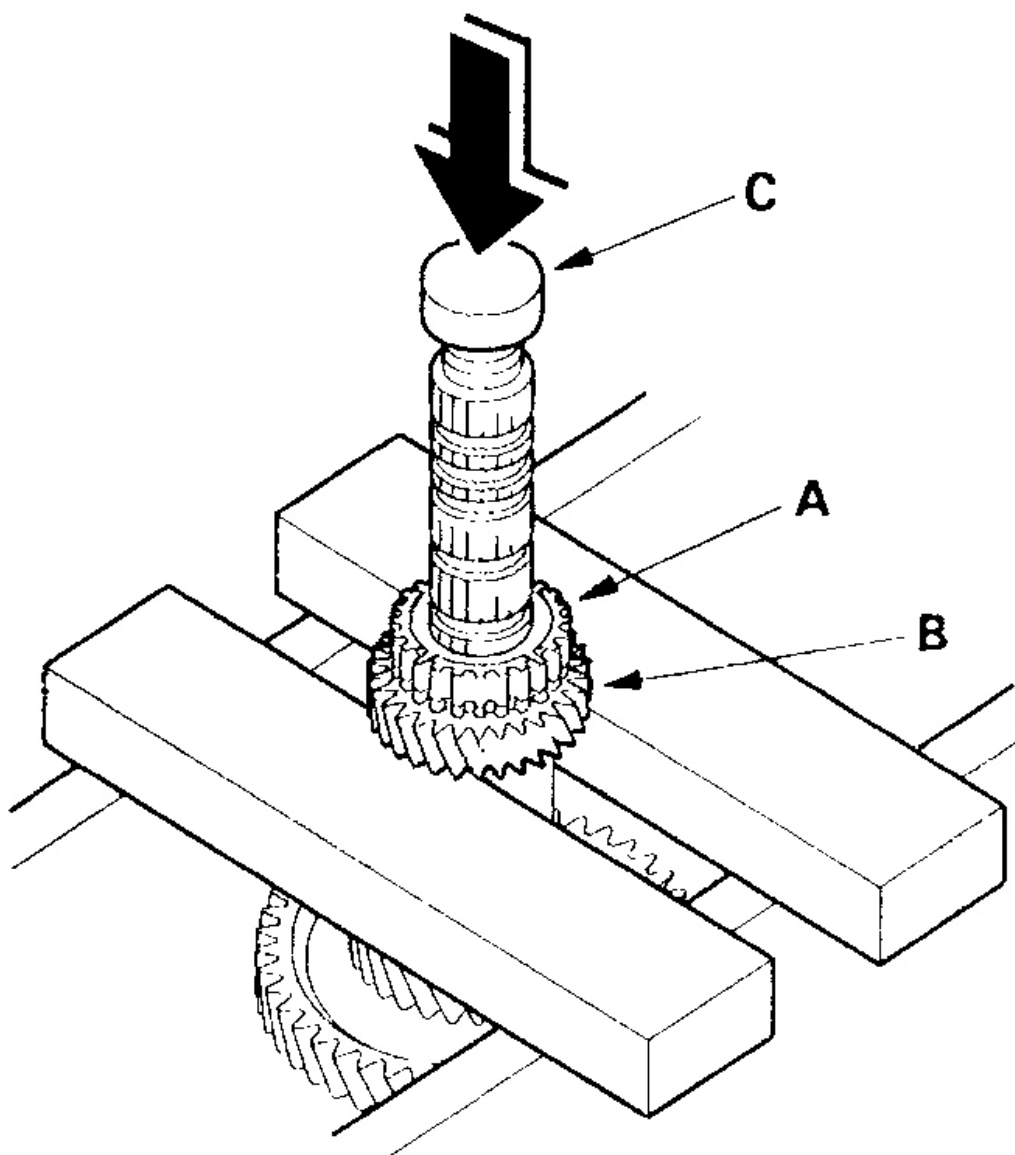
Fig. 58: Exploded View Of Countershaft Assembly With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the reverse selector hub, 4th gear, and 1st gear (see **COUNTERSHAFT REVERSE SELECTOR HUB & 4TH GEAR REMOVAL**).
3. Check the bearing on the 3rd clutch for wear and rough movement. If the bearing is worn or damaged, replace it (see **3RD CLUTCH BALL BEARING REPLACEMENT**).
4. Inspect the thrust needle bearing and the needle bearing for galling and rough movement.
5. Check the splines for excessive wear and damage.
6. Check the shaft bearing surfaces for scoring and excessive wear.
7. Lubricate all parts with ATF, and reassemble the shafts and gears.
8. Install the distance collars, reverse selector hub, reverse selector, splined washer, and conical spring washer in the direction shown.

COUNTERSHAFT REVERSE SELECTOR HUB & 4TH GEAR REMOVAL

1. Remove the reverse selector hub (A) and the 5th gear (B) from the countershaft with a press. Place a shaft protector (C) between the countershaft and press to prevent damaging the countershaft.

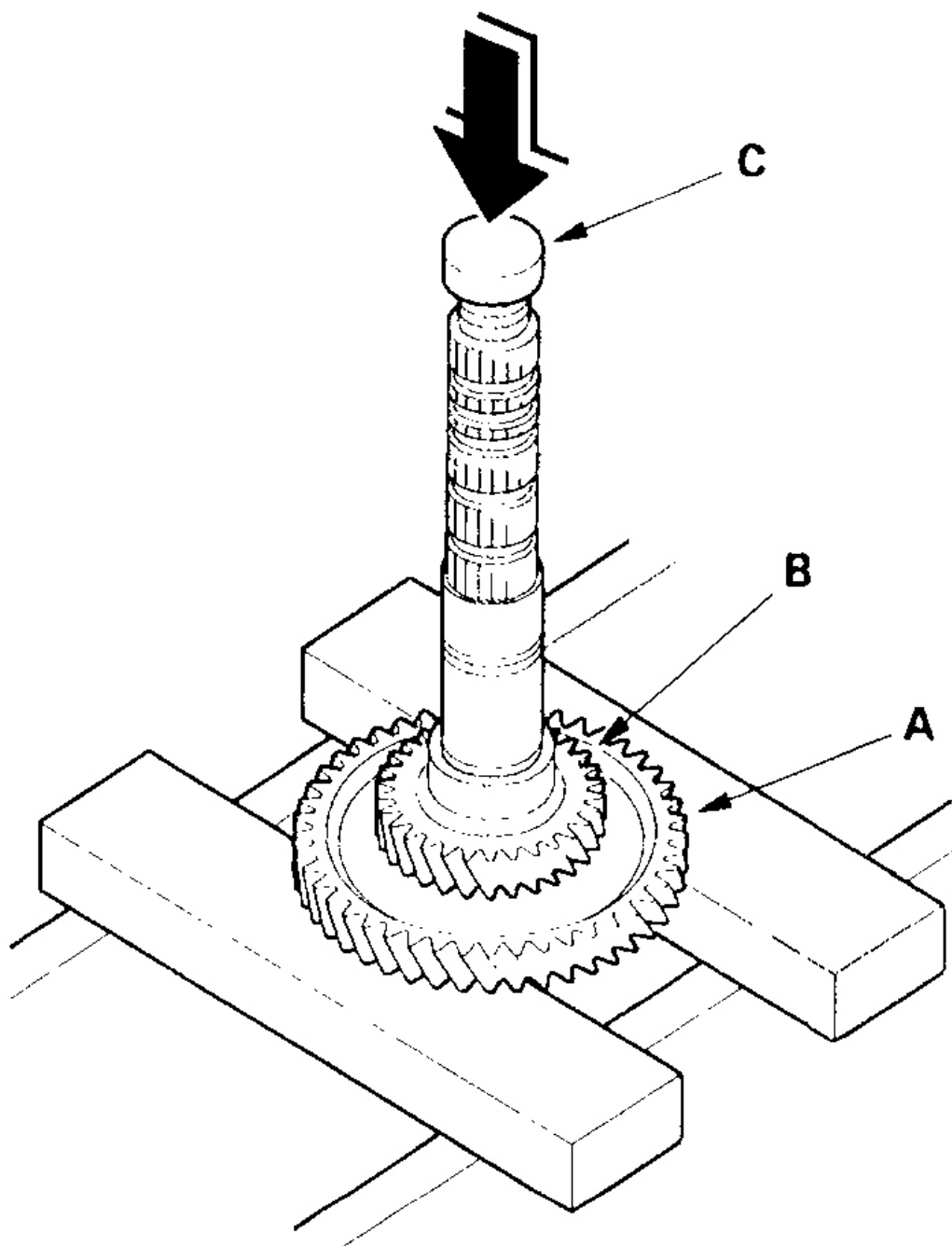
NOTE: **Some reverse selector hubs are not press fitted, and can be removed without using a press.**



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Fig. 59: Removing Reverse Selector Hub & 5th Gear From Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the needle bearing, snap ring, 35 x 47 x 7.8 mm distance collar, 31 mm cotters, 35 x 47 x 45.6 mm distance collar, and 31 mm cotters from the countershaft.
3. Remove the 1st gear (A) and 4th gear (B) from the countershaft with a press. Place a shaft protector (C) between the countershaft and press to prevent damaging the countershaft.



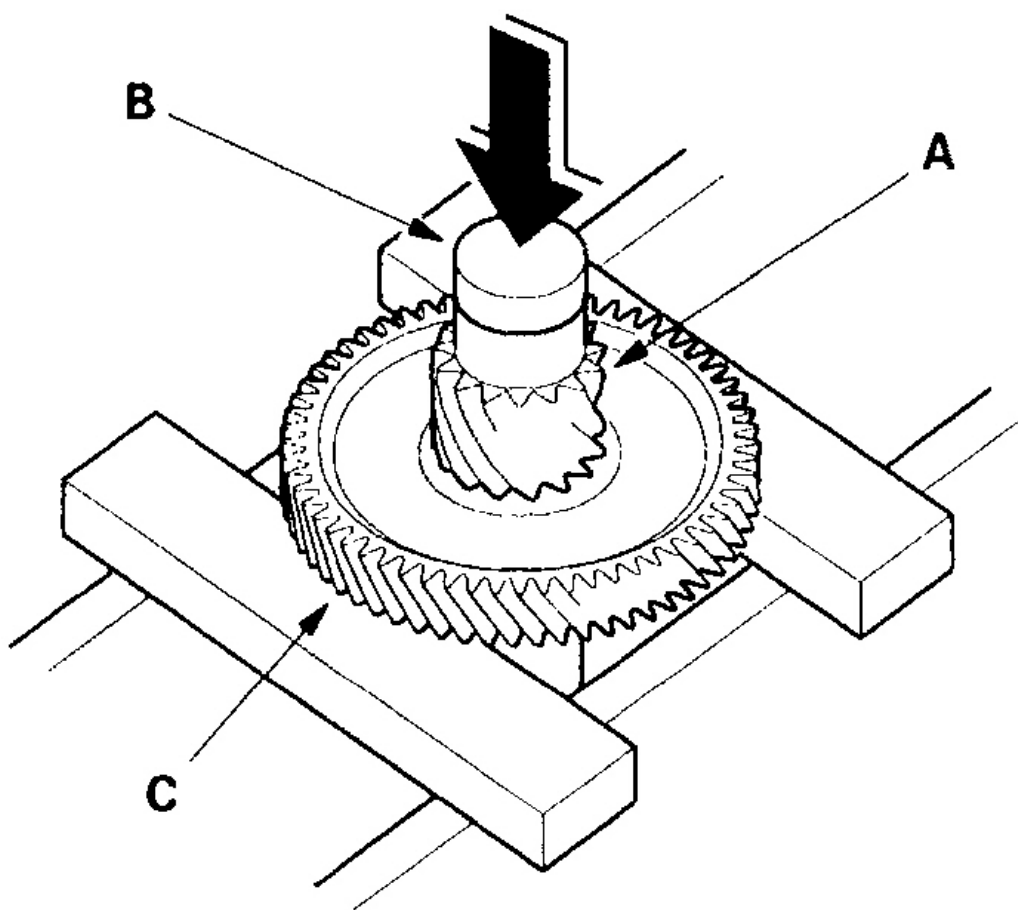
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Fig. 60: Removing 1st Gear & 4th Gear From Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT 4TH GEAR & REVERSE SELECTOR HUB INSTALLATION

Special Tools Required: Driver, 40 mm I.D. 07746-0030100.

1. Apply ATF to the parts.
2. Install the 1st gear on the countershaft by hand.
3. Align the shaft splines with those on 4th gear, then press the countershaft (A) into the 4th gear with a press. Place a shaft protector (B) between the countershaft and press to prevent damaging the countershaft.



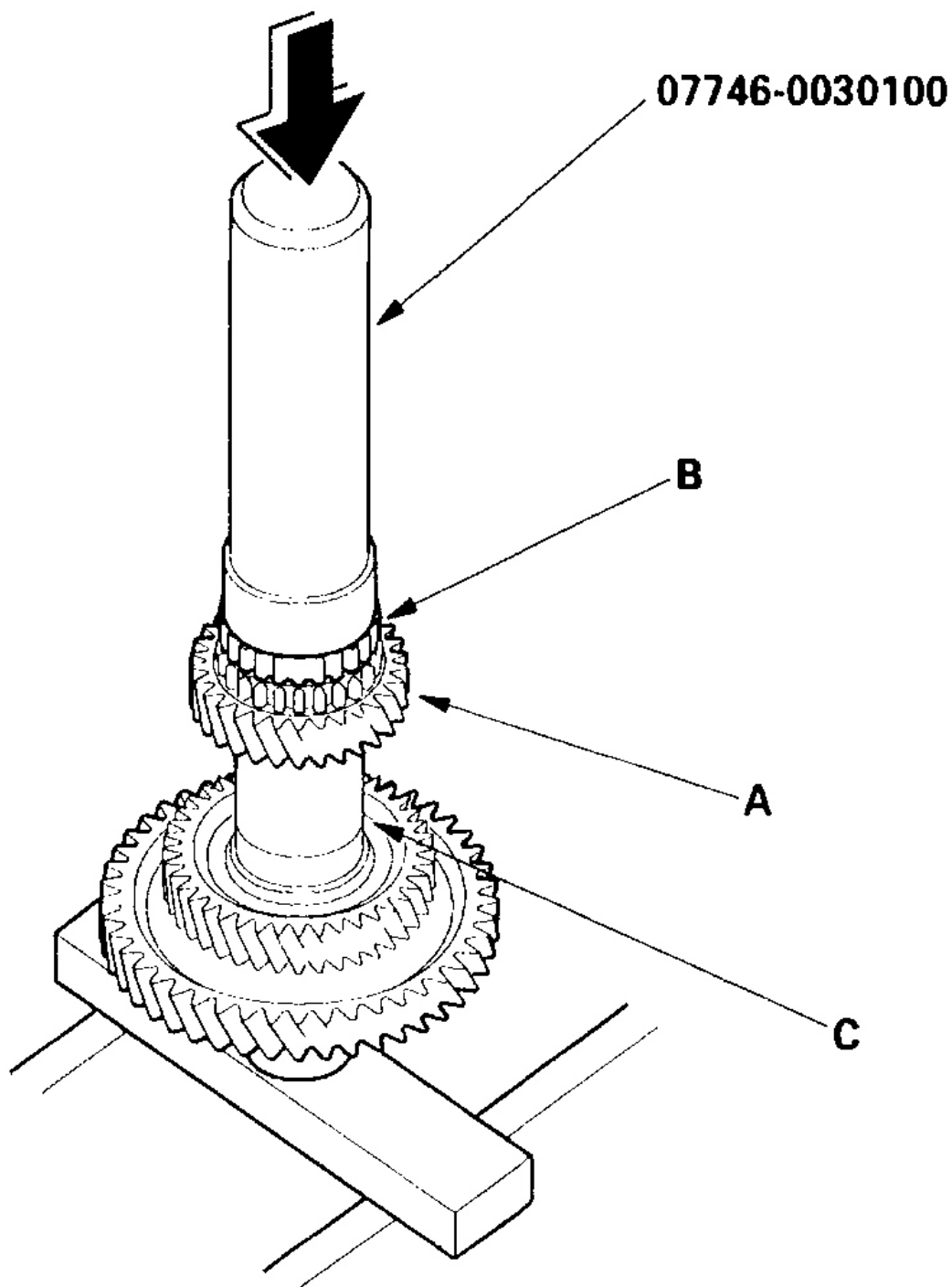
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Fig. 61: Pressing Countershaft Into 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Stop pressing the countershaft when the 4th gear contacts the 1st gear (C).

5. Install the 31 mm cotters, 35 x 47 x 45.6 mm distance collar, 31 mm cotters, 35 x 47 x 7.8 mm distance collar, snap ring, needle bearing, and 5th gear (A) on the countershaft.
6. Slide the reverse selector hub (B) over the countershaft (C), and then press it into place with the special tool and a press.

NOTE: **Some reverse selector hubs are not press fitted, and can be installed without using the special tool and a press.**



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Fig. 62: Installing Reverse Selector Hub On Countershaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

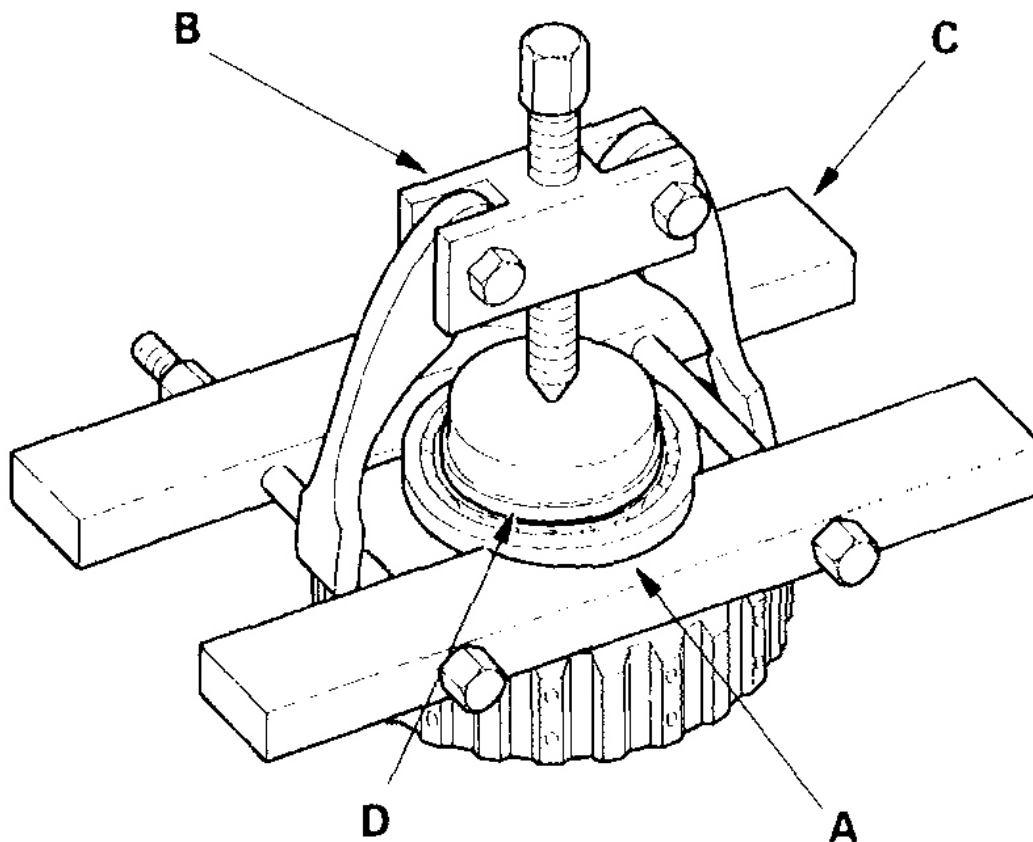
3RD CLUTCH BALL BEARING REPLACEMENT

Special Tools Required:

- Driver 07749-0010000.
- Attachment, 62 x 68 mm 07746-0010500.

NOTE: Check the bearing for wear and rough movement. If the bearing is OK, removal is not necessary.

1. Remove the ball bearing (A) from the 3rd clutch with a commercially available bearing puller (B), bearing separator (C), and stepper adapter (D).



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Fig. 63: Removing Ball Bearing From 3rd Clutch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing on the 3rd clutch with the special tools and a press.

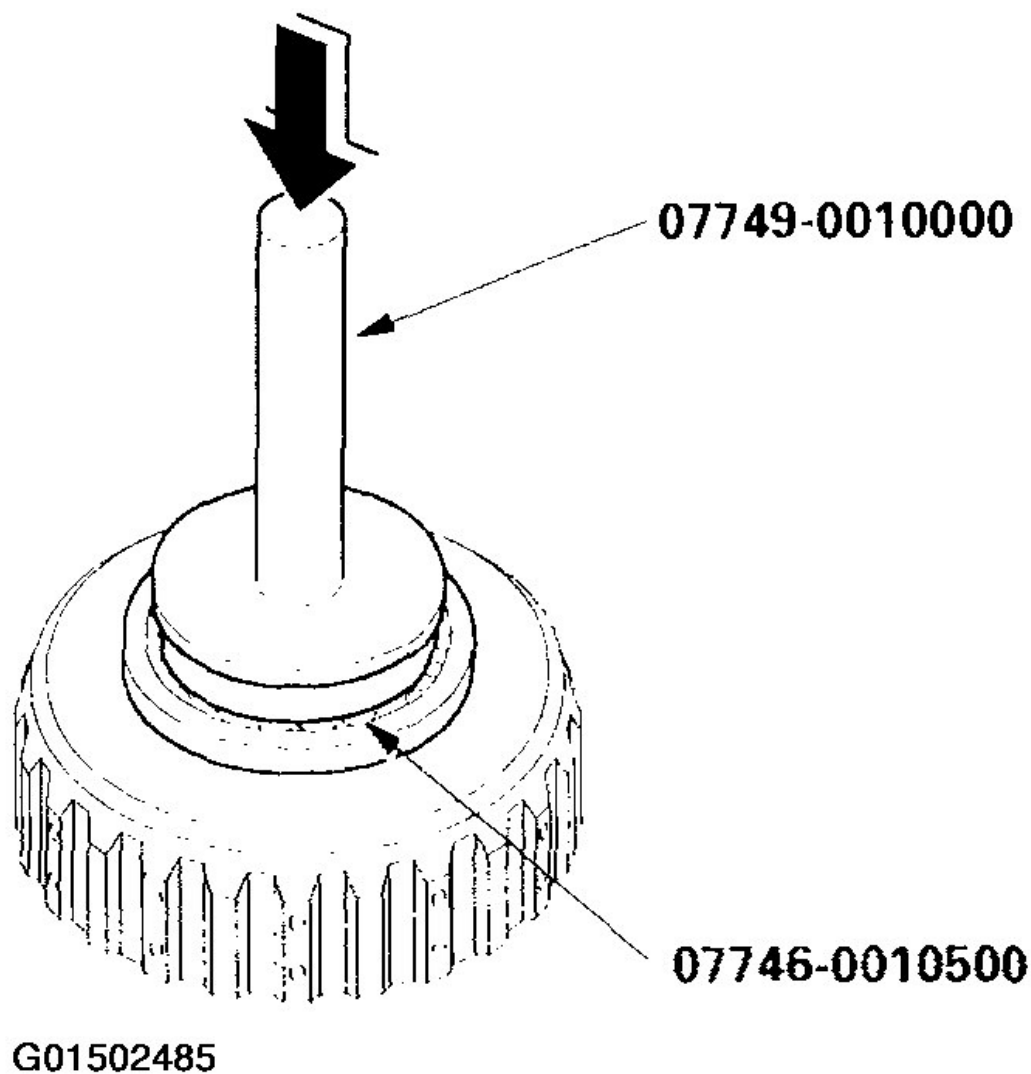
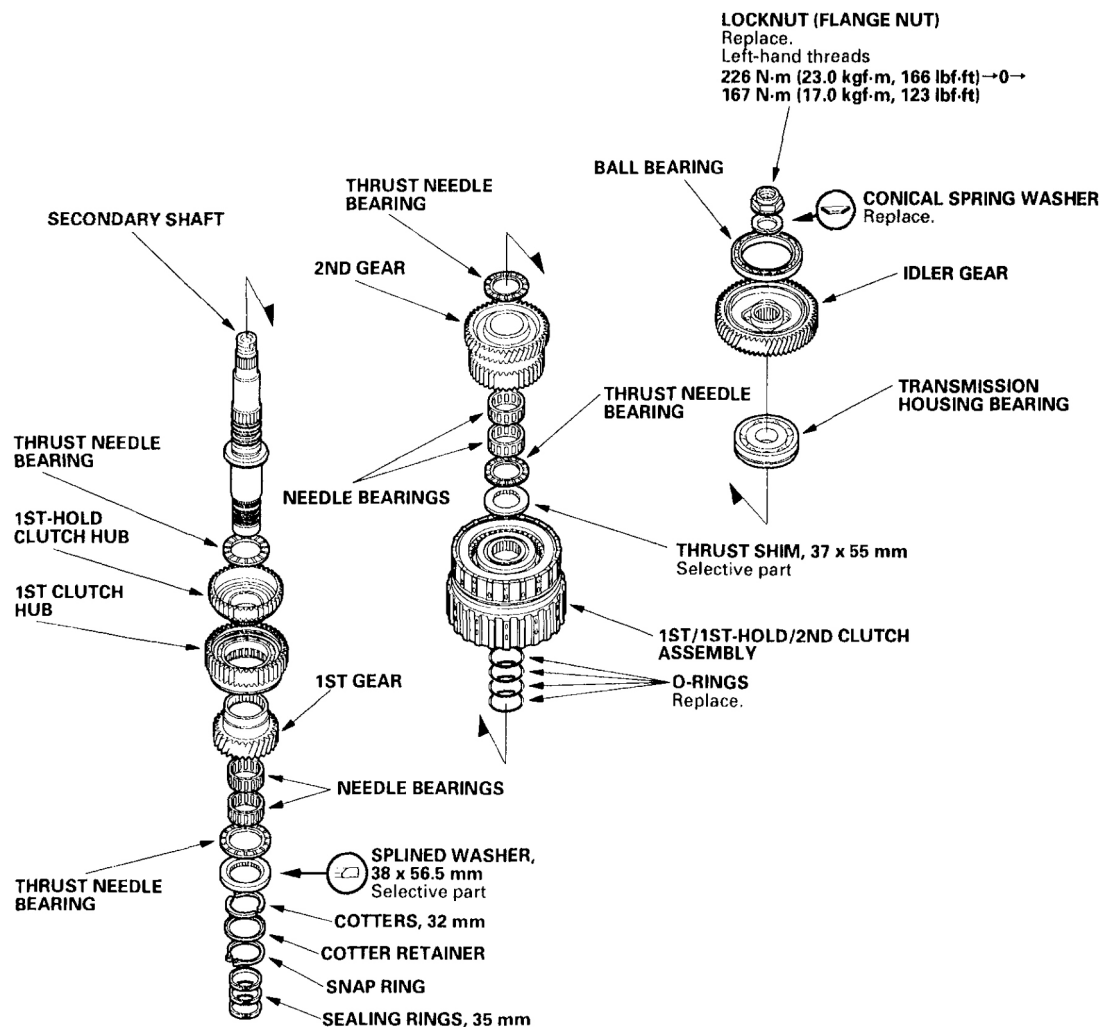


Fig. 64: Installing New Ball Bearing On 3rd Clutch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT DISASSEMBLY, INSPECTION & REASSEMBLY

1. Remove the locknut, and disassemble the shaft and gears.



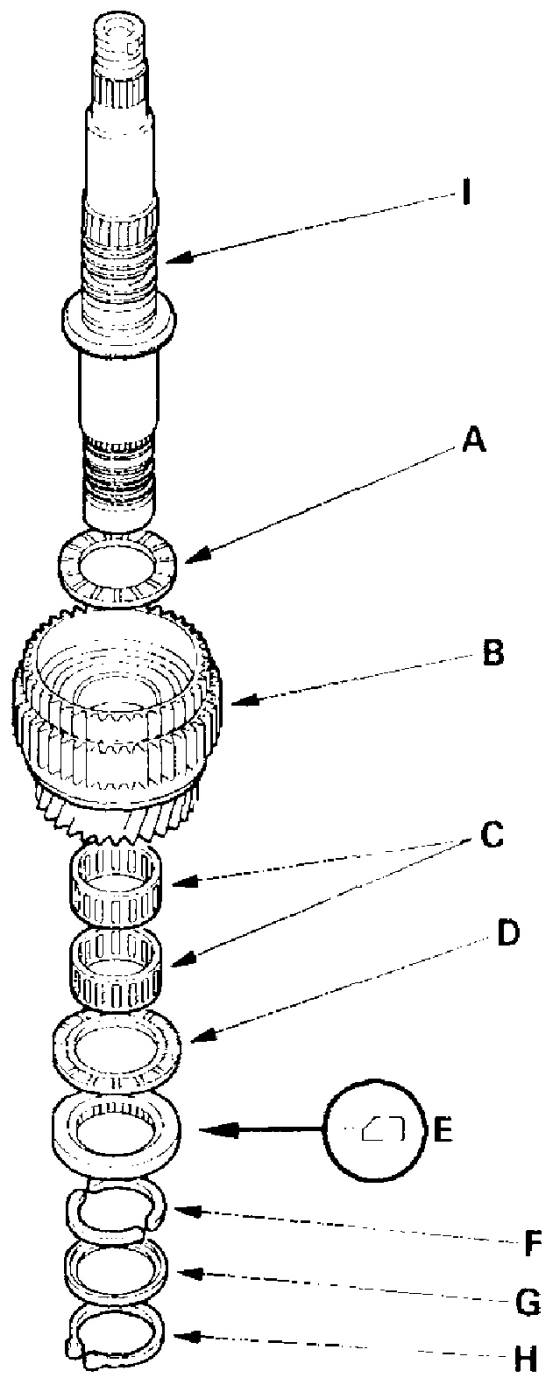
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Fig. 65: Exploded View Of Secondary Shaft Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the thrust needle bearing and needle bearing for galling and rough movement.
3. Check the clearance of the secondary shaft assembly.
4. Check the splines for excessive wear and damage.
5. Check the shaft bearing surfaces for scoring and excessive wear.
6. Check the idler gear bearing for wear and rough movement. If the bearing is worn or damaged, replace it (see **SECONDARY SHAFT IDLER GEAR BEARING REPLACEMENT**).
7. Before installing the O-rings, wrap the shaft splines with tape to prevent damage to the O-rings.
8. Lubricate all parts with ATF during reassembly.
9. Install the conical spring washer and splined washer in the direction shown.

SECONDARY SHAFT CLEARANCE INSPECTION

1. Remove the O-rings from the secondary shaft.
2. Assemble the thrust needle bearing (A), 1st gear assembly (B), needle bearings (C), thrust needle bearing (D), 38 x 56.5 mm splined washer (E), 32 mm cotters (F), cotter retainer (G), and snap ring (H) on the secondary shaft (I).

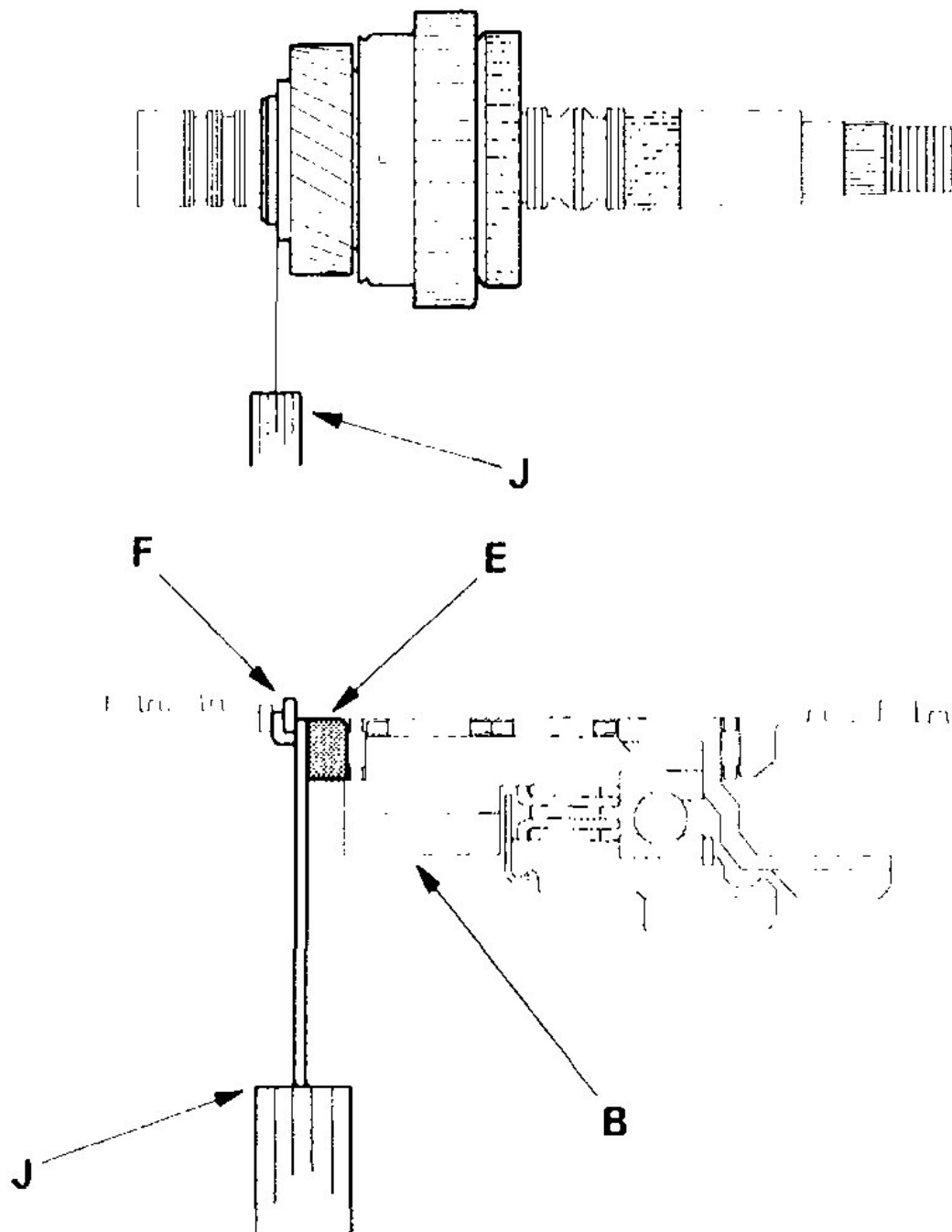


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Fig. 66: Assembling Components On Secondary Shaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the clearance between the 38 x 56.5 mm splined washer (E) and 32 mm cotter pins (F) with a feeler gauge (J) in at least three places. Use the average as the actual clearance.

Standard - 0.07-0.15 mm (0.003-0.006 in.).



G01502488

Fig. 67: Measuring Clearance Between Splined Washer & Cotters

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the measurement is out of standard, remove the splined washer, and measure its thickness.
5. Select and install a new splined washer, then recheck the clearance.

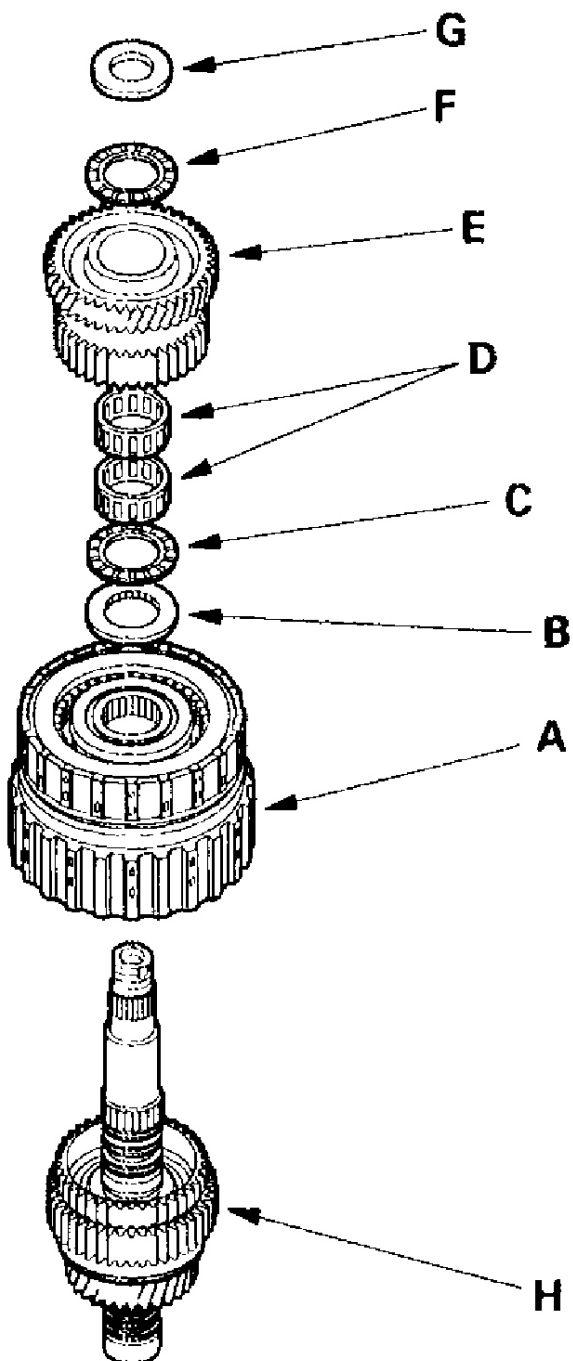
No.	Part Number	Thickness
1	90502-P0Z-000	6.85 mm (0.270 in.)
2	90503-P0Z-000	6.90 mm (0.272 in.)
3	90504-P0Z-000	6.95 mm (0.274 in.)
4	90505-P0Z-000	7.00 mm (0.276 in.)
5	90506-P0Z-000	7.05 mm (0.278 in.)
6	90507-P0Z-000	7.10 mm (0.280 in.)

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Fig. 68: Splined Washer Selection Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

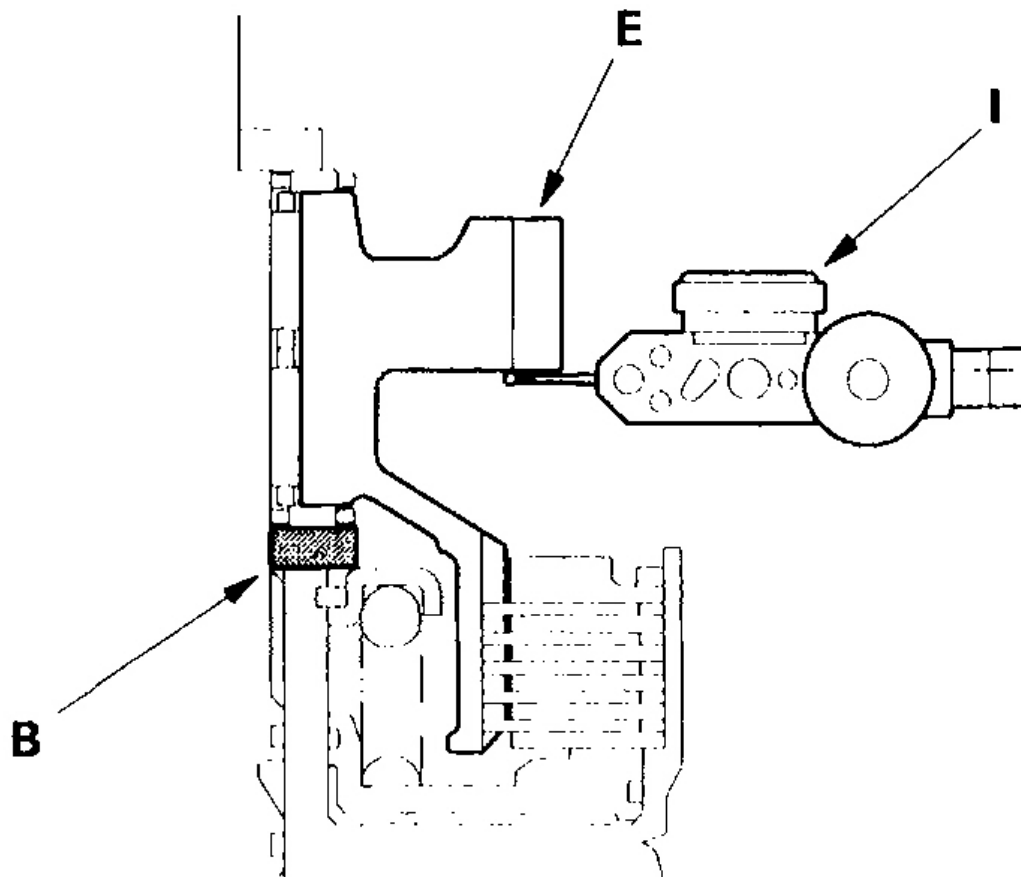
6. Remove the 27 x 47 x 5 mm thrust washer from the mainshaft.
7. Assemble the 1st/1st-hold/2nd clutch assembly (A), 37 x 55 mm thrust washer (B), thrust needle bearing (C), needle bearings (D), 2nd gear (E), thrust needle bearing (F), and 27 x 47 x 5 mm thrust washer (removed from mainshaft) (G) on the secondary shaft subassembly (H).



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Fig. 69: Assembling Components On Secondary Shaft Subassembly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Set the dial indicator (I) on the 2nd gear (E).



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Fig. 70: Installing Dial Indicator On 2nd Gear To Measure 2nd Gear Axial Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Hold the 27 x 47 x 5 mm thrust washer (G) against the clutch assembly (A), and measure the 2nd gear axial clearance in at least three places while moving the 2nd gear (E). Use the average as the actual clearance.

Standard - 0.04-0.12 mm (0.002-0.005 in.).

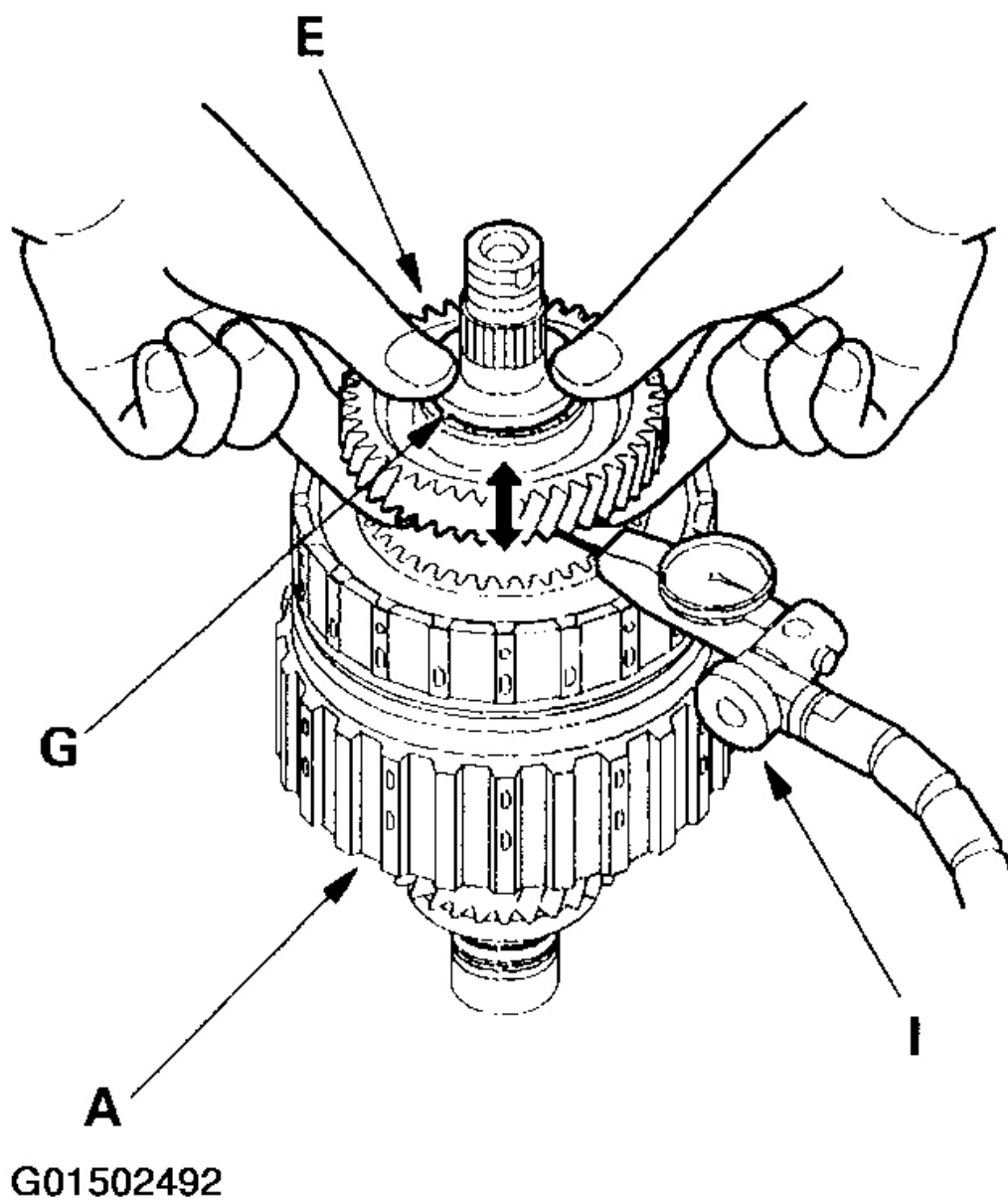


Fig. 71: Measuring 2nd Gear Axial Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. If the measurement is out of standard, remove the 37 x 55 mm thrust washer and measure its thickness.
11. Select and install a new thrust washer, then recheck the clearance.

No.	Part Number	Thickness
1	90406-P0Z-000	4.90 mm (0.193 in.)
2	90407-P0Z-000	4.95 mm (0.195 in.)
3	90408-P0Z-000	5.00 mm (0.197 in.)
4	90409-P0Z-000	5.05 mm (0.199 in.)
5	90410-P0Z-000	5.10 mm (0.201 in.)
6	90411-P0Z-000	5.15 mm (0.203 in.)
7	90412-P0Z-000	5.20 mm (0.205 in.)

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Fig. 72: Thrust Shim Selection Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Disassemble the shaft and gears.
13. Reinstall the 27 x 47 x 5 mm thrust washer on the mainshaft.

SECONDARY SHAFT IDLER GEAR BEARING REPLACEMENT**Special Tools Required:**

- Driver 07749-0010000.
 - Attachment, 78 x 90 mm 07GAD-SD40101.
1. Check the bearing for wear, damage, and rough movement. If the bearing is worn or damaged, go to step 2.
 2. Place the secondary shaft idler gear in a vise with soft jaws.
 3. Remove the bearing (A) from the secondary shaft idler gear (B) with a puller (C).

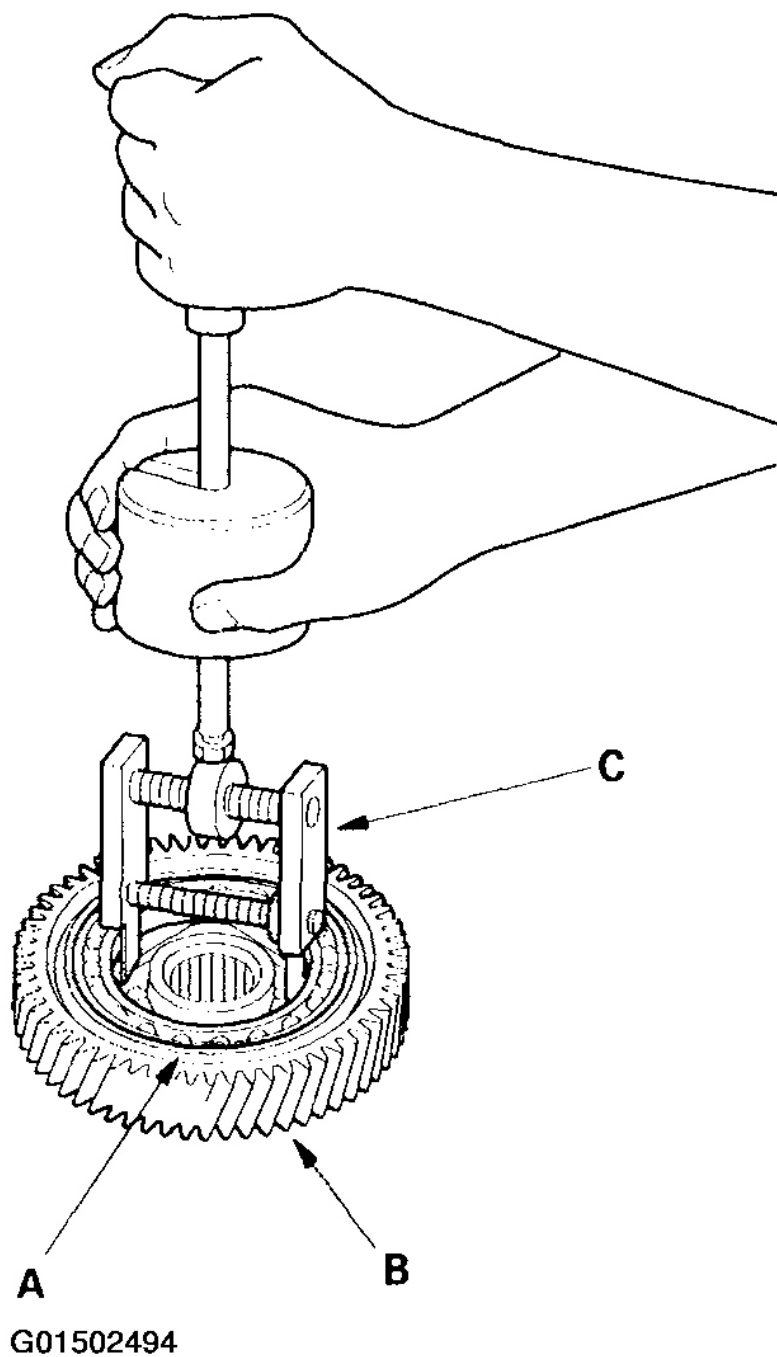


Fig. 73: Removing Bearing From Secondary Shaft Idler Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the bearing on the secondary shaft idler gear with the special tools and a press.

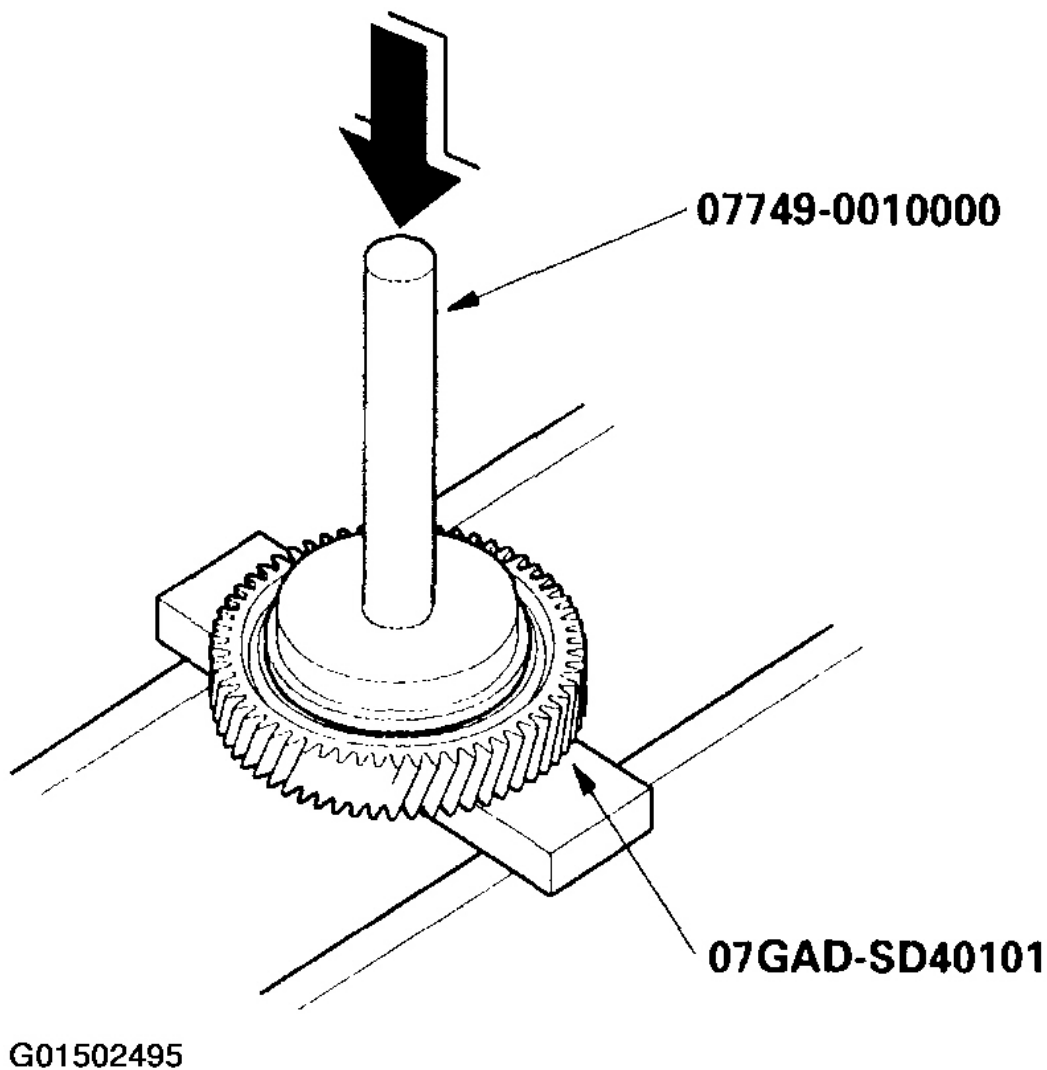


Fig. 74: Installing Bearing On Secondary Shaft Idler Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1ST GEAR ONE-WAY CLUTCH INSPECTION

1. Hold the 1st-hold clutch hub (A), and turn the 1st gear (B) in the direction shown to be sure it turns freely. Also make sure the 1st gear does not turn in the opposite direction.

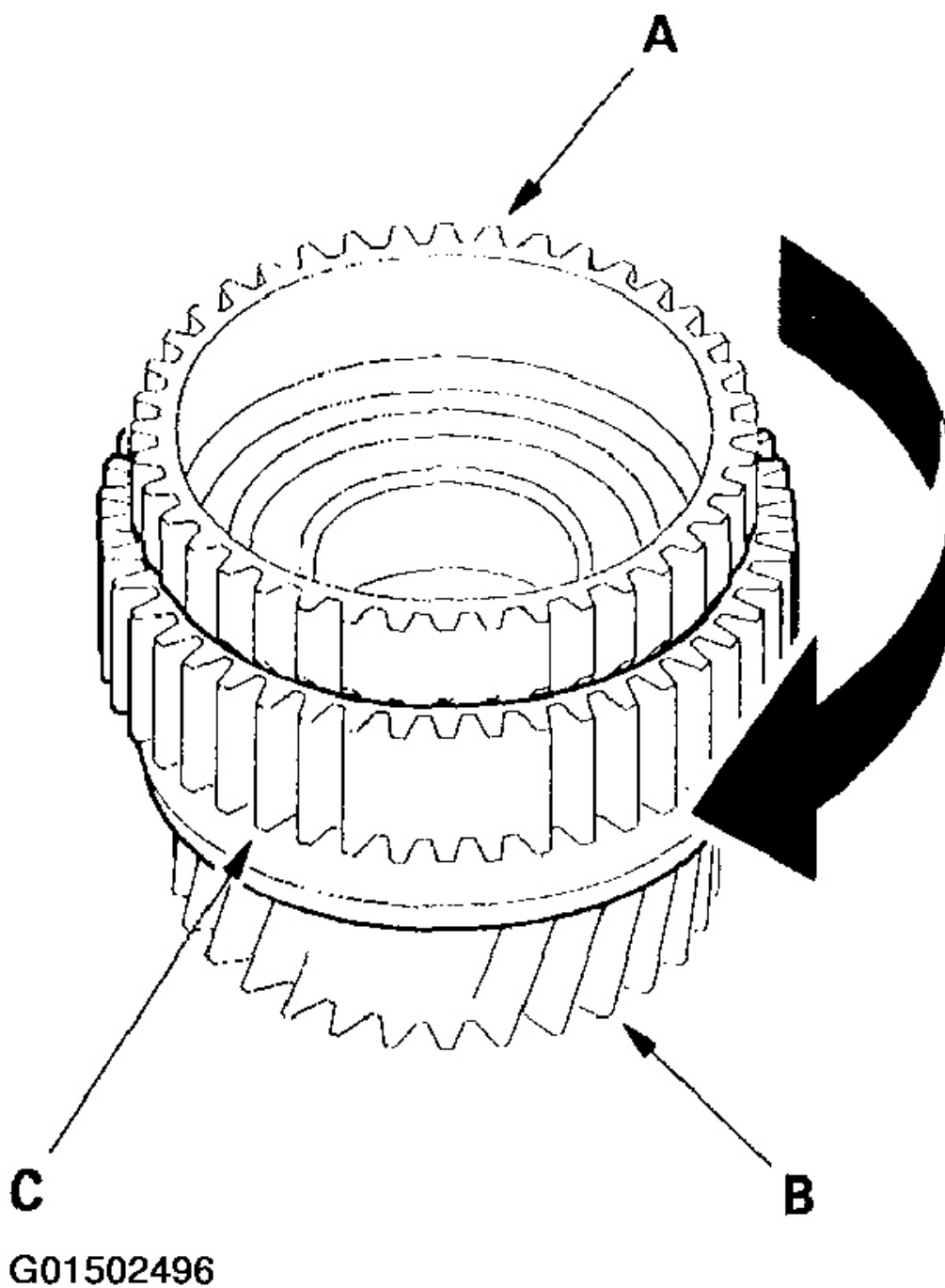


Fig. 75: Checking Free Movement Of 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If any problem occurs on the 1st gear one-way clutch, replace the 1st clutch hub (C). The 1st gear one-way clutch is not available separately from the 1st clutch hub.

1ST CLUTCH HUB REPLACEMENT

Special Tools Required:

- Driver 07749-0010000.
- Driver attachment 07947-6340500.
- Attachment, 78 x 90 mm 07GAD-SD40101.

1. Remove the 1st-hold clutch hub (A) from the 1st gear (B) with the special tools and a press.

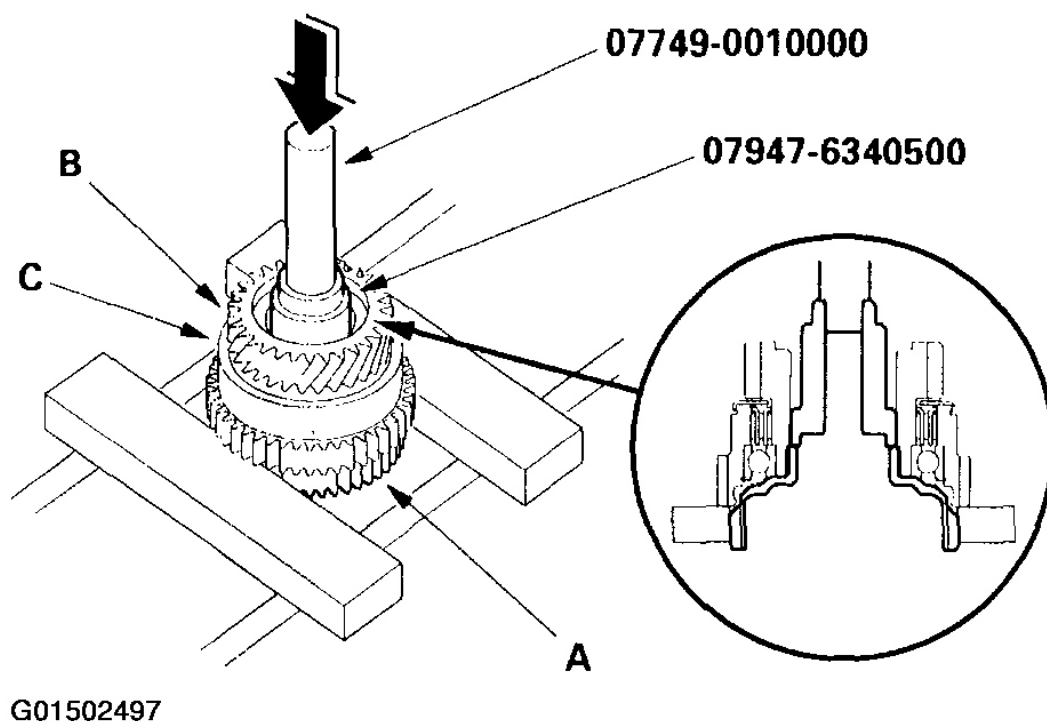
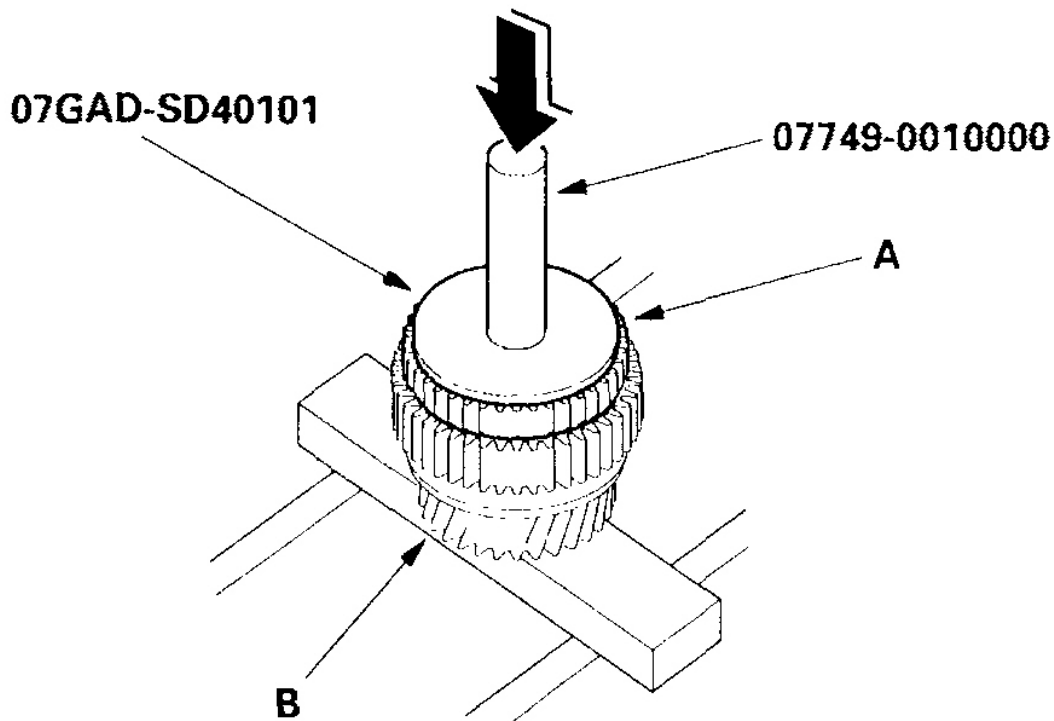


Fig. 76: Removing 1st-Hold Clutch Hub From 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the 1st clutch hub (C) from the 1st gear, then install the new 1st clutch hub in the 1st gear.
3. Install the 1st-hold clutch hub (A) in the 1st gear (B) with the special tools and a press.



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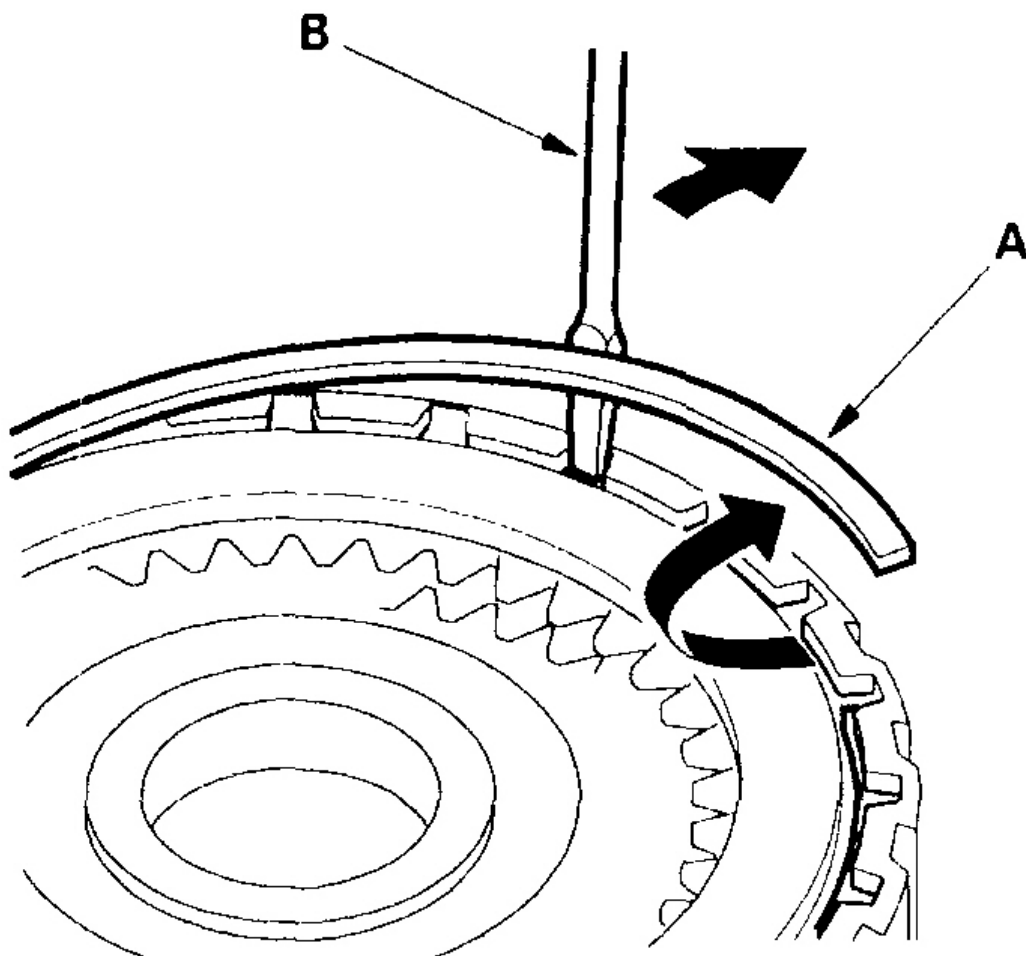
Fig. 77: Installing 1st-Hold Clutch Hub Into 1st Gear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH DISASSEMBLY

Special Tools Required:

- Clutch spring compressor attachment 07LAE-PX40100.
- Clutch spring compressor attachment 07HAE-PL50101.
- Clutch spring compressor bolt assembly 07GAE-PG40200 or 07GAE-PG4020A.

1. Remove the snap ring (A), then remove the clutch end plate, the clutch discs, and the plates with a screwdriver (B).



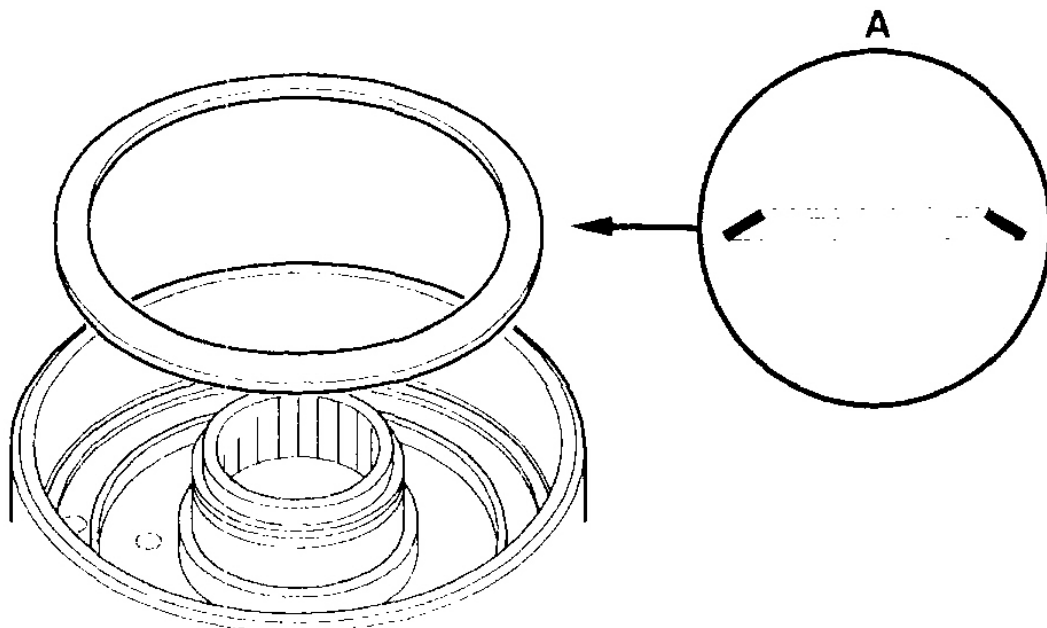
G01502499

Fig. 78: Removing Clutch Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the disc spring (A) from the 1st, 3rd, 4th and 5th clutches.

NOTE: The 2nd clutch and 1st-hold clutch do not have a disc spring.



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Fig. 79: Identifying Disc Springs

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the special tools on the 4th/5th clutch assembly and 1st clutch.

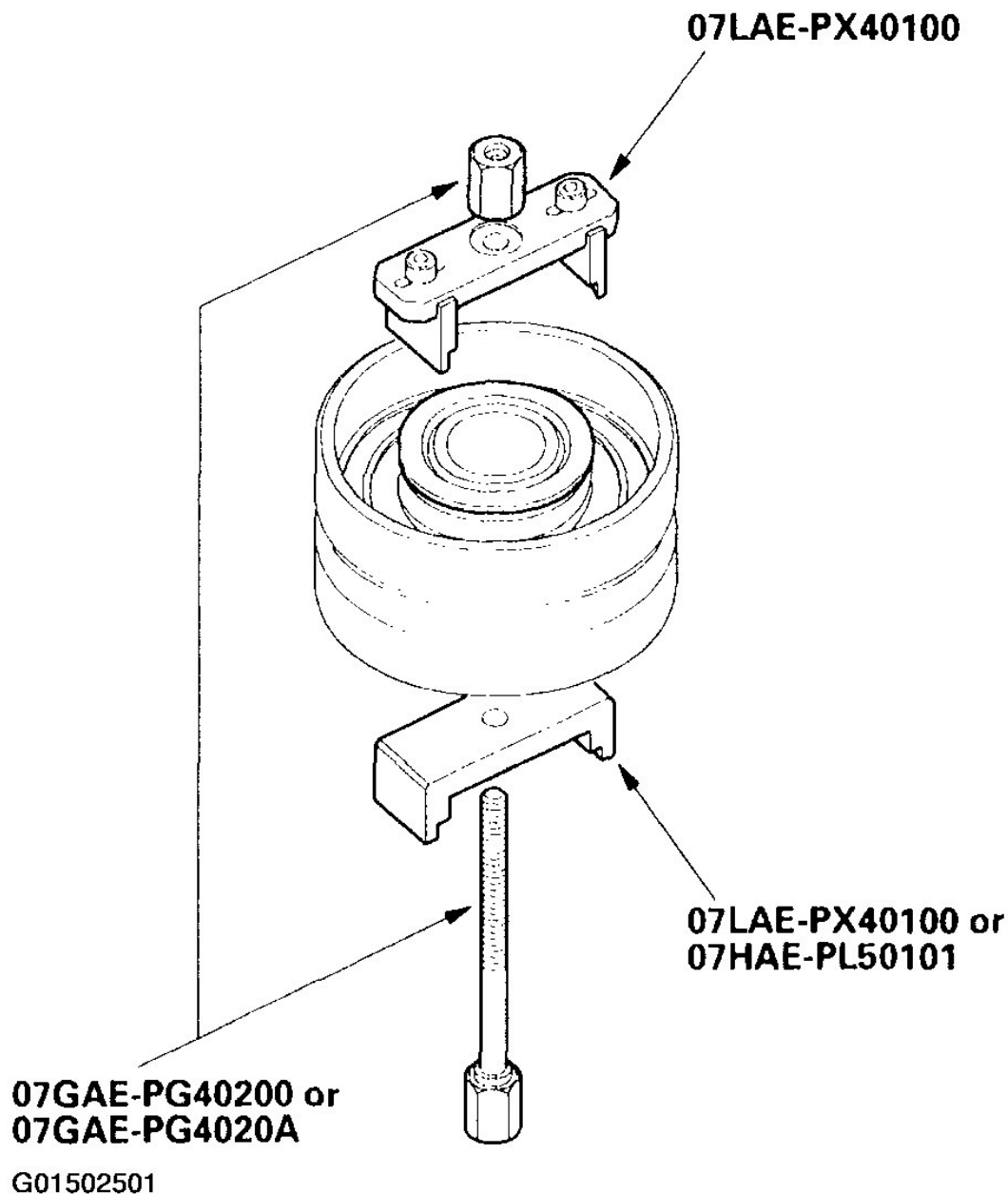
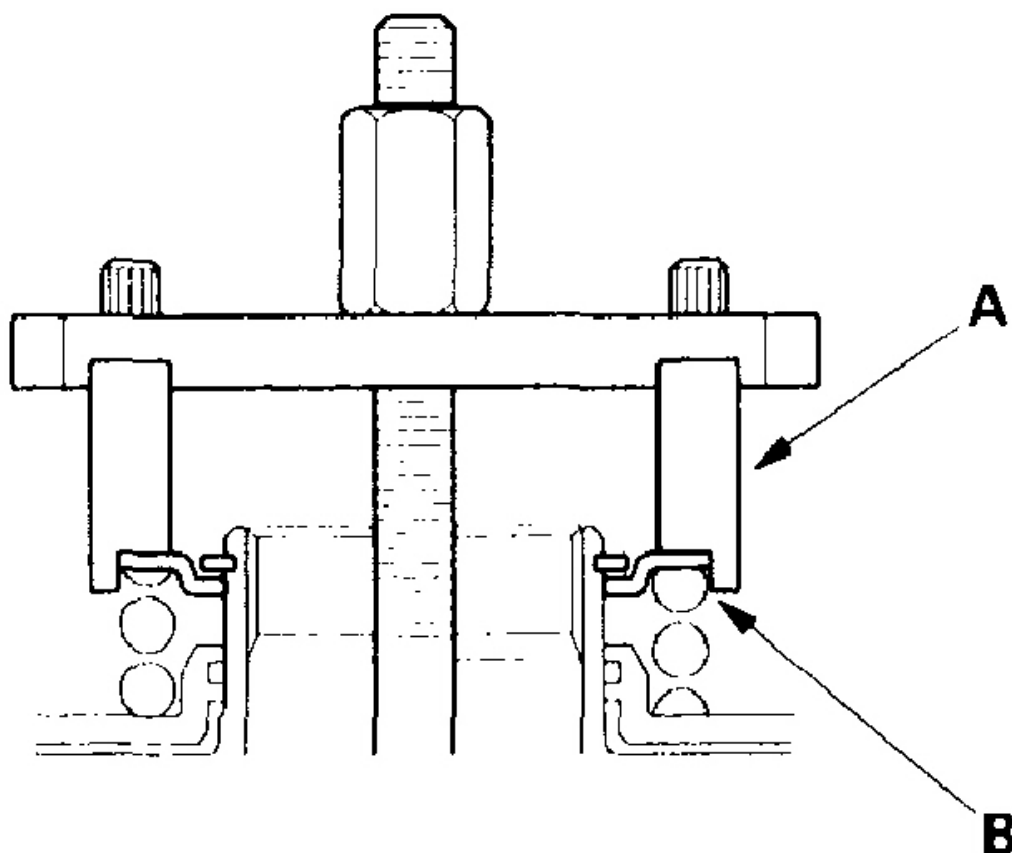


Fig. 80: Installing Special Tools On 4th/5th Clutch Assembly & 1st Clutch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

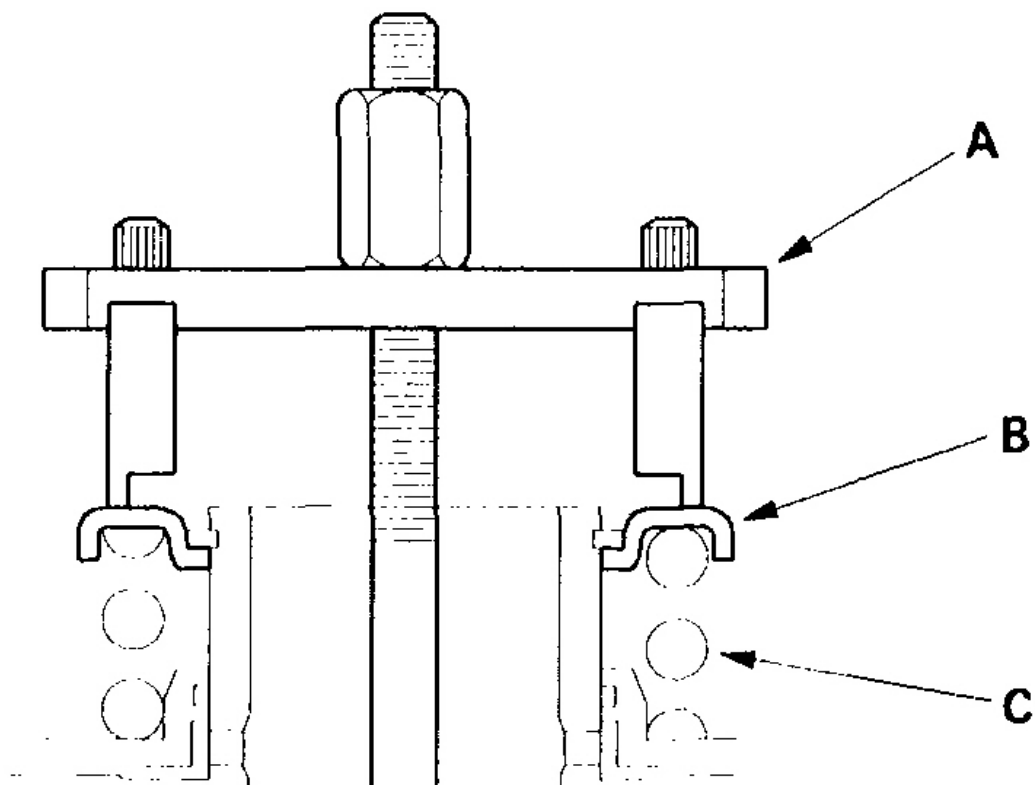
4. Be sure the special tool (A) is adjusted to have full contact with the spring retainer (B) on the 4th, 5th and 1st clutches.



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Fig. 81: Ensuring Full Contact Of Special Tool With Spring Retainer On 4th, 5th & 1st Clutches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

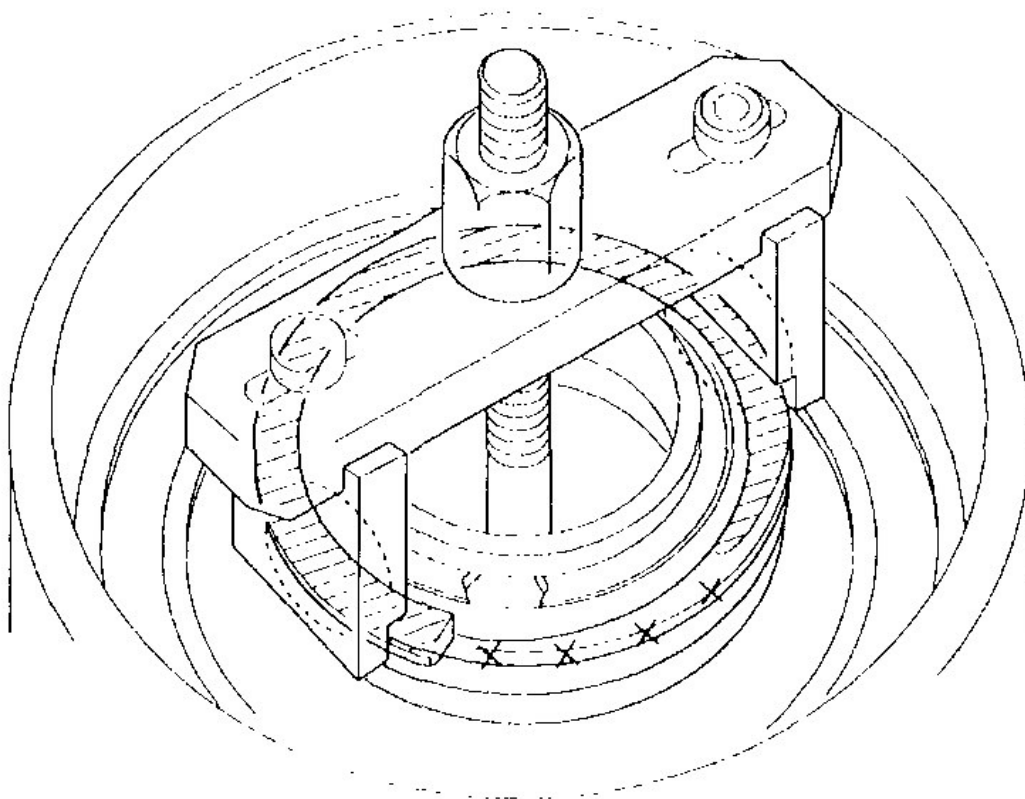
5. Set the special tool (A) on the spring retainer (B) of the 2nd and 3rd clutches so the tool works on the clutch return spring (C).



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Fig. 82: Setting Special Tool On Spring Retainer Of 2nd & 3rd Clutches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If either end of the special tool is set over an area of the spring retainer which is unsupported by the return spring, the retainer may be damaged.

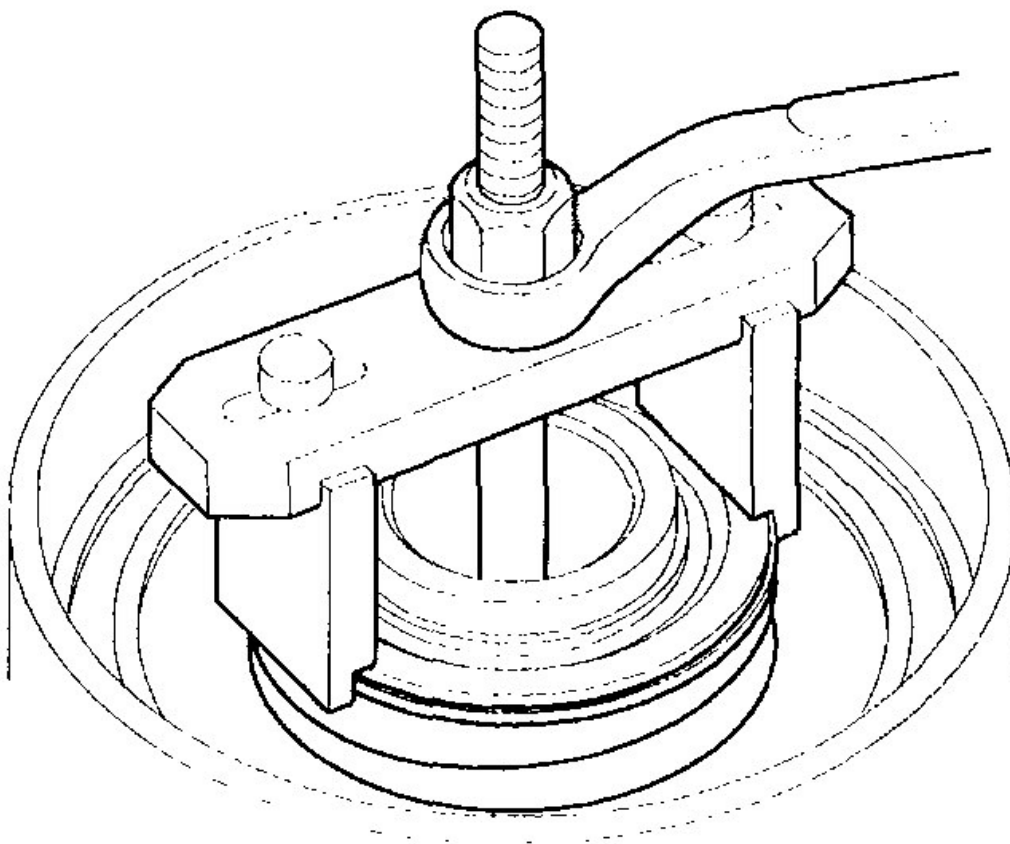


G01502504

Fig. 83: DO NOT Allow Either End Of Special Tool To Set Over An Area Of Spring Retainer Unsupported By Return Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Compress the spring until the snap ring can be removed.



G01502505

Fig. 84: Compressing Clutch Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the snap ring (A). Then remove the special tool (B), spring retainer (C), and the return spring.

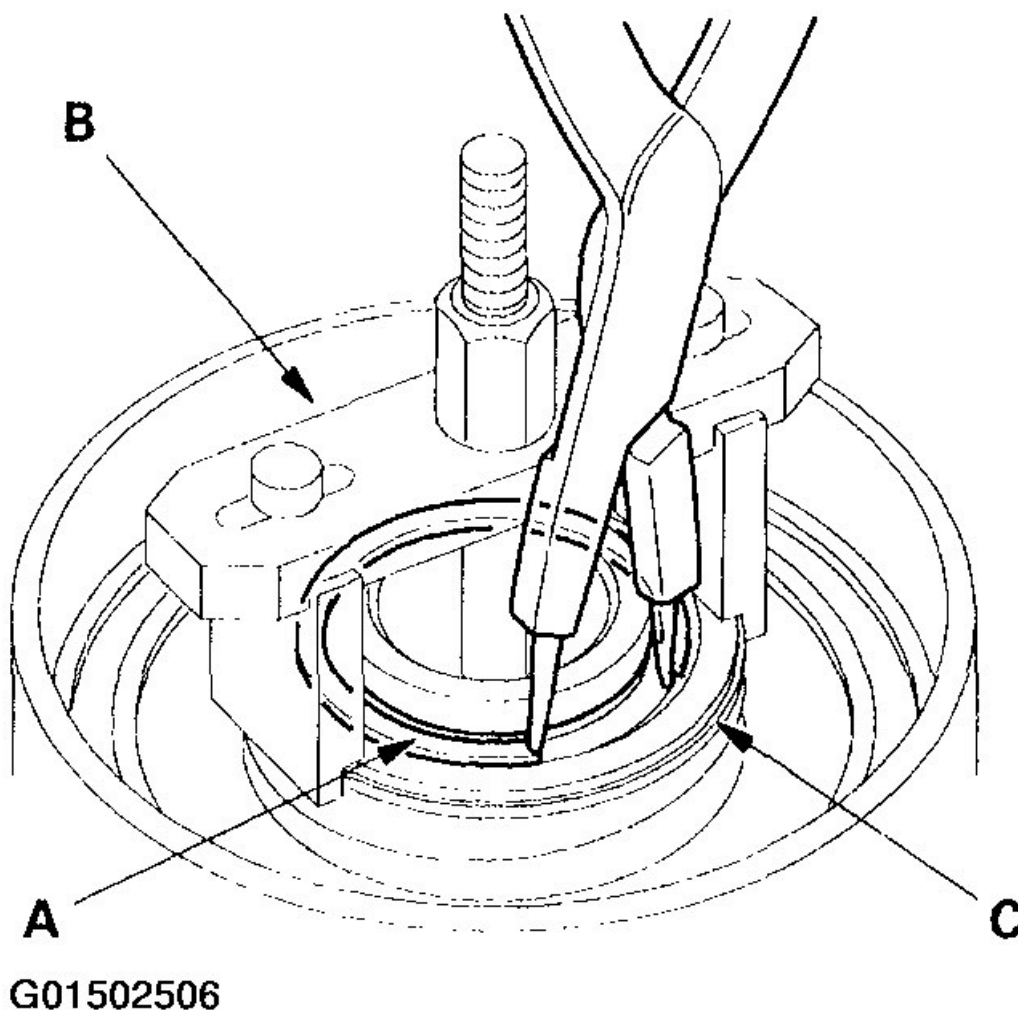
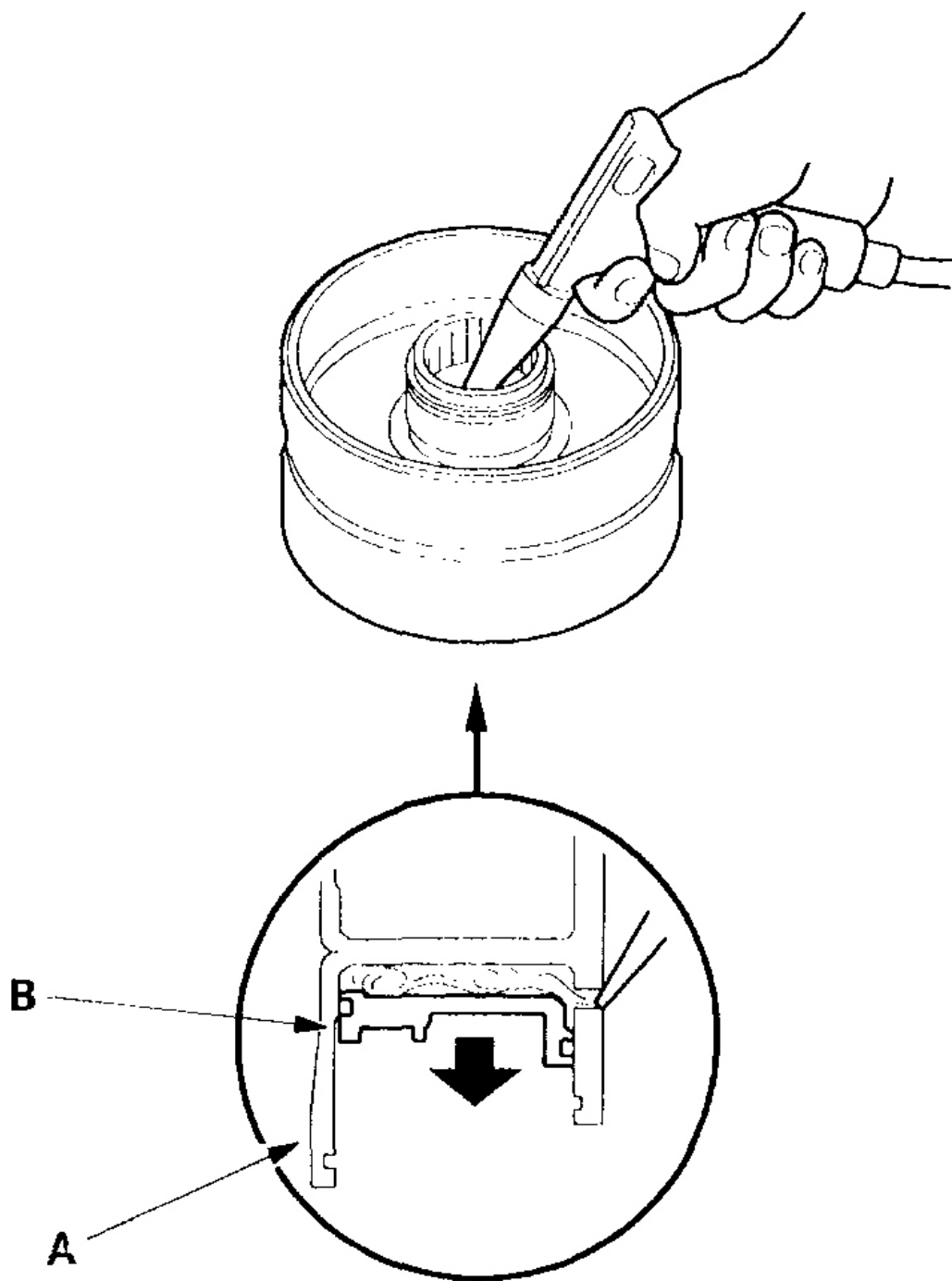


Fig. 85: Removing Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Wrap a shop rag around the clutch drum (A), and apply air pressure to the fluid passage to remove the piston (B). Place a finger tip on the other end while applying air pressure.



G01502507

Fig. 86: Applying Air Pressure To Remove Piston

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH INSPECTION

1st/1st-Hold/2nd Clutch

1. Inspect the clutch piston and clutch piston check valve. If the clutch check valve is loose or stuck damaged, replace the clutch piston.

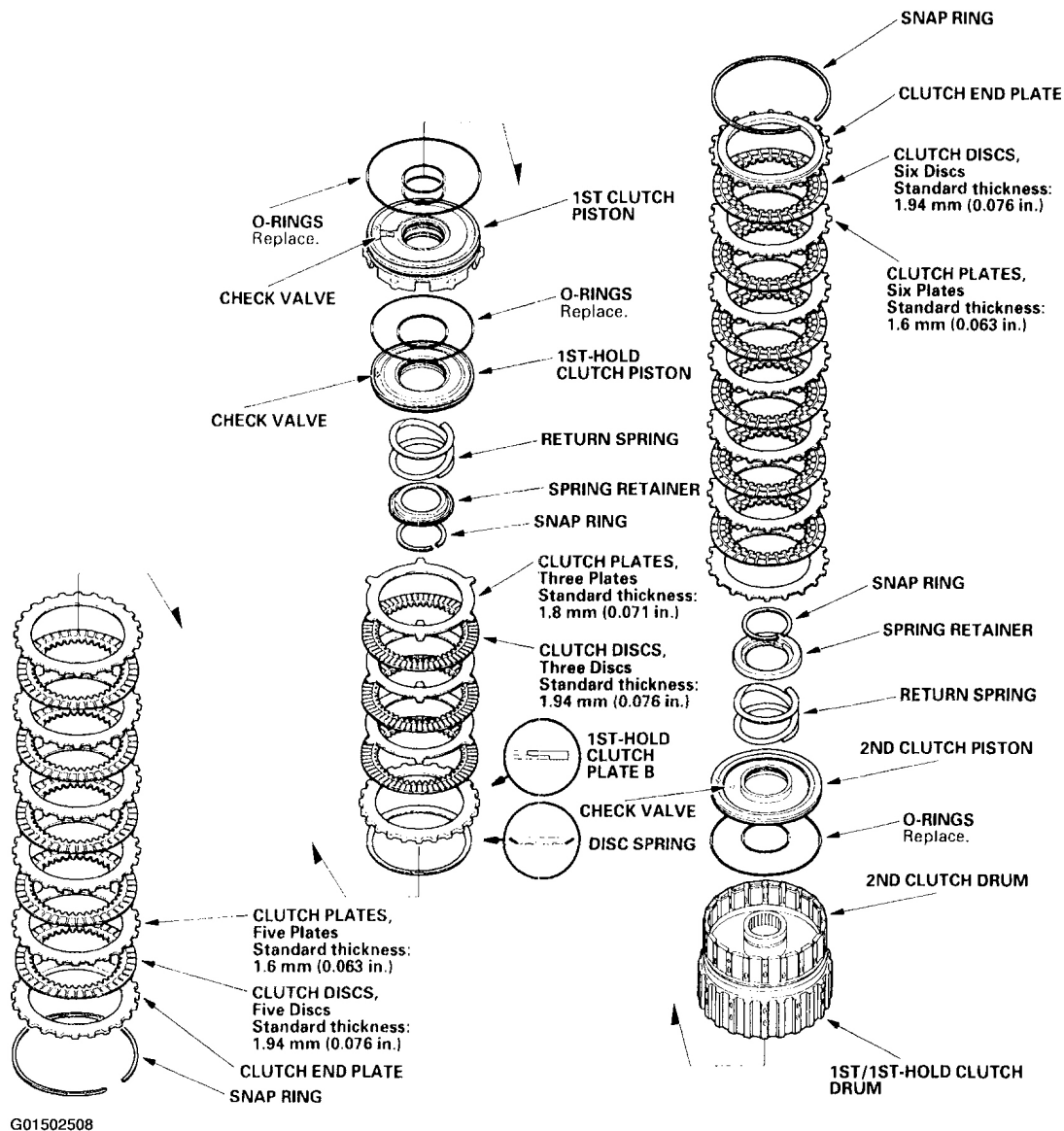


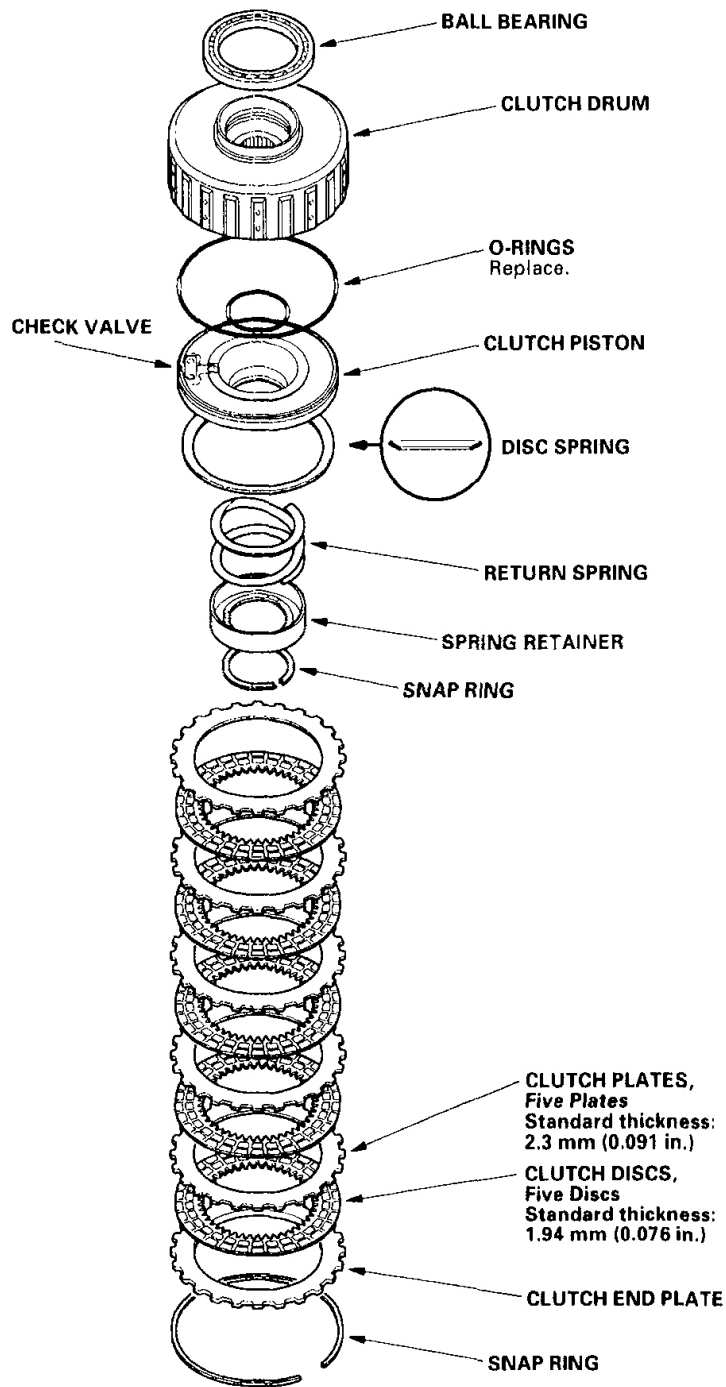
Fig. 87: Exploded View Of Clutch Assemblies
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the spring retainer for wear and damage.

3. Inspect the clutch discs, clutch plates, and clutch end plate for wear, damage, and discoloration.
 - If the clutch discs are worn or damaged, replace the discs as a set.
 - If the clutch plates are worn, damaged, or discolored, replace the plates as a set.
 - If the clutch end plate is worn, damaged, or discolored, inspect the clutch end-plate-to-top-disc clearance, then replace the clutch-end-plate.
 - If the 1st-hold clutch plate B is worn, damaged, or discoloration, inspect the 1st-hold clutch plate B-to-top-disc clearance, then replace plate B.

3rd Clutch

1. Inspect the clutch piston and clutch piston check valve. If the clutch check valve is loose or stuck damaged, replace the clutch piston.



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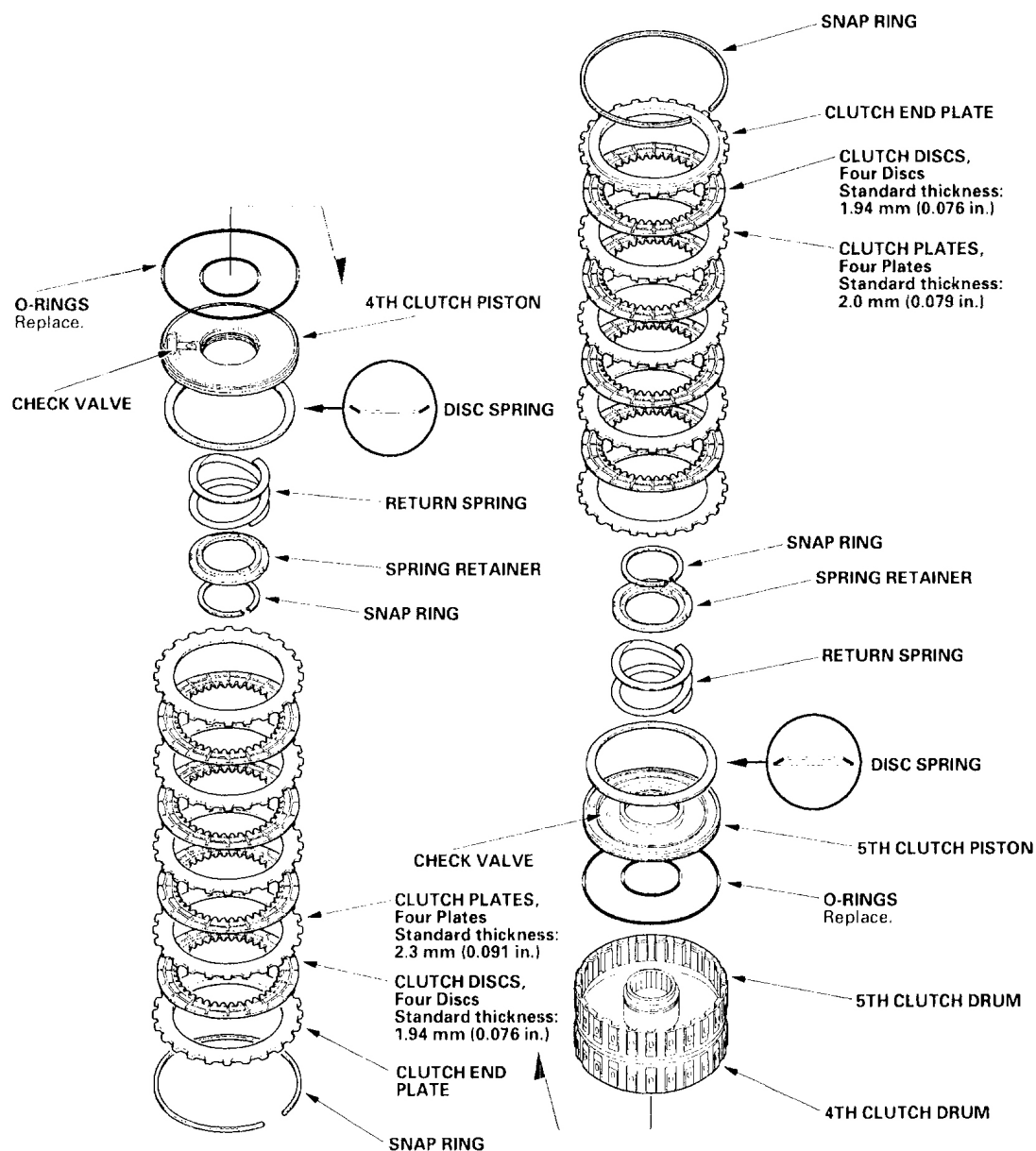
Fig. 88: Exploded View Of 3rd Clutch Assembly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the spring retainer for wear and damage.
3. Inspect the clutch discs, clutch plates, and clutch end plate for wear, damage, and discoloration.

- If the clutch discs are worn or damaged, replace the discs as a set.
 - If the clutch plates are worn, damaged, or discolored, replace the plates as a set.
 - If the clutch end plate is worn, damaged, or discolored, inspect the clutch end-plate-to-top-disc clearance, then replace the clutch-end-plate.
4. If the 3rd clutch assembly, clutch discs, or clutch plates are replaced, replace the PCM (see **HOW TO REMOVE THE PCM FOR TESTING**).

4th/5th Clutch

1. Inspect the clutch piston and clutch piston check valve. If the clutch check valve is loose or stuck damaged, replace the clutch piston.



G01502510

Fig. 89: Exploded View Of 4th/5th Clutch Assembly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the spring retainer for wear and damage.
3. Inspect the clutch discs, clutch plates, and clutch end plate for wear, damage, and discoloration.
 - If the clutch discs are worn or damaged, replace the discs as a set.
 - If the clutch plates are worn, damaged, or discolored, replace the plates as a set.
 - If the clutch end plate is worn, damaged, or discolored, inspect the clutch end-plate-to-top-disc clearance, then replace the clutch-end-plate.

CLUTCH REASSEMBLY**Special Tools Required:**

- Clutch spring compressor attachment 07LAE-PX40100.
- Clutch spring compressor attachment 07HAE-PL50101.
- Clutch spring compressor bolt assembly 07GAE-PG40200 or 07GAE-PG4020A.
- Clutch compressor attachment 07ZAE-PRP0100.

Note these items during reassembly:

- Clean all parts thoroughly in solvent or carburetor cleaner, and dry them with compressed air.
 - Blow out all passages.
 - Apply ATF to all parts before assembly.
1. Soak the clutch discs thoroughly in ATF for a minimum of 30 minutes.
 2. Inspect the check valve (A) on the clutch pistons (B) except 1st-hold clutch; if it's loose or stuck, replace the piston.

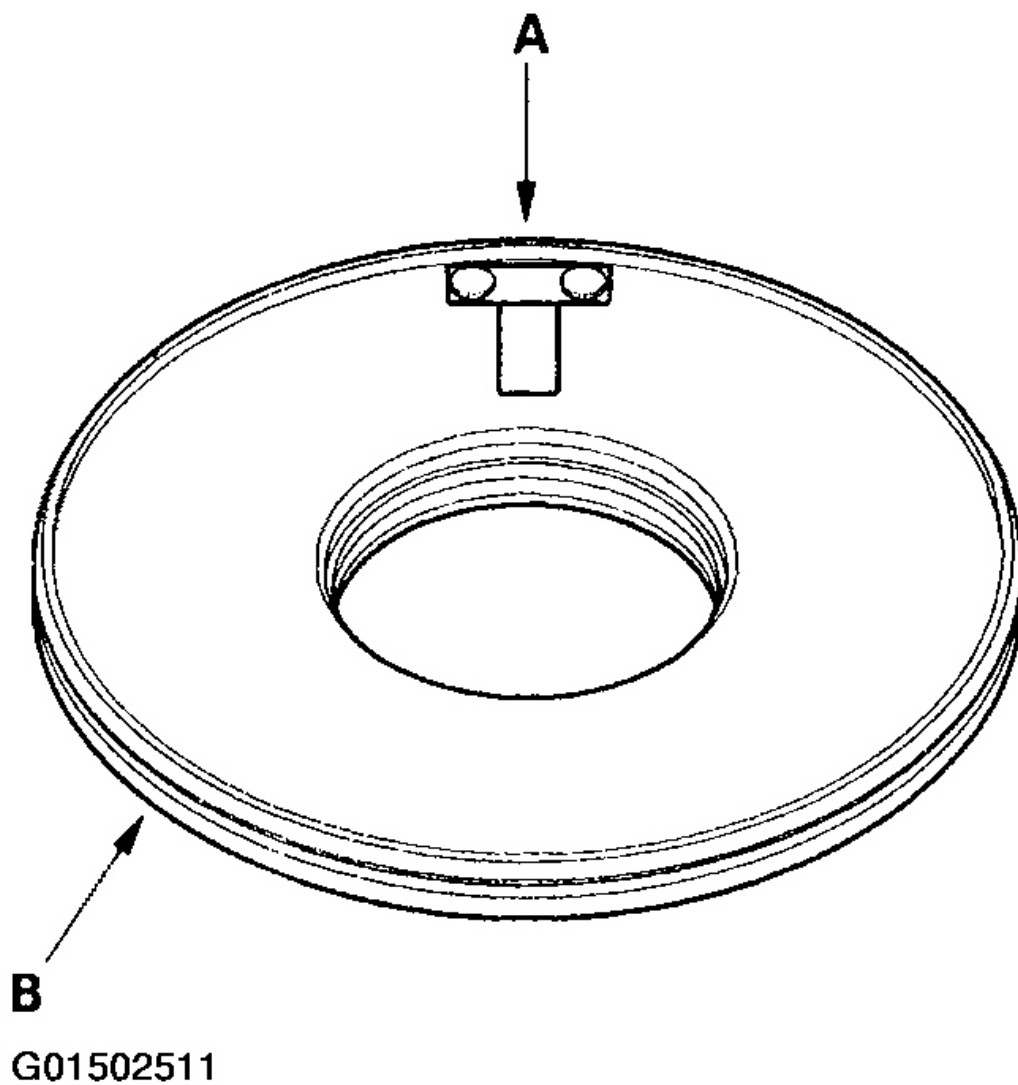
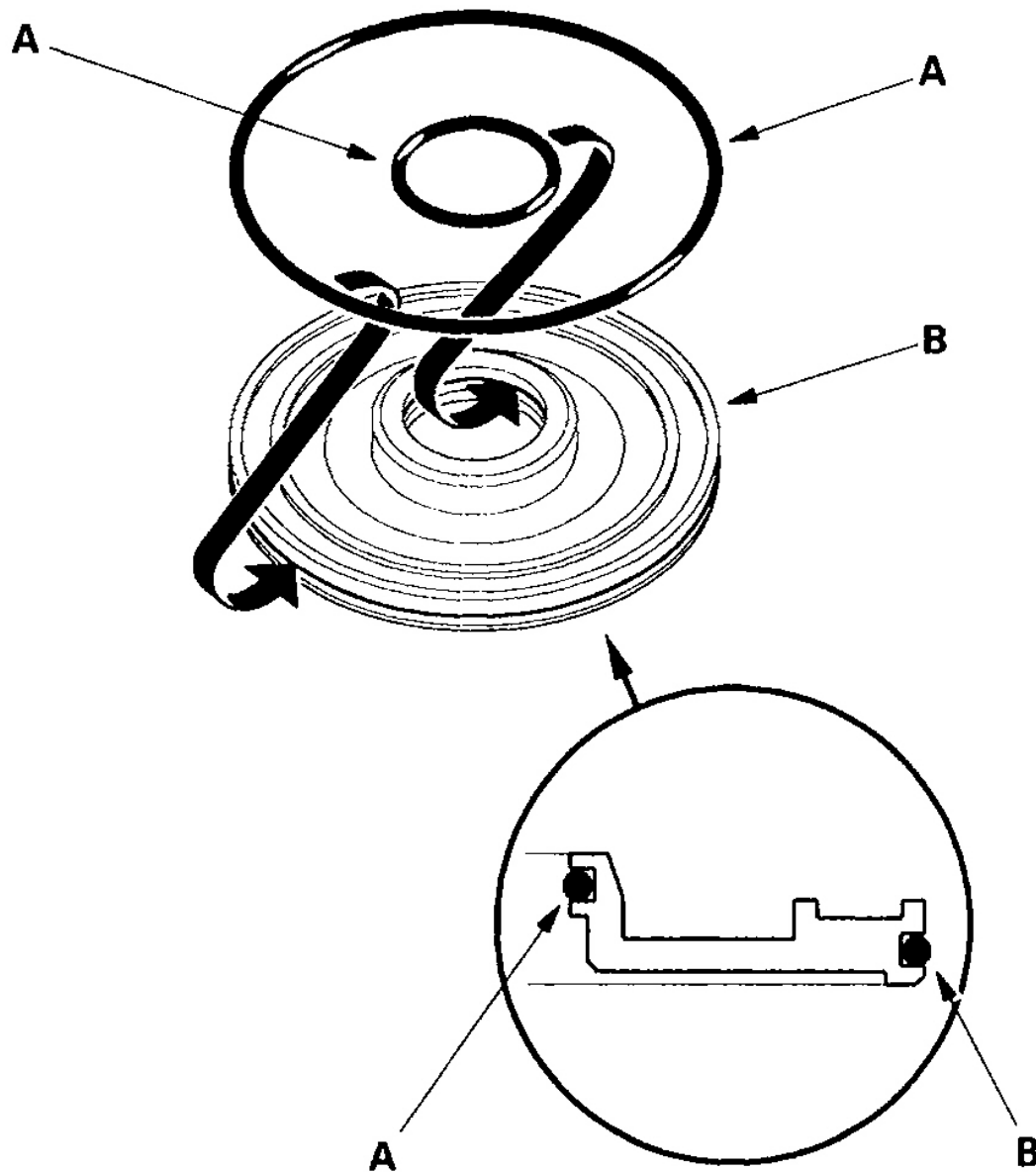


Fig. 90: Identifying Check Valve On Clutch Pistons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install new O-rings (A) on the piston (B).



G01502512

Fig. 91: Installing New O-Rings

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the piston (A) in the clutch drum (B). Apply pressure and rotate to ensure proper seating. Lubricate the piston O-ring with ATF before installing. Do not pinch the O-ring by installing the piston with too much force.

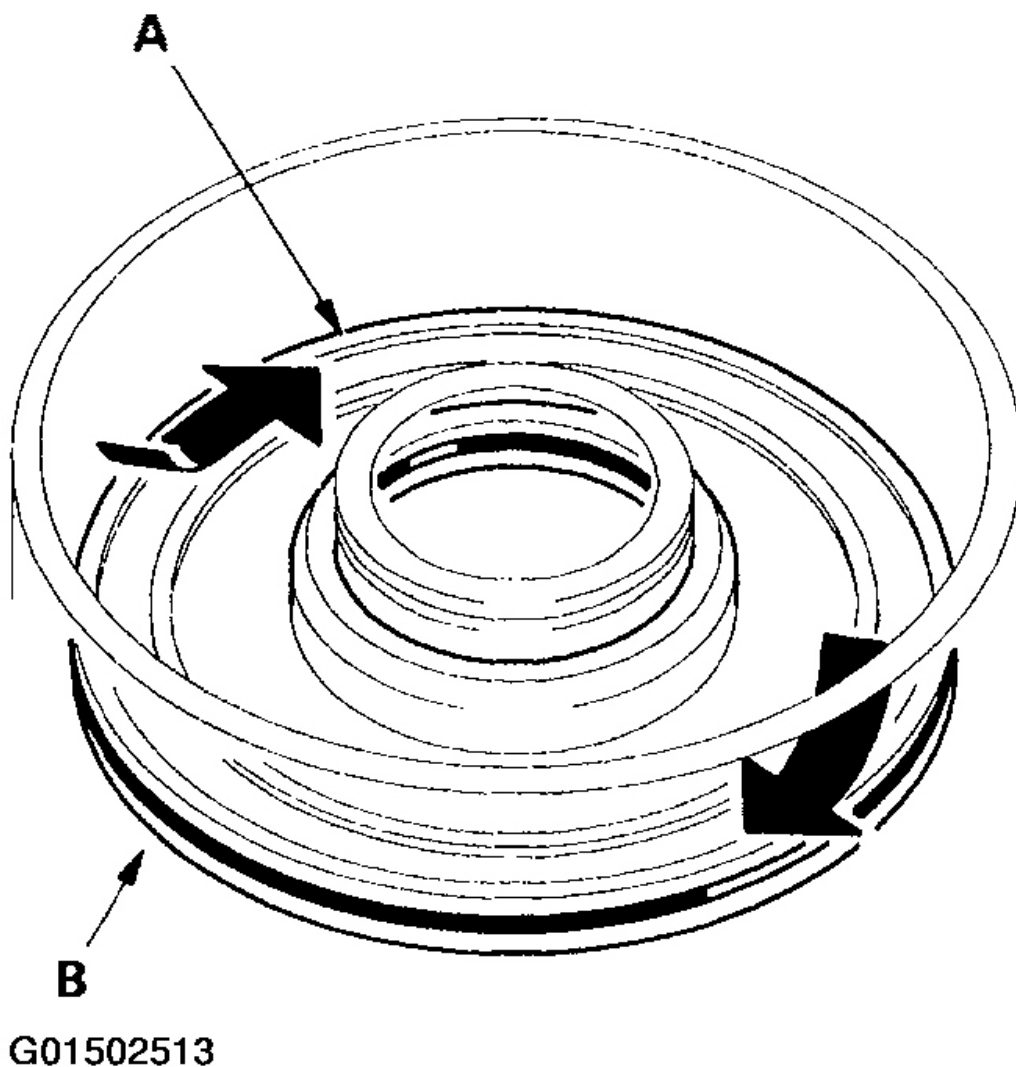
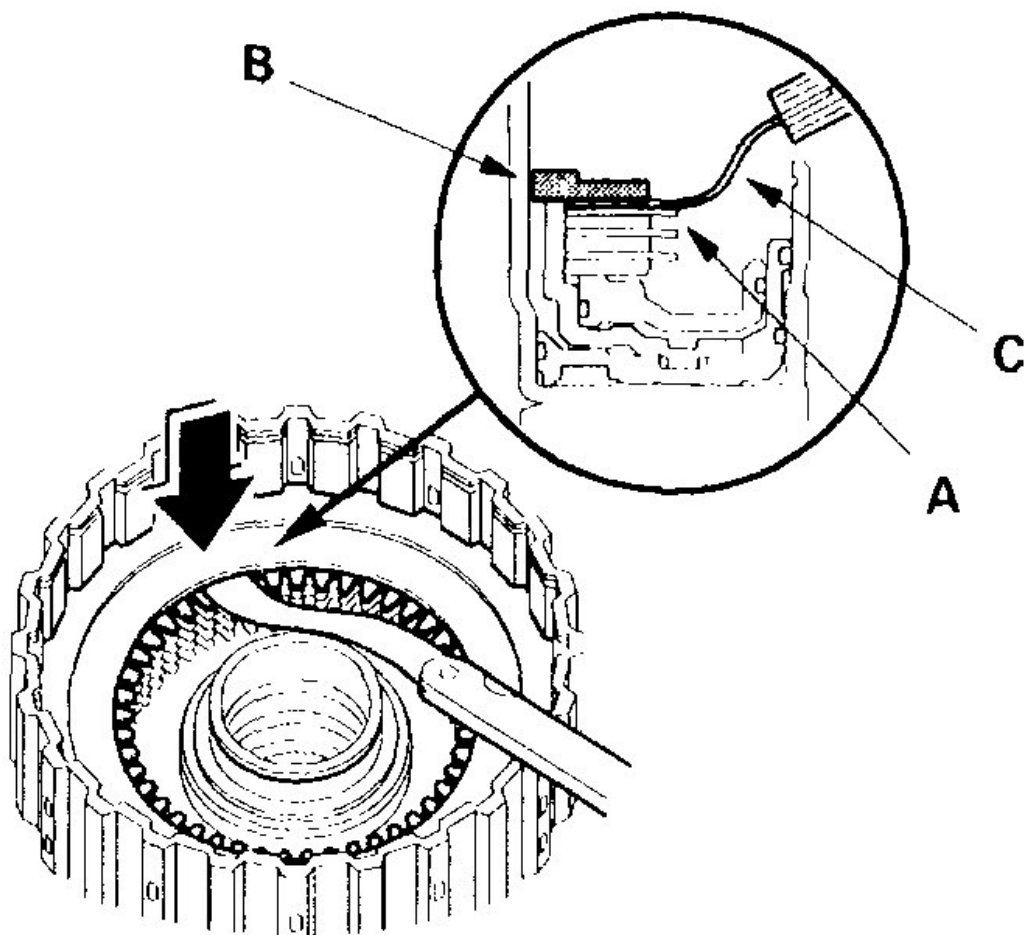


Fig. 92: Installing Piston In Clutch Drum

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the 1st-hold clutch plate-to-top-disc clearance; starting with a clutch plate, alternately install the clutch plate and discs in the 1st-hold clutch drum, then install the 1st-hold clutch plate.
6. Measure the 1st-hold clutch clearance between the 1st-hold clutch plate B and the top disc (A) with a feeler gauge (C) while pressing the 1st-hold clutch plate B down. Take measurements in at least three places, and use the average as the actual clearance.

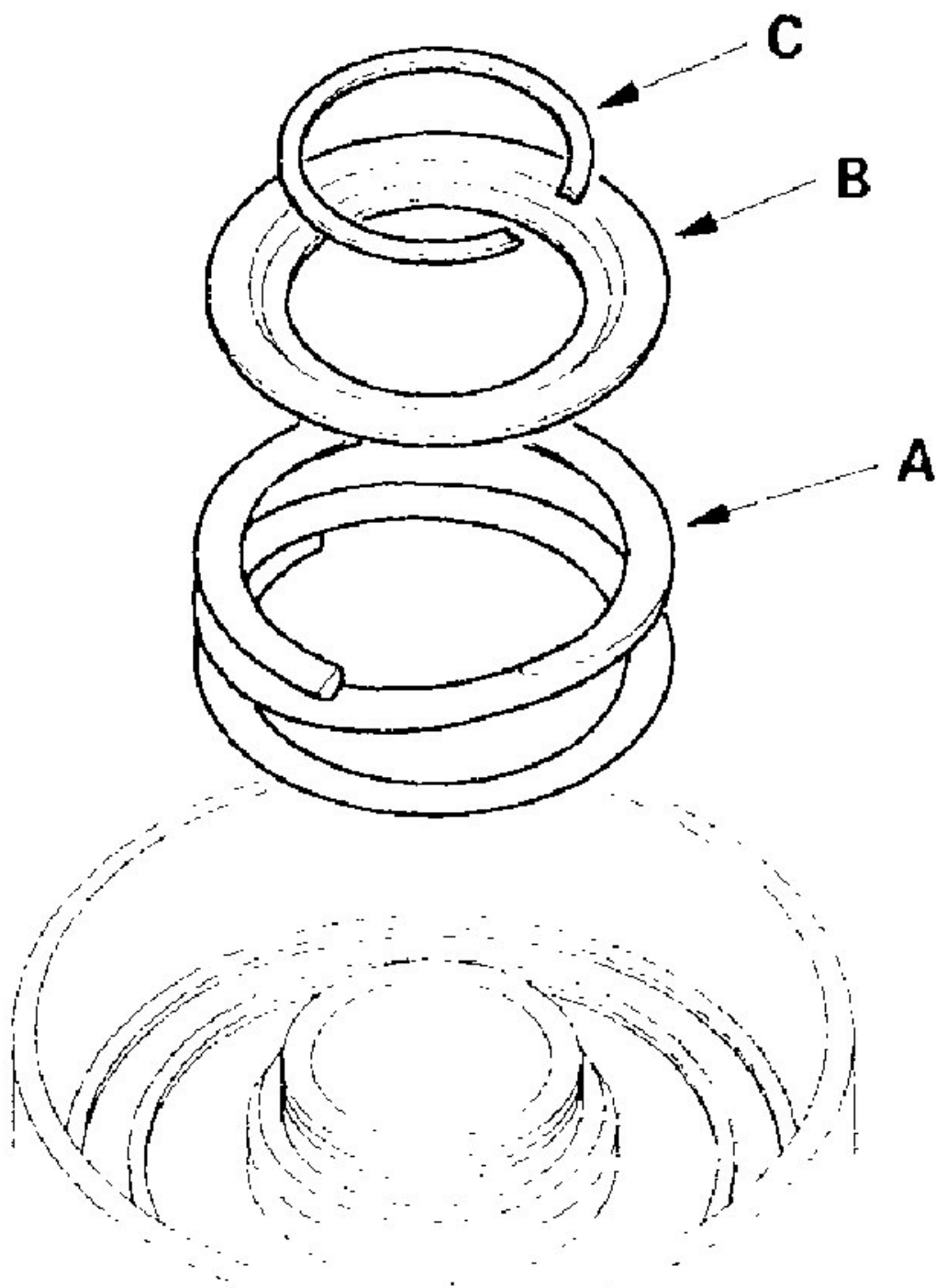
1st-Hold Clutch Plate B-To-Top-Disc Clearance Service Limit - 0.5-0.9 mm (0.020-0.035 in.).



G01502514

Fig. 93: Measuring 1st-Hold Clutch Clearance Between 1st-Hold Clutch Plate & Top Disc
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If the clearance is out of standard, replace the 1st-hold clutch plates and discs as a set, and recheck.
8. Install the return spring (A) and spring retainer (B), and position the snap ring (C) on the retainer.



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Fig. 94: Installing Return Spring & Spring Retainer & Positioning Snap Ring On Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the special tools on the clutch assembly.

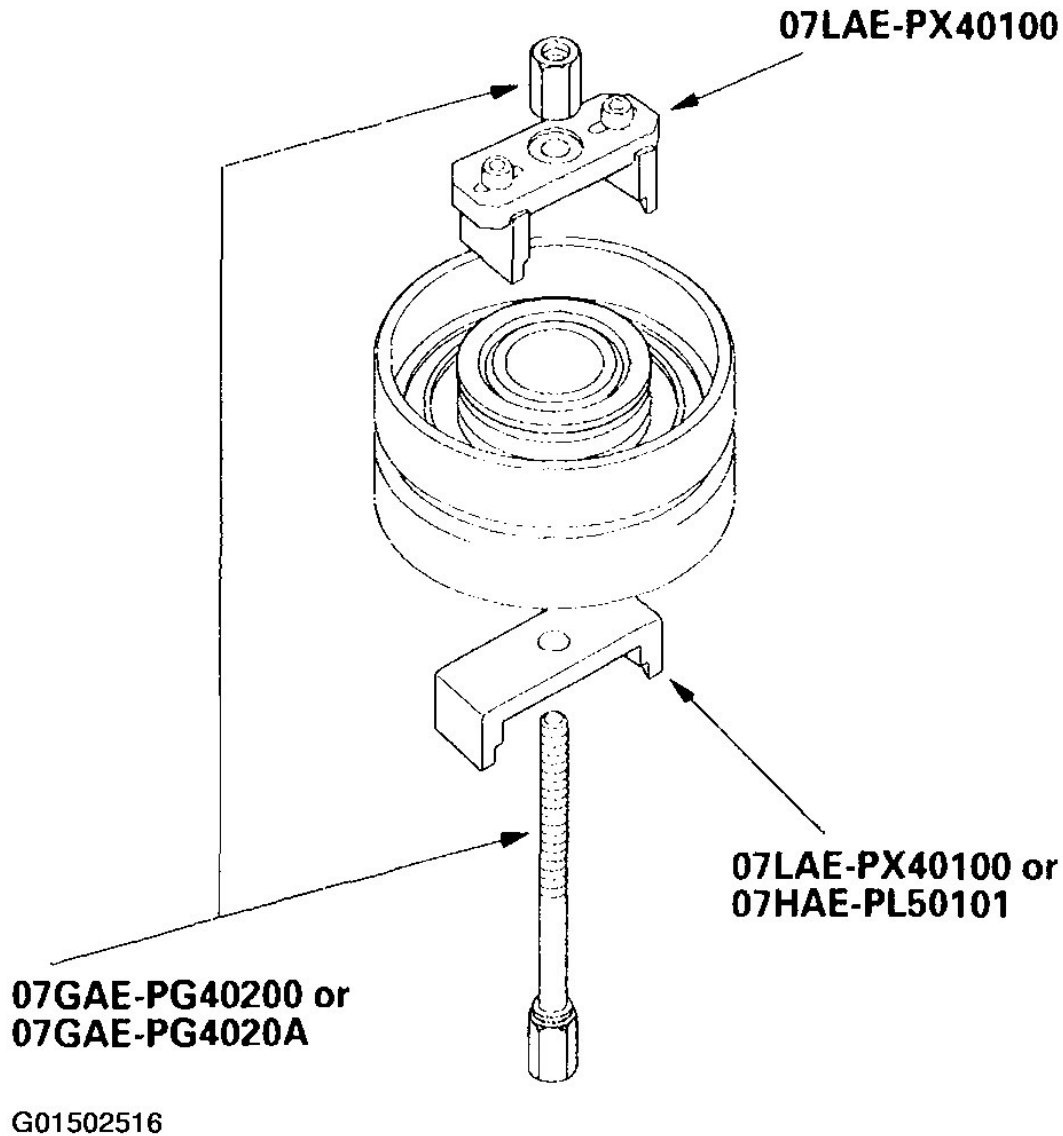
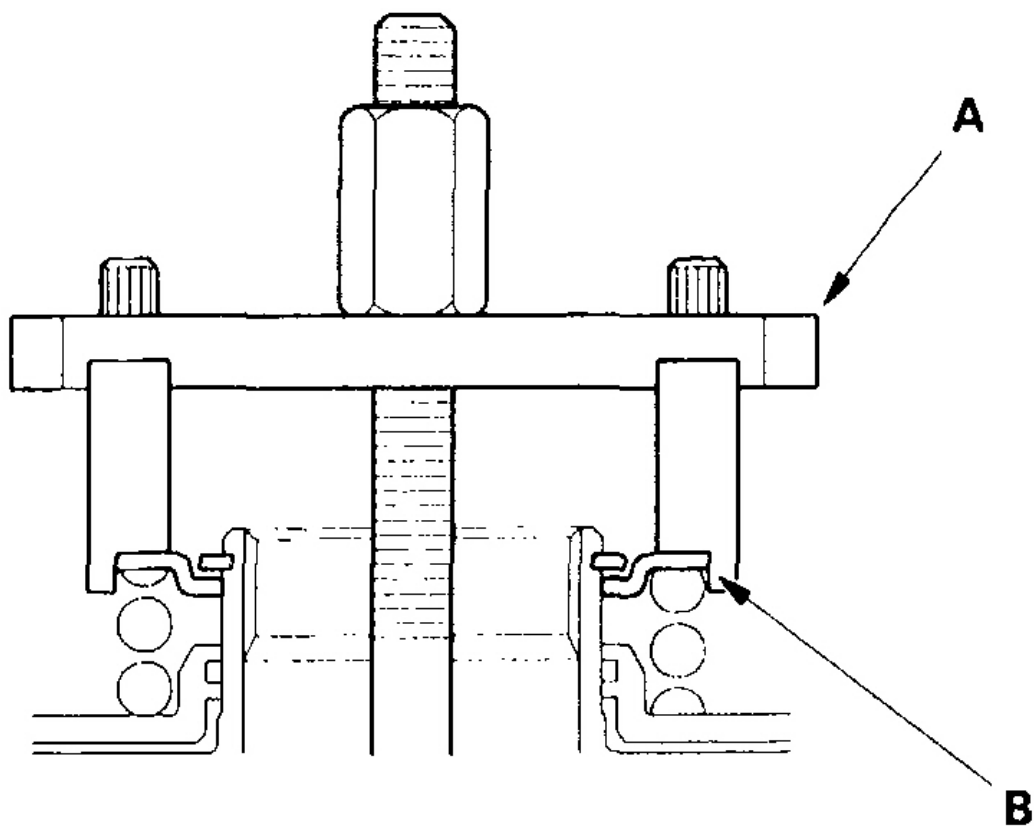


Fig. 95: Installing Special Tools On Clutch Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Be sure the special tool (A) is adjusted to have full contact with the spring retainer (B) on the 4th, 5th, and 1st clutches.



G01502517

Fig. 96: Ensuring Full Contact Of Special Tool With Spring Retainer On 4th, 5th & 1st Clutches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Set the special tool (A) on the spring retainer (B) of the 2nd and 3rd clutches so the tool works on the clutch return spring (C).

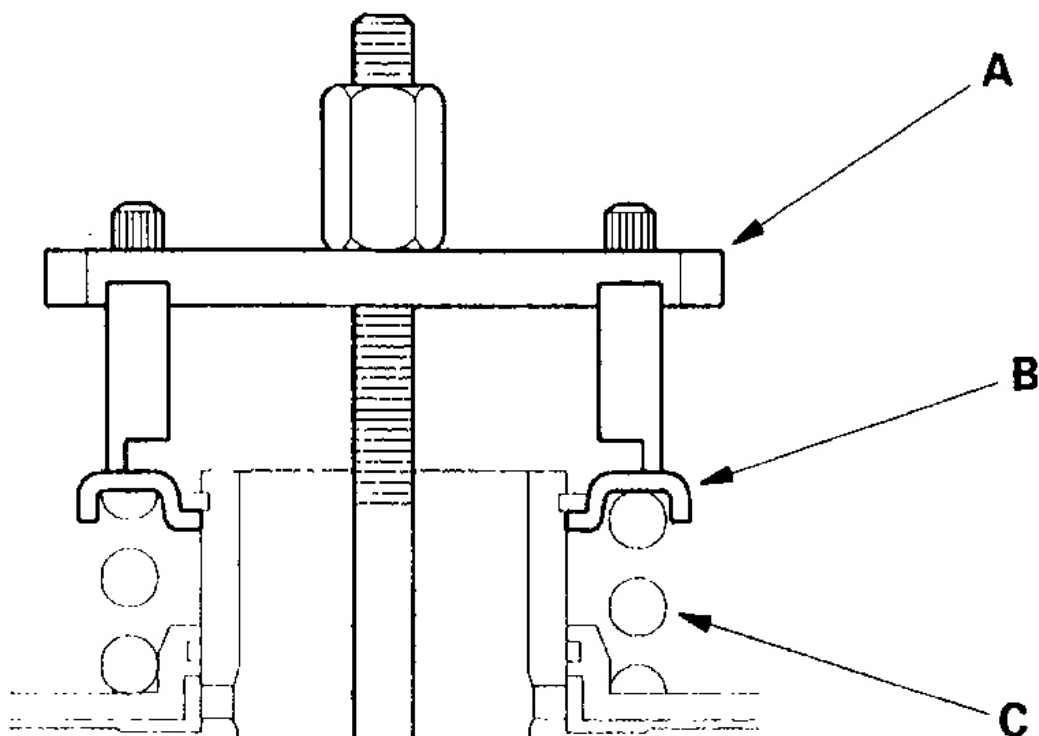
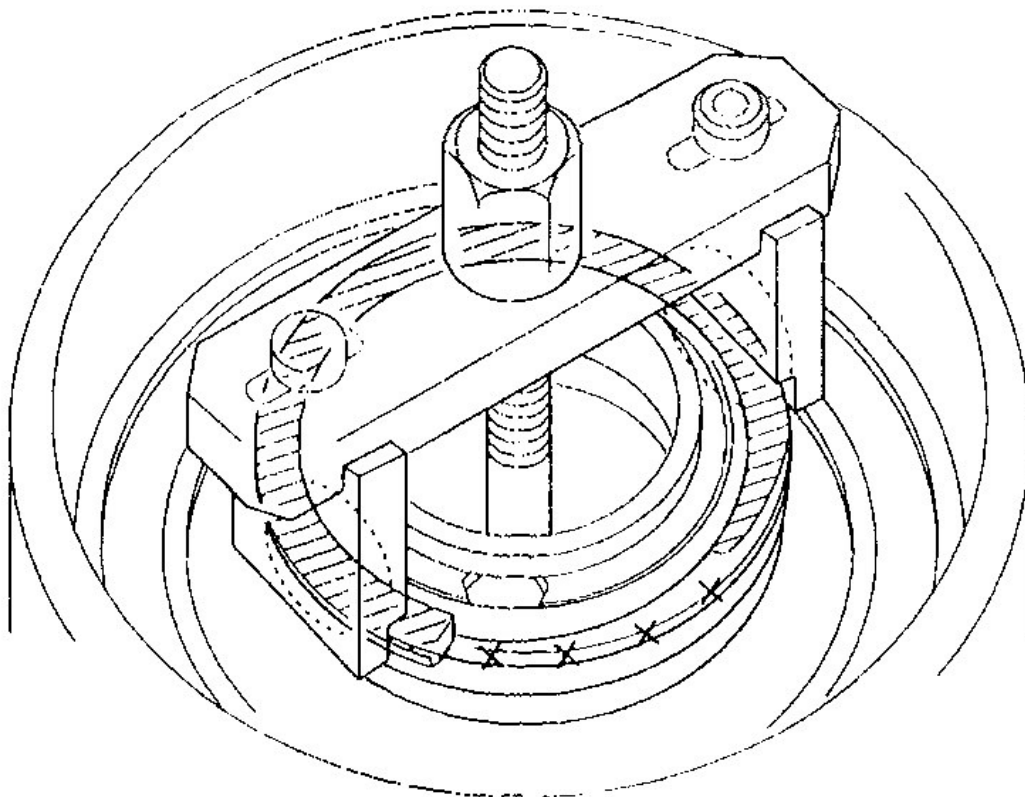
**G01502518**

Fig. 97: Setting Special Tool On Spring Retainer Of 2nd & 3rd Clutches So Tool Works On Clutch Return Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. If either end of the special tool is set over an area of the spring retainer which is unsupported by the return spring, the retainer may be damaged.

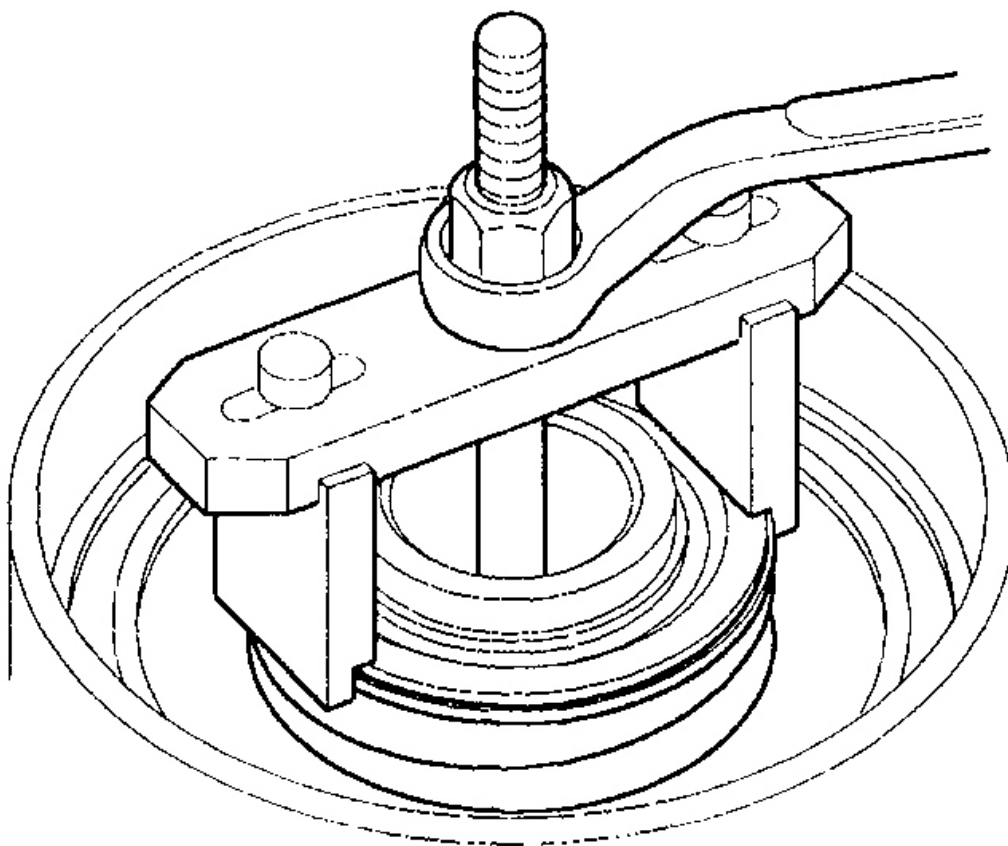


G01502519

**Fig. 98: DO NOT Allow Either End Of Special Tool To Set Over An Area Of Spring Retainer
Unsupported By Return Spring**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Compress the return spring.



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Fig. 99: Compressing Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the snap ring (A).

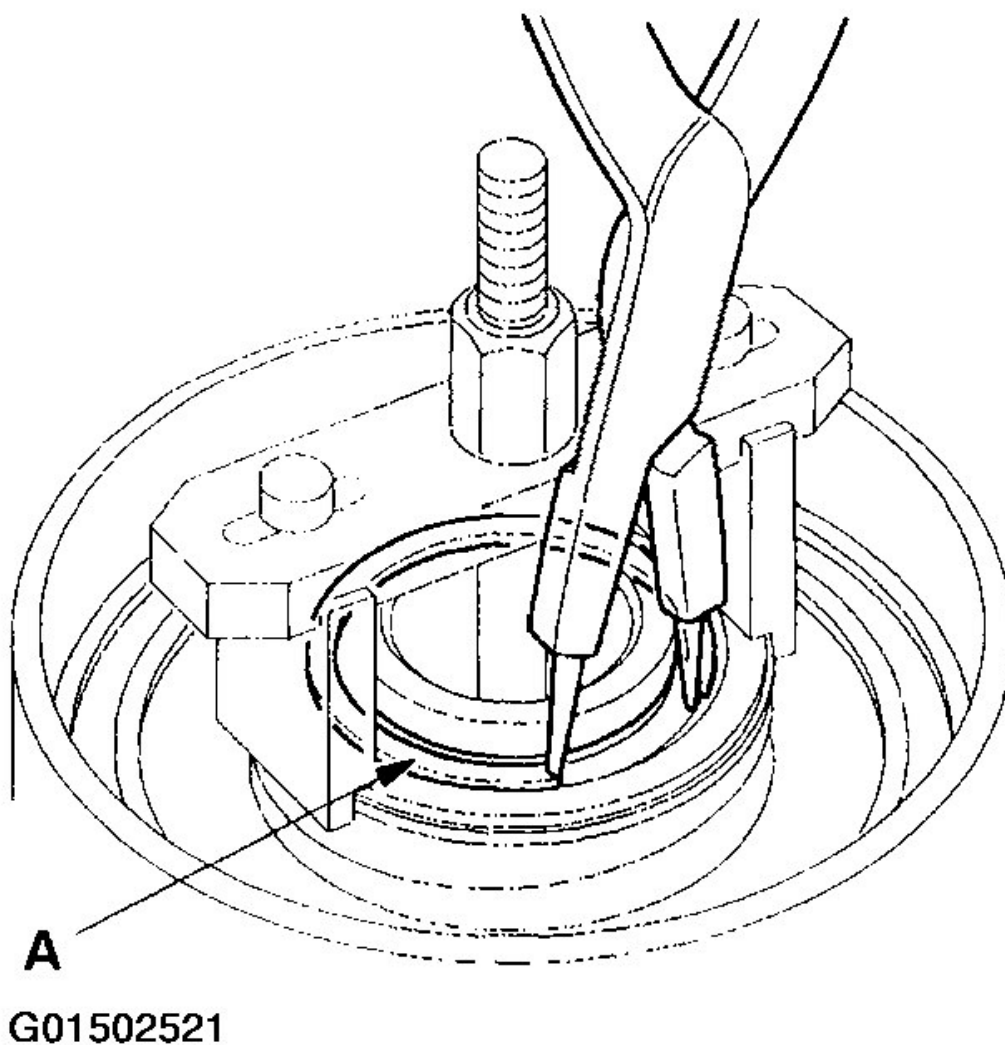
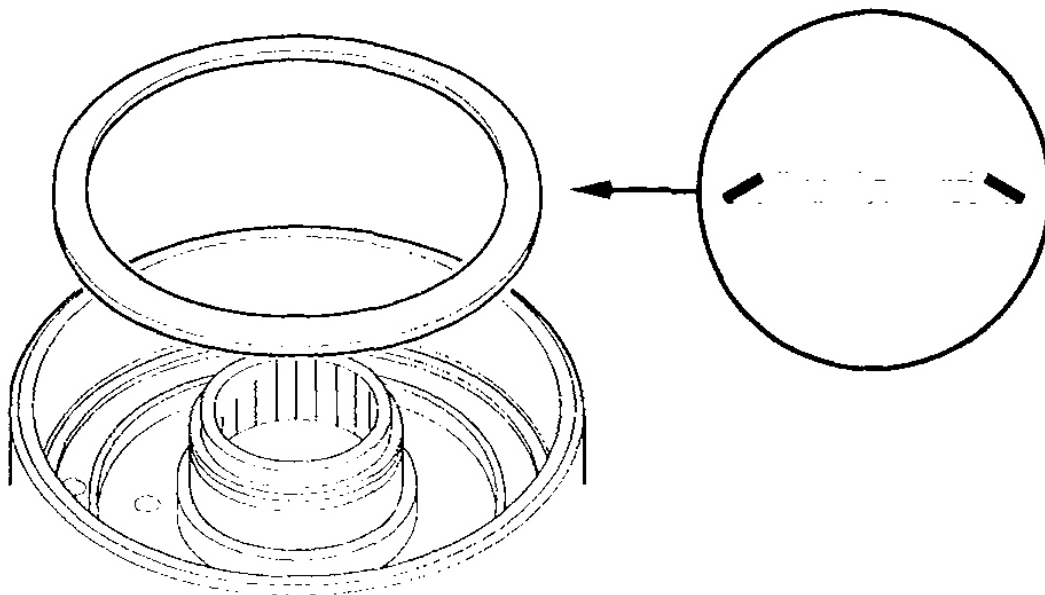


Fig. 100: Installing Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the special tools.
16. Install the disc spring in the 1st, 3rd, 4th, and 5th clutches in the direction shown.

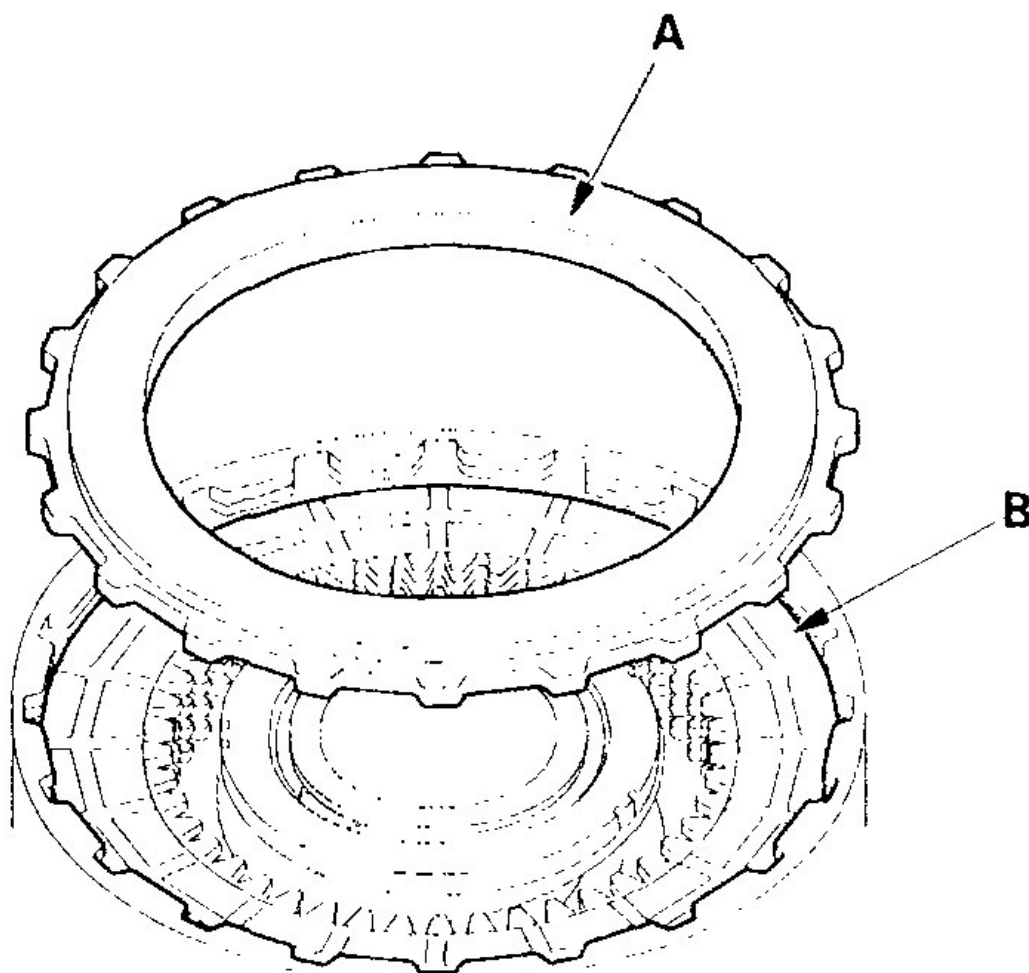
NOTE: The 2nd clutch and 1st-hold clutch do not have a disc spring.



G01502522

Fig. 101: Installing Disc Spring In 1st, 3rd, 4th & 5th Clutches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

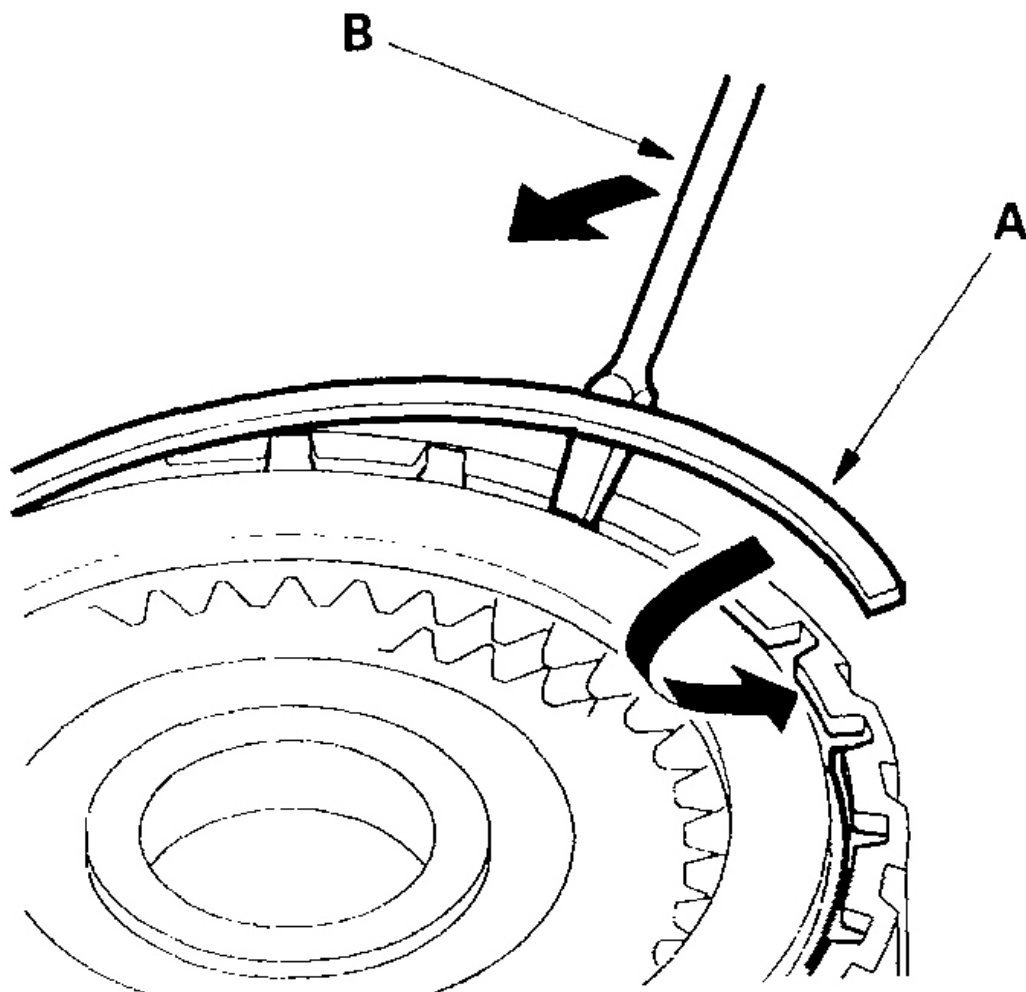
17. Make sure the inside of the clutch drum is free of dirt and other foreign particles.
18. Starting with a clutch plate, alternately install the clutch plates and discs. Install the clutch end plate (A) with the flat side toward the disc (B).



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Fig. 102: Installing Clutch Plates & Discs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the snap ring (A) with a screwdriver (B).

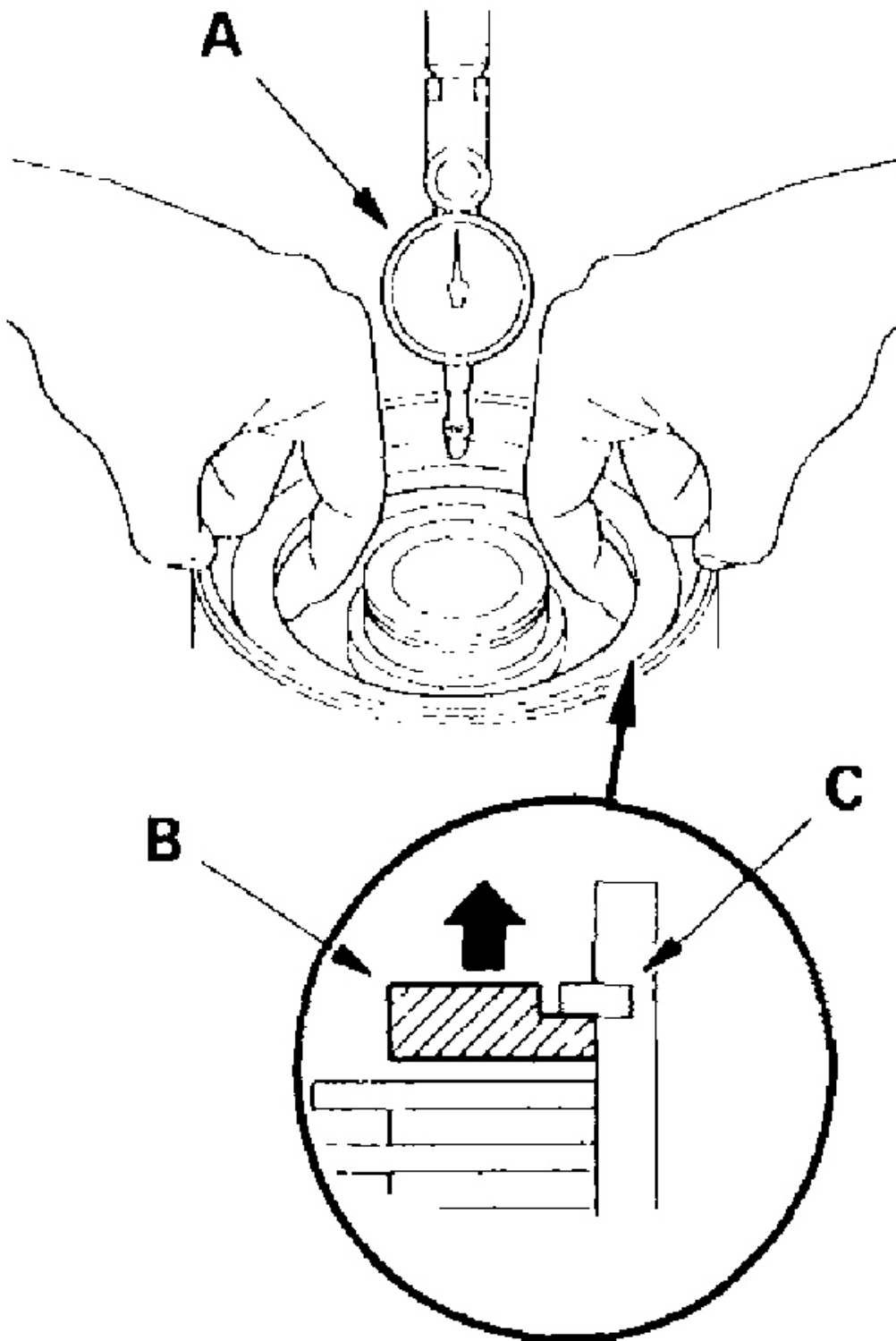


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Fig. 103: Installing Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

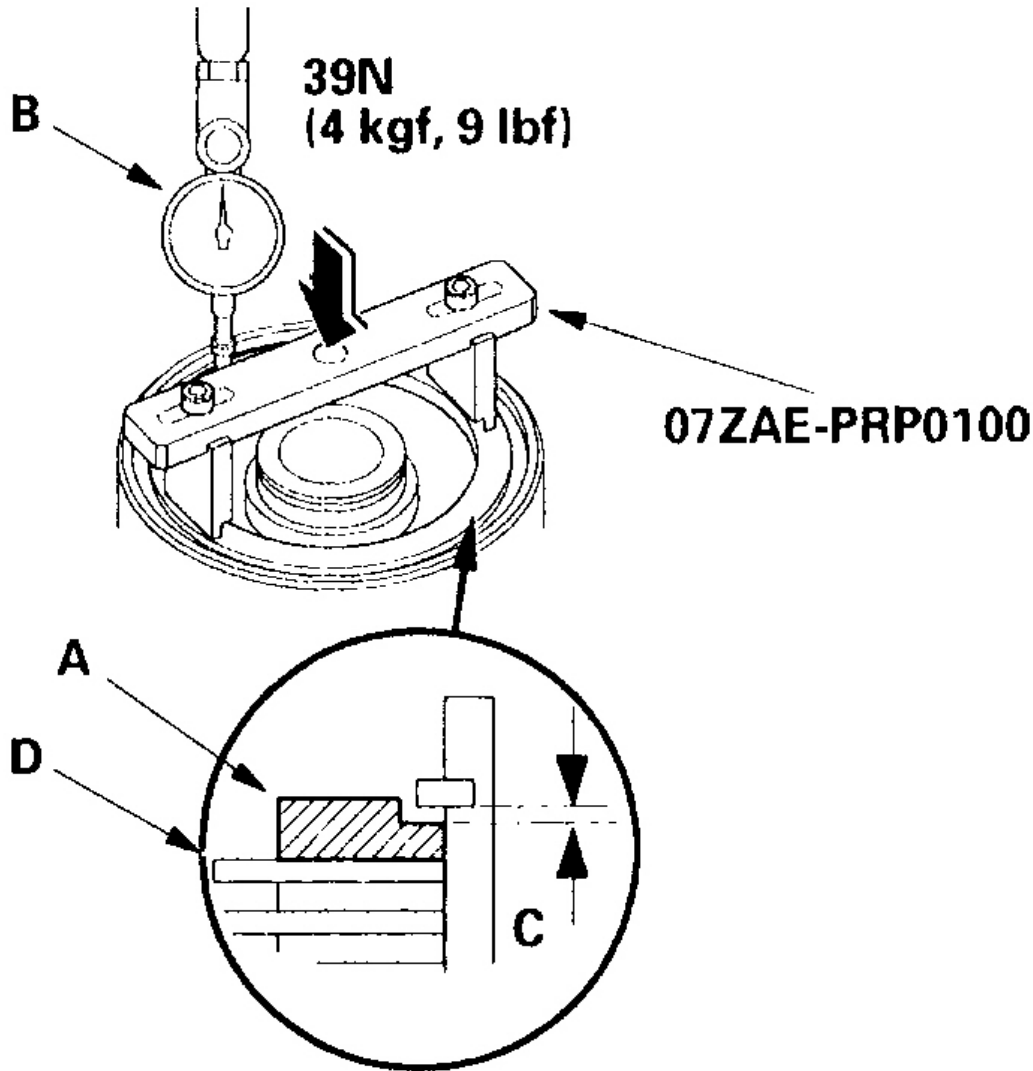
20. Set a dial indicator (A) on the clutch end plate (B).



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Fig. 104: Installing Dial Indicator On Clutch End Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Zero the indicator with the clutch end plate lifted up to the snap ring (C).
22. Release the clutch end plate to lower it, then put the special tool on the end plate (A).



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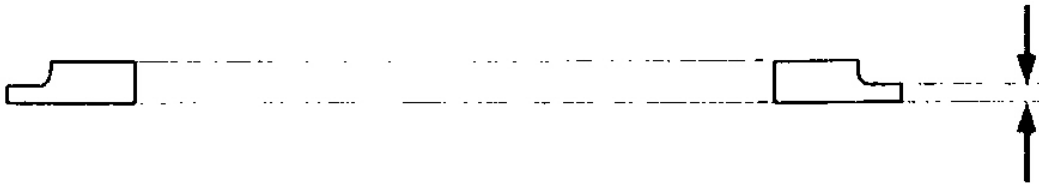
Fig. 105: Installing Special Tool On End Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Press the special tool down with 39 N (4 kgf, 9 lbf) using a force gauge, and read the dial indicator reads the clearance (B) between the clutch end plate and top disc (C). Take measurements at least three places, and use the average as the actual clearance.

Clutch End-Plate-To-Top-Disc Clearance Service Limit:

- **1st Clutch** - 1.1-1.3 mm (0.043-0.051 in.).
 - **2nd Clutch** - 0.85-1.05 mm (0.033-0.041 in.).
 - **3rd Clutch** - 0.7-0.9 mm (0.028-0.035 in.).
 - **4th Clutch** - 0.55-0.75 mm (0.022-0.030 in.).
 - **5th Clutch** - 0.55-0.75 mm (0.022-0.030 in.).
24. If the clearance is not within the service limit, select a new clutch end plate from the following table.

NOTE: If the thickest clutch end plate is installed, but the clearance is still over the service limit, replace the clutch discs and plates as a set. Replace the PCM, if 3rd clutch discs and plates replacement is required.



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Fig. 106: Showing Area Where Clearance Is Measured
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mark	Part Number	Thickness
1	22551-P7W-003	3.1 mm (0.122 in.)
2	22552-P7W-003	3.2 mm (0.126 in.)
3	22553-P7W-003	3.3 mm (0.130 in.)
4	22554-P7W-003	3.4 mm (0.134 in.)
5	22555-P7W-003	3.5 mm (0.138 in.)
6	22556-P7W-003	3.6 mm (0.142 in.)
7	22557-P7W-003	3.7 mm (0.146 in.)
8	22558-P7W-003	3.8 mm (0.150 in.)
9	22559-P7W-003	3.9 mm (0.154 in.)

G01502528

Fig. 107: 1st Clutch End Plate Selection Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mark	Part Number	Thickness
1	22551-PY4-003	2.1 mm (0.083 in.)
2	22552-PY4-003	2.2 mm (0.087 in.)
3	22553-PY4-003	2.3 mm (0.091 in.)
4	22554-PY4-003	2.4 mm (0.094 in.)
5	22555-PY4-003	2.5 mm (0.098 in.)
6	22556-PY4-003	2.6 mm (0.102 in.)
7	22557-PY4-003	2.7 mm (0.106 in.)
8	22558-PY4-003	2.8 mm (0.110 in.)
9	22559-PY4-003	2.9 mm (0.114 in.)

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Fig. 108: 2nd Clutch End Plate Selection Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mark	Part Number	Thickness
6	22556-RAY-A01	2.6 mm (0.102 in.)
7	22557-RAY-A01	2.7 mm (0.106 in.)
8	22558-RAY-A01	2.8 mm (0.110 in.)
9	22559-RAY-A01	2.9 mm (0.114 in.)
10	22560-PVG-003	3.0 mm (0.118 in.)
11	22561-PVG-003	3.1 mm (0.122 in.)
12	22562-PVG-003	3.2 mm (0.126 in.)
13	22563-PVG-003	3.3 mm (0.130 in.)
14	22564-PVG-003	3.4 mm (0.134 in.)

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Fig. 109: 3rd Clutch End Plate Selection Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mark	Part Number	Thickness
1	22561-P7T-003	2.1 mm (0.083 in.)
2	22562-P7T-003	2.2 mm (0.087 in.)
3	22563-P7T-003	2.3 mm (0.091 in.)
4	22564-P7T-003	2.4 mm (0.094 in.)
5	22565-P7T-003	2.5 mm (0.098 in.)
6	22566-P7T-003	2.6 mm (0.102 in.)
7	22567-P7T-003	2.7 mm (0.106 in.)
8	22568-P7T-003	2.8 mm (0.110 in.)
9	22569-P7T-003	2.9 mm (0.114 in.)

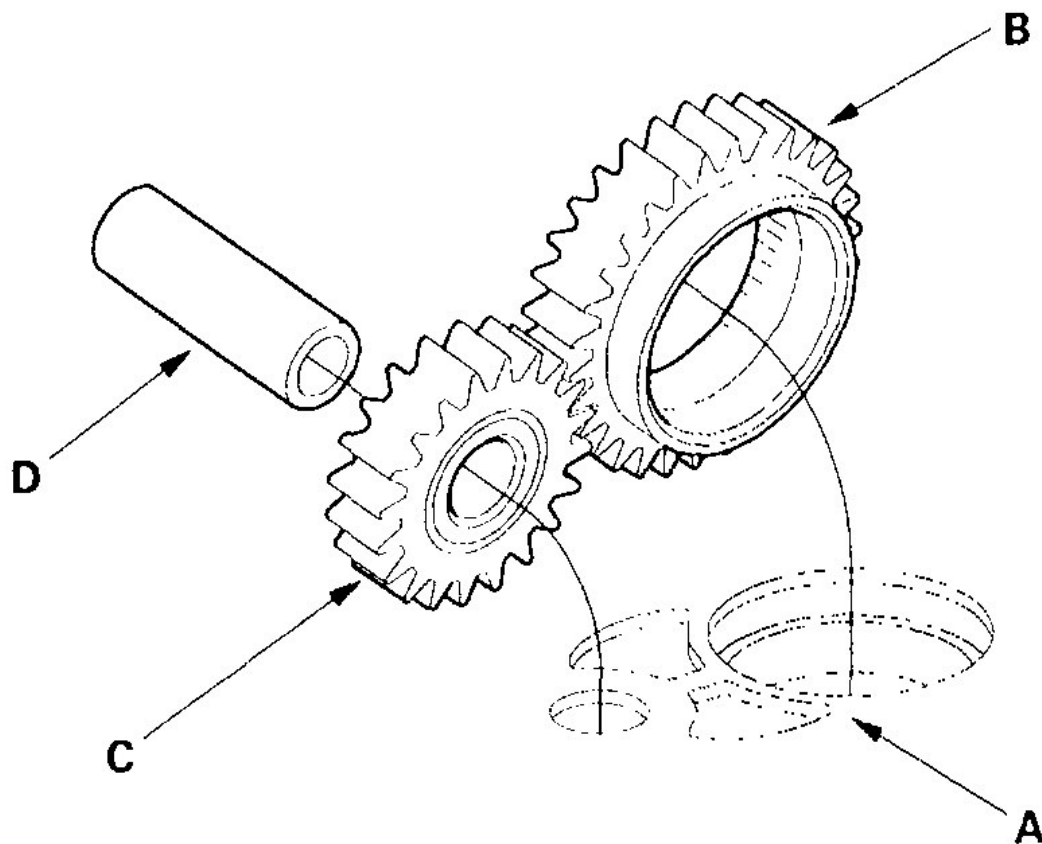
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Fig. 110: 4th & 5th Clutch End Plate Selection Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE BODY & ATF STRAINER INSTALLATION



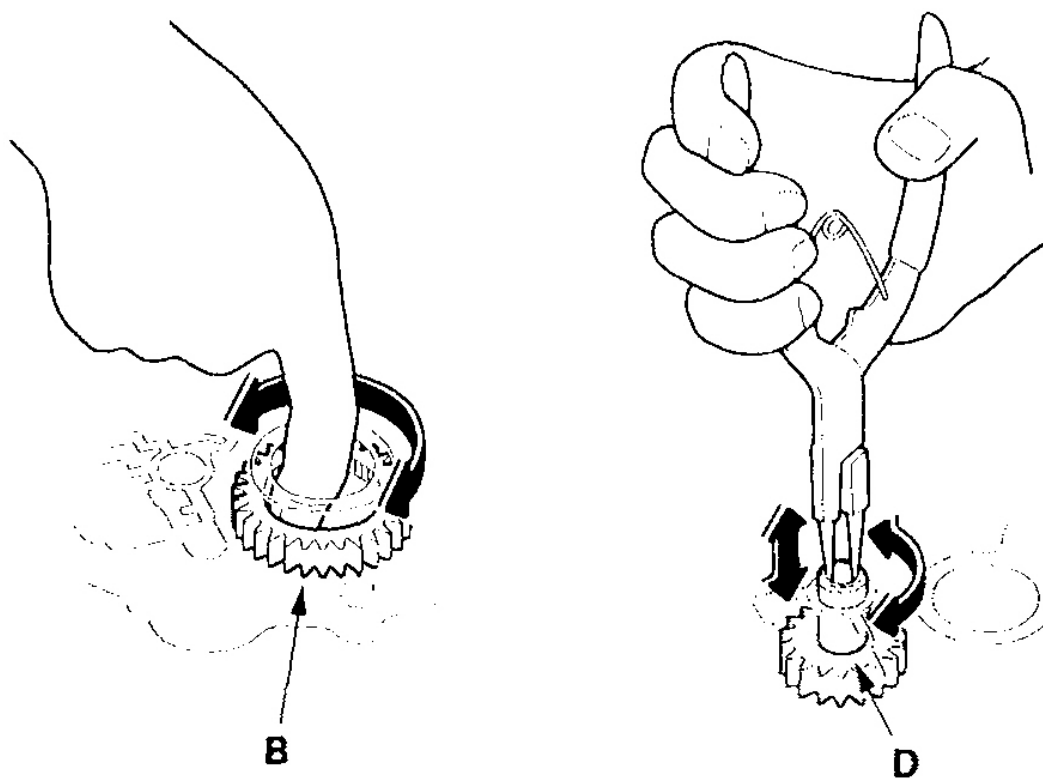
1. Install the main separator plate (A) and three dowel pins on the torque converter housing. Then install the ATF pump drive gear (B), driven gear (C), and ATF pump driven gear shaft (D). Install the ATF pump driven gear with its grooved and chamfered side facing down.



G01502533

Fig. 112: Installing ATF Pump Components**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

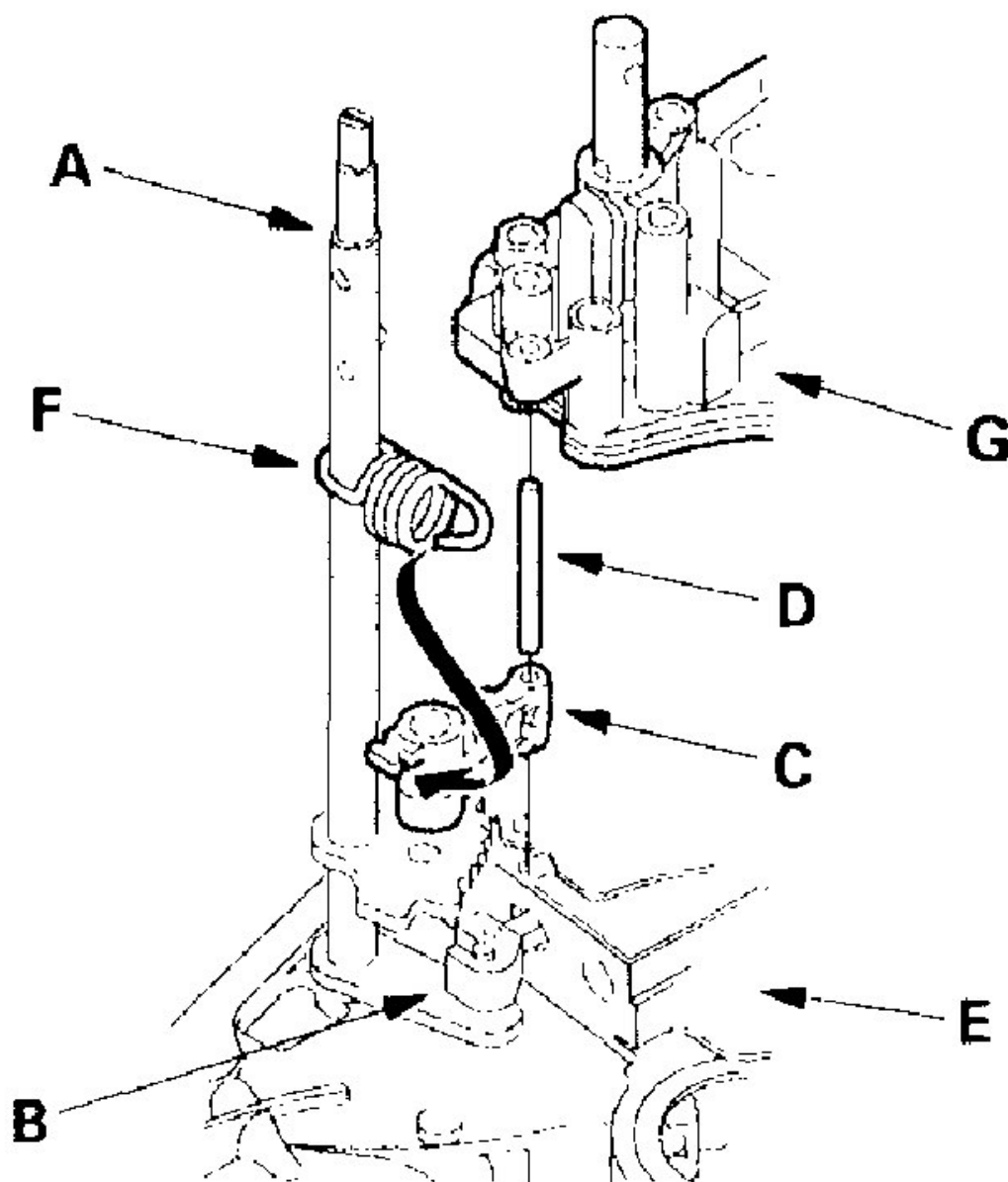
2. Install the main valve body (one 6 mm bolt and three 8 mm bolts). Make sure the ATF pump drive gear (B) rotates smoothly in the normal operating direction, and the ATF pump driven gear shaft (D) moves smoothly in the axial and normal operating direction.



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Fig. 113: Ensuring ATF Pump Drive & Driven Gears Move Smoothly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the ATF pump drive gear and ATF pump driven gear shaft do not move smoothly, loosen the main valve body bolts. Realign the ATF pump driven gear shaft, and retighten the bolts to the specified torque, then recheck. Failure to align the ATF pump driven gear shaft correctly will result in a seized ATF pump drive gear or ATF pump driven gear shaft.
4. Install the torque converter check valve and spring, and the cooler check valve and spring on the main valve body, then install the two dowel pins and the regulator separator plate.
5. Install the stator shaft and stator shaft stop.
6. Install the regulator valve body (eight bolts).
7. Install the two dowel pins and the servo separator plate on the main valve body.
8. Install the control shaft (A) in the torque converter housing along with the manual valve (B).



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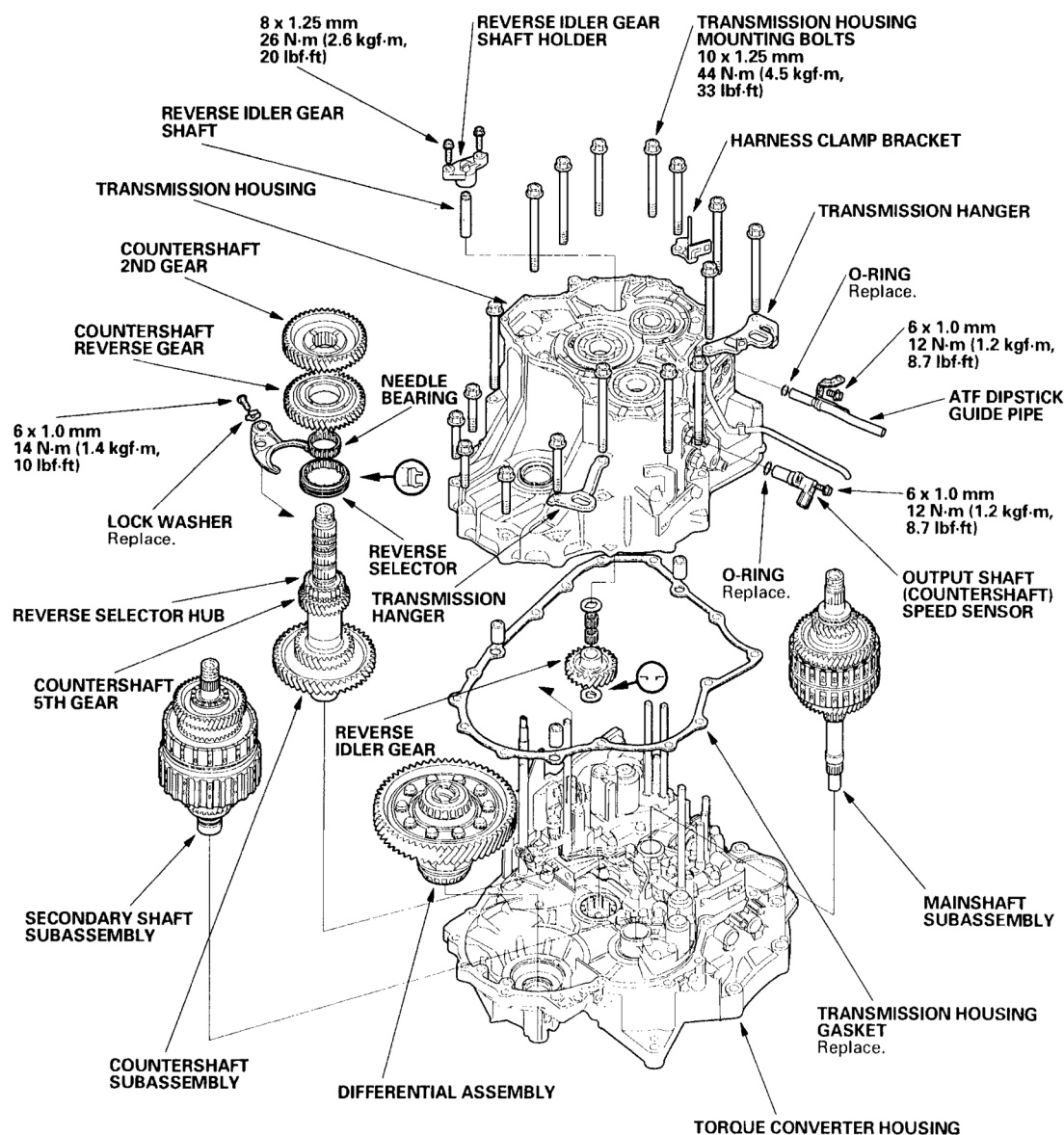
Fig. 114: Installing Control Shaft With Manual Valve In Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the detent arm (C) and arm shaft (D) in the main valve body (E), then hook the detent arm spring (F) to the detent arm.

10. Install the servo body (G) (five bolts).
11. Install the top accumulator separator plate with two dowel pins on the servo body, then install the top accumulator body (seven bolts).
12. Install the ATF strainer (two bolts).
13. Install the servo detent base (two bolts).
14. Install the accumulator body (seven bolts).
15. Install the one ATF feed pipe in the servo body, four pipes in the regulator valve body, four pipes in the top accumulator body, and one pipe in the accumulator body.

TRANSMISSION HOUSING

SHAFT ASSEMBLY & HOUSING INSTALLATION



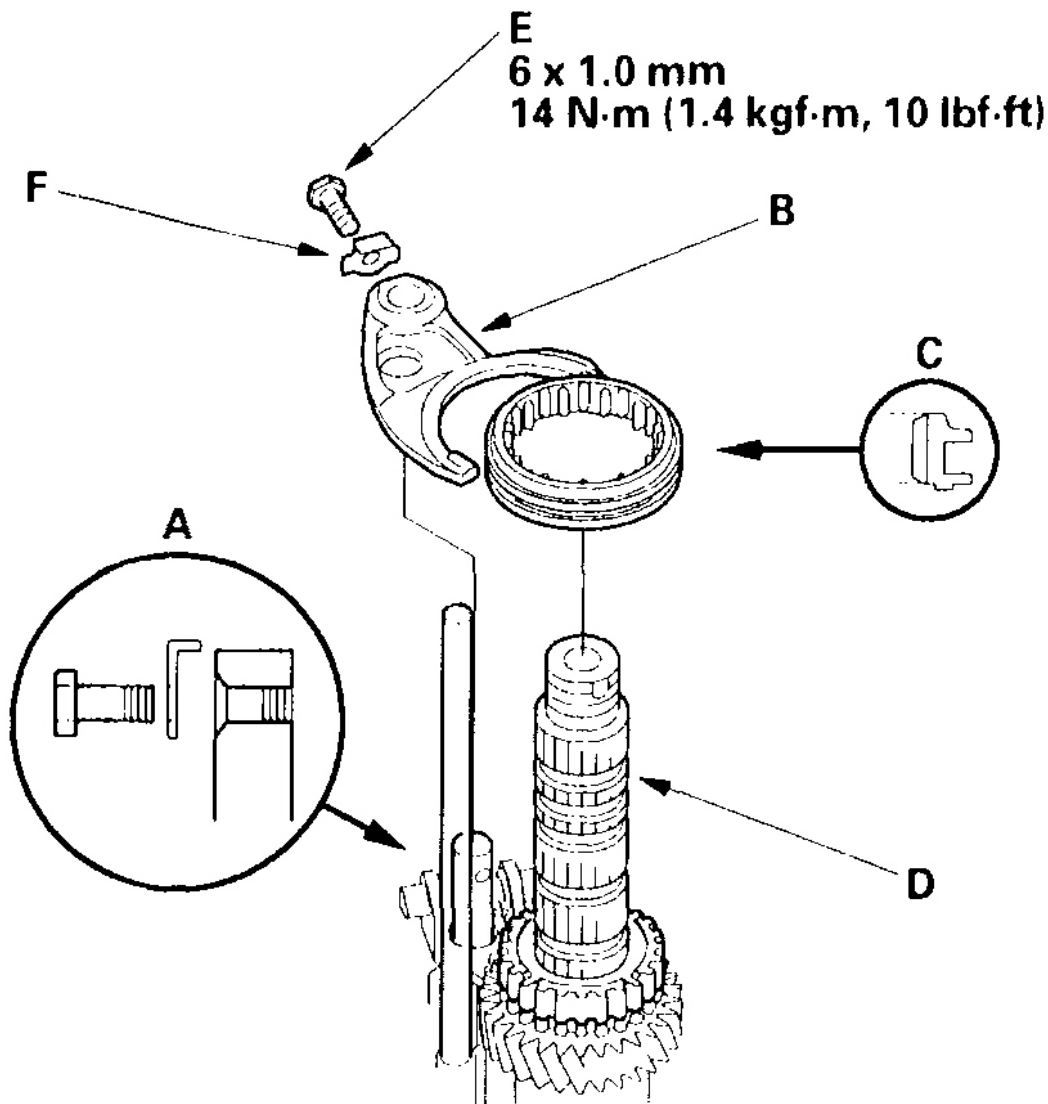
G01502536

Fig. 115: Exploded View Of Transmission Housing Components With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to Fig. 115 as needed during the following procedure.

1. Install the differential assembly in the torque converter housing.
2. If the reverse selector hub is press-fitted type, join the mainshaft, countershaft, and secondary shaft together, then install them in the torque converter housing.
3. If the reverse selector hub is not press-fitted type, install the countershaft, mainshaft, and secondary shaft in the torque converter housing, then install the countershaft 5th gear and reverse selector hub on the countershaft.

4. Turn the shift fork shaft (A) so the large chamfered hole is facing the fork bolt hole. Then install the shift fork (B) and reverse selector (C) together on the shift fork shaft and countershaft (D). Secure the shift fork to the shift fork shaft with the lock bolt (E) and a new lock washer (F), then bend the lock washer against the bolt head.



G01502537

Fig. 116: Installing Components Onto Shift Fork Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the needle bearing, countershaft reverse gear, and countershaft 2nd gear on the countershaft.
6. Place the thrust washer (A) in the transmission housing.

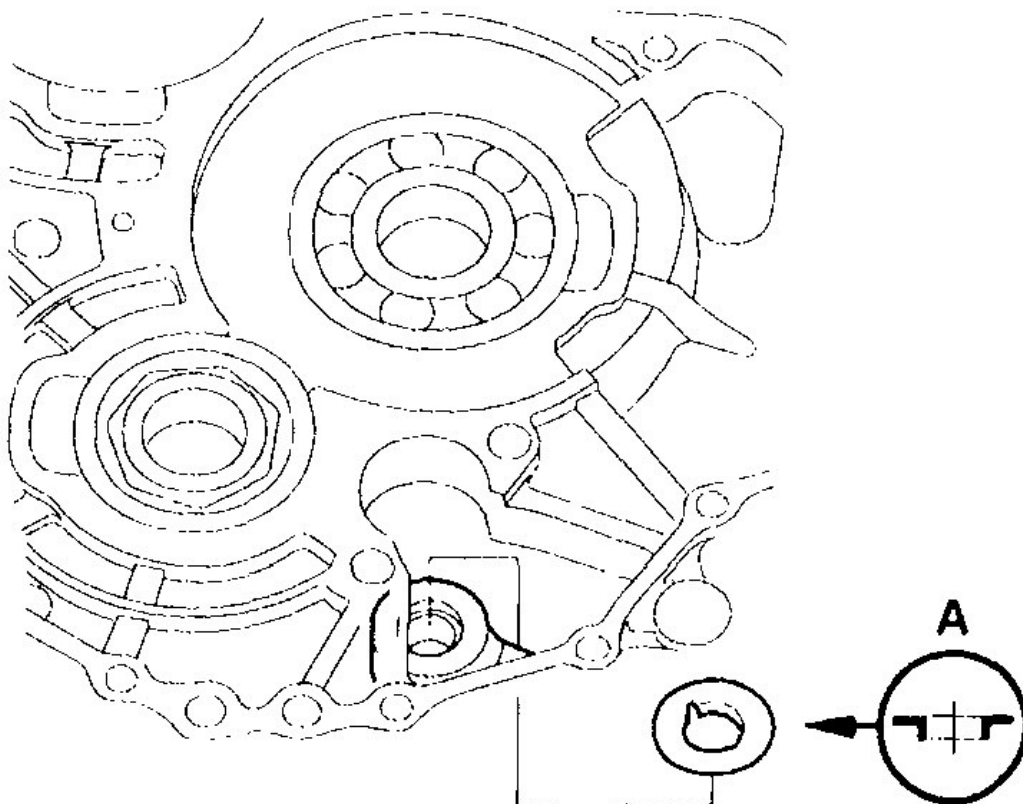
**G01502538**

Fig. 117: Installing Thrust Washer Into Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Place the reverse idler gear (A) in the transmission housing as shown, then slide it in the direction shown.

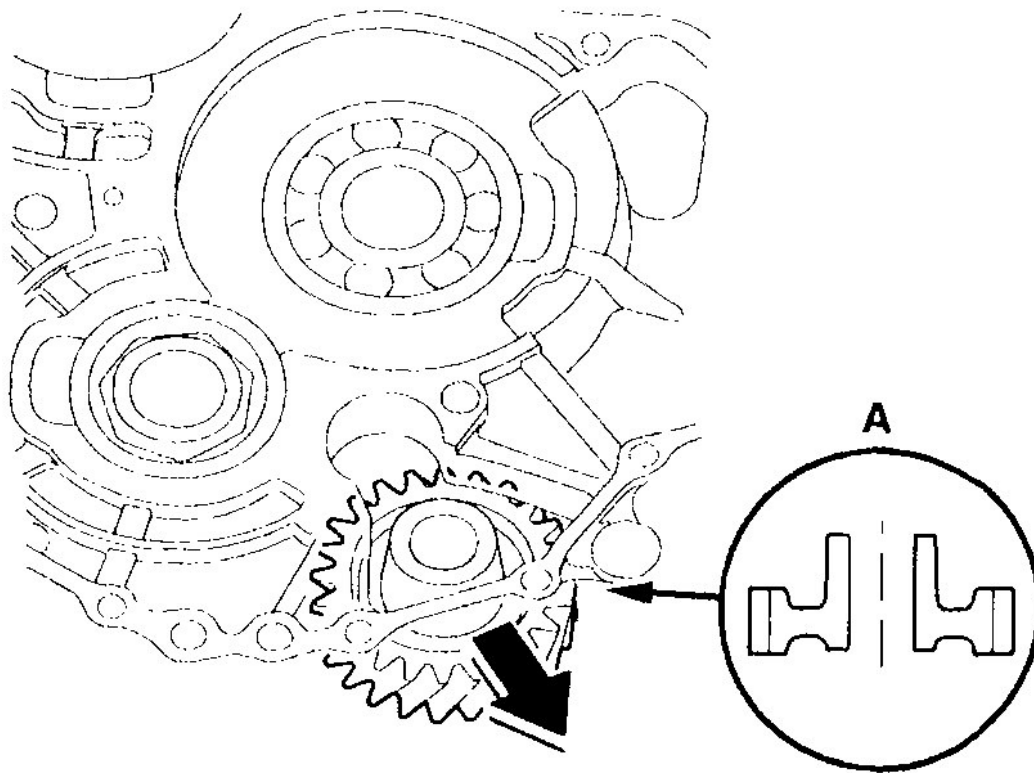
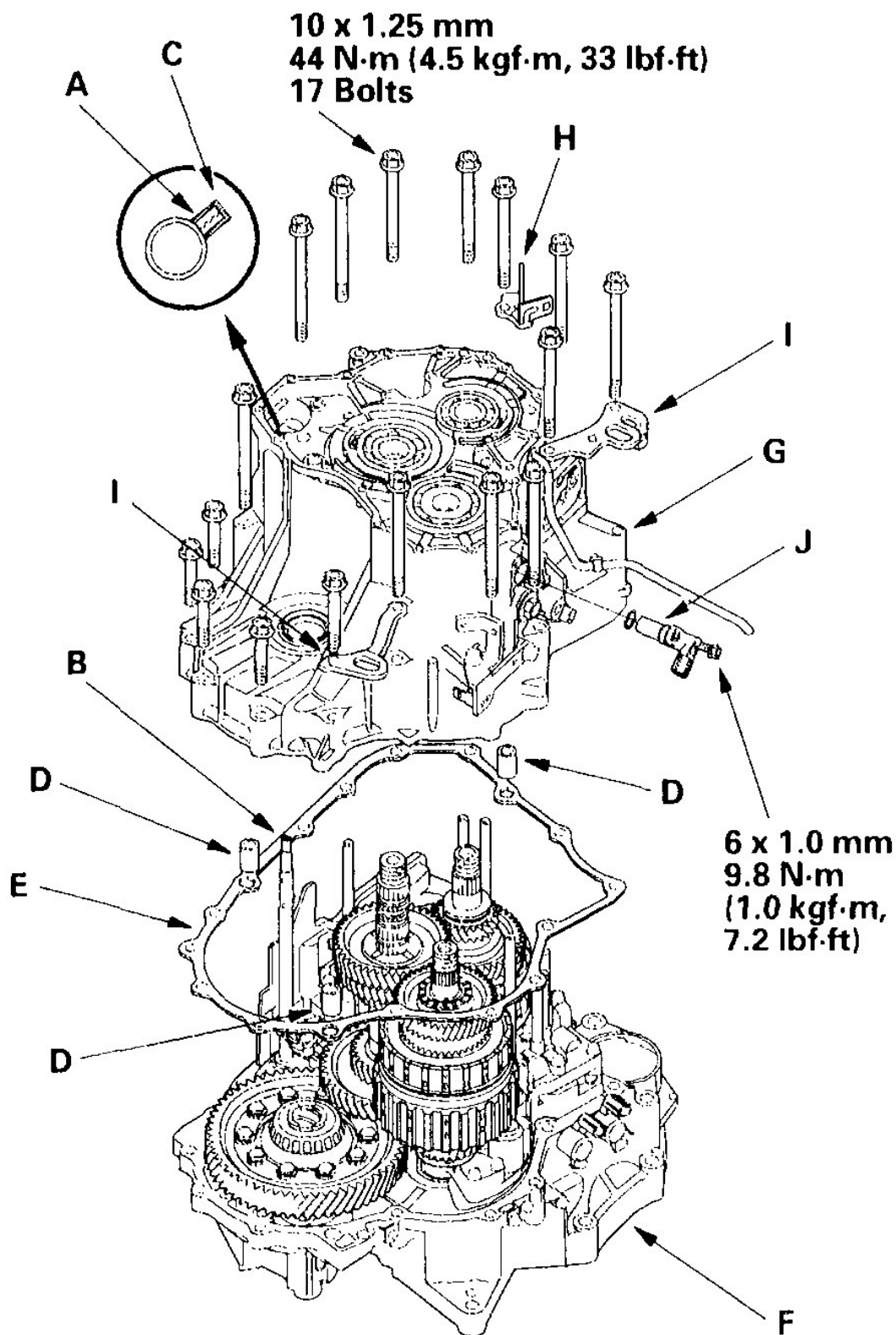
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Fig. 118: Installing Reverse Idler Gear Into Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

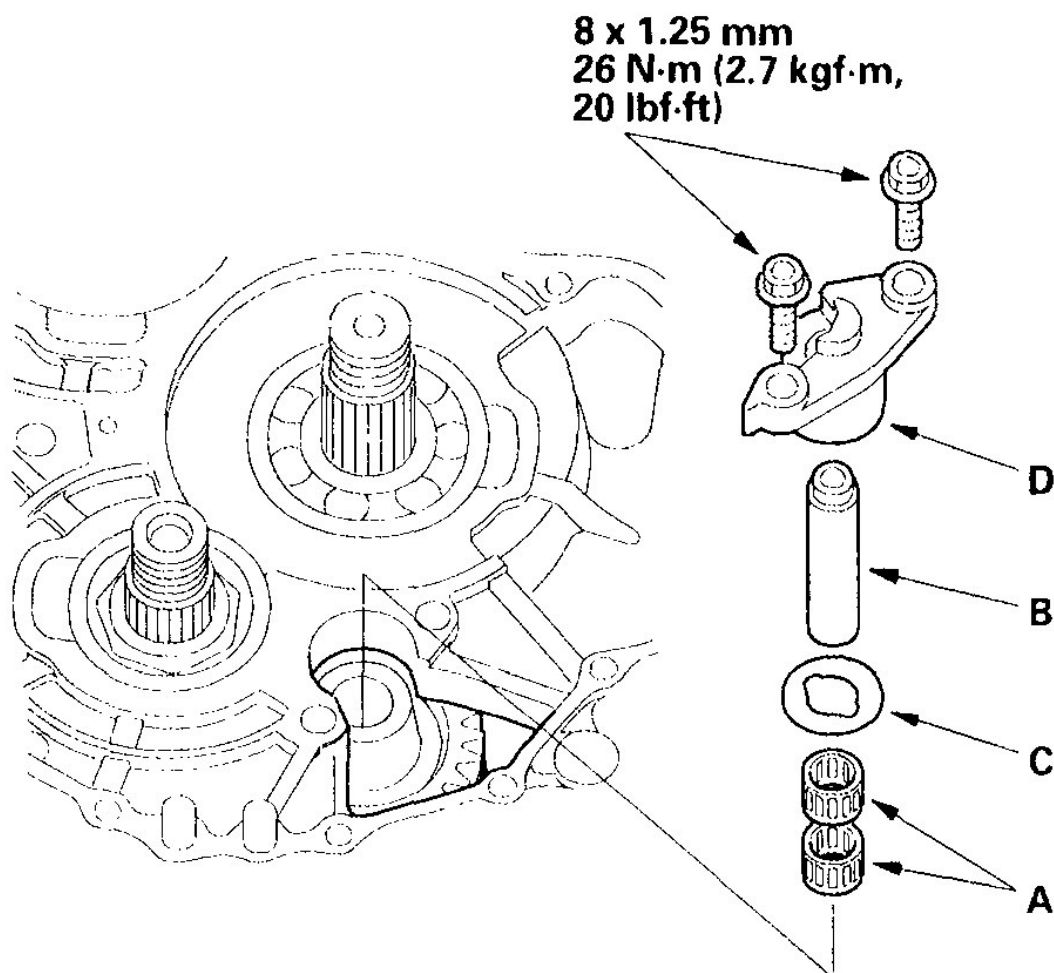
8. Align the spring pin (A) on the control shaft (B) with the transmission housing groove (C) by turning the control shaft.



G01502540

Fig. 119: Aligning Spring Pin On Control Shaft With Transmission Housing Groove With Torque Specifications**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

9. Install three dowel pins (D) and a new gasket (E) on the torque converter housing (F).
10. Place the transmission housing (G) on the torque converter housing, then install the transmission housing mounting bolts along with the harness clamp bracket (H) and transmission hangers (I).
11. Tighten the mounting bolts in two or more steps in a crisscross pattern.
12. Install the new O-ring on the output shaft (countershaft) speed sensor (J), then install it in the transmission housing.
13. Engage the reverse idler gear with the countershaft reverse gear and mainshaft reverse gear. Then install the needle bearings (A), reverse idler gear shaft (B), and thrust washer (C) in the reverse idler gear, and install the reverse idler gear shaft holder (D) on the transmission housing.



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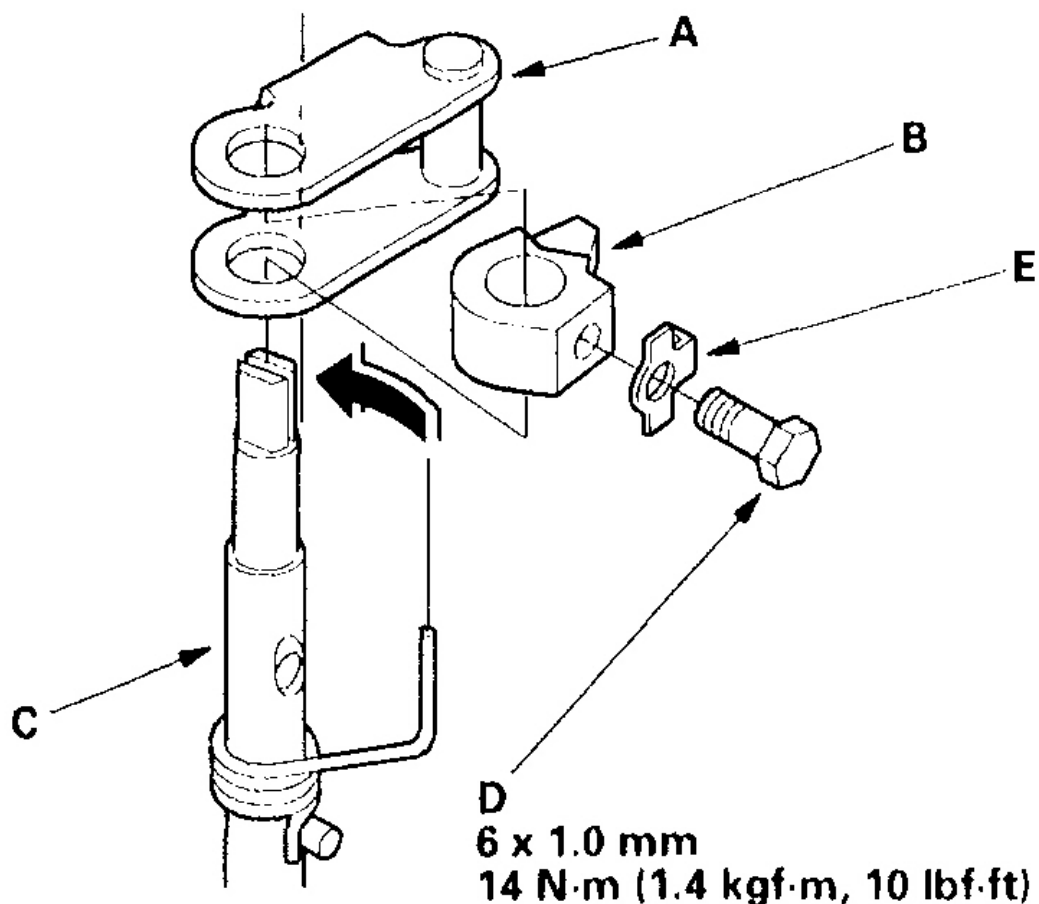
Fig. 120: Assembling & Installing Reverse Idler Gear Shaft & Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION END COVER

END COVER, 3RD GEAR, IDLER GEAR & 3RD CLUTCH INSTALLATION

Special Tools Required:

- Mainshaft holder 07GAB-PF50101 or 07GAB-PF50100.
 - Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A.
1. Install the park lever (A) and park lever stop (B), on the control shaft (C), then install the lock bolt (D) with a new lock washer (E). Do not bend the lock tab of the lock washer until step 28.



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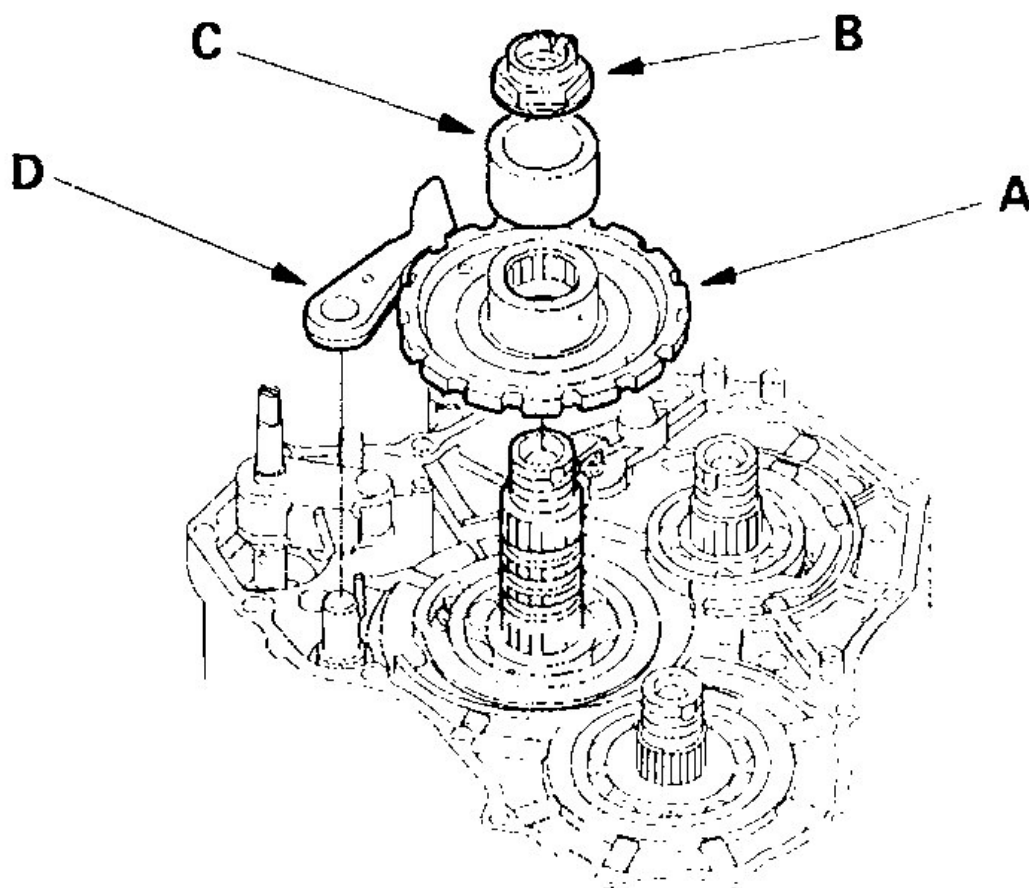
Fig. 121: Assembling Park Lever & Park Lever Stop Onto Control Shaft With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Lubricate the following parts with ATF:
 - Splines of the countershaft, the park gear, and the old locknut.
 - Threads of the countershaft and the old locknut.
 - Old conical spring washer.
3. Install the park gear (A) using the old locknut (B) and a collar (C). Hold the park pawl (D) against the park gear, then tighten the old locknut until the shaft splines come out over the park gear splines.

NOTE:

- Do not use an impact wrench.
- Countershaft locknut has left-hand threads.



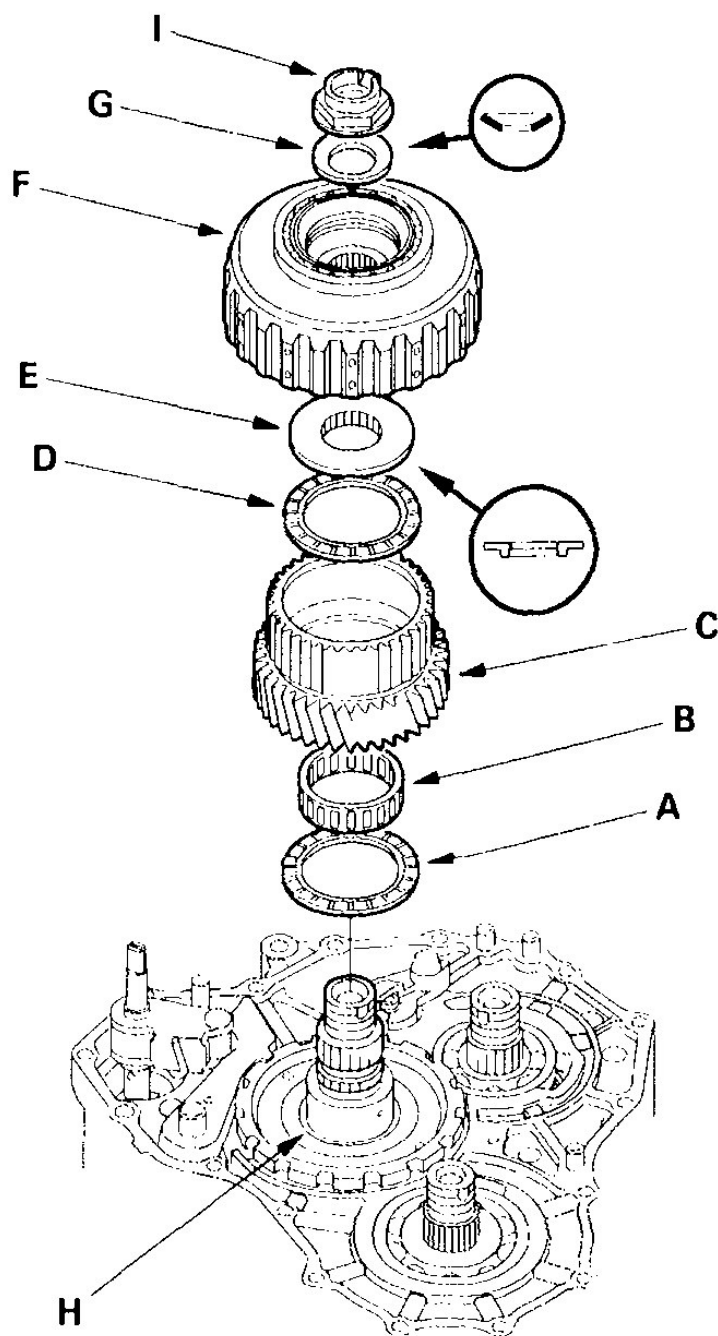
G01502543

Fig. 122: Installing Park Gear Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the locknut and collar.
5. Install the thrust needle bearing (A), needle bearing (B), 3rd gear (C), thrust needle bearing (D), 31 x 63.5 mm splined washer (E), 3rd clutch assembly (F), and old conical spring washer (G) on the countershaft (H). Tighten the old locknut (I) to 226 N.m (23.0 kgf.m, 166 lbf.ft).

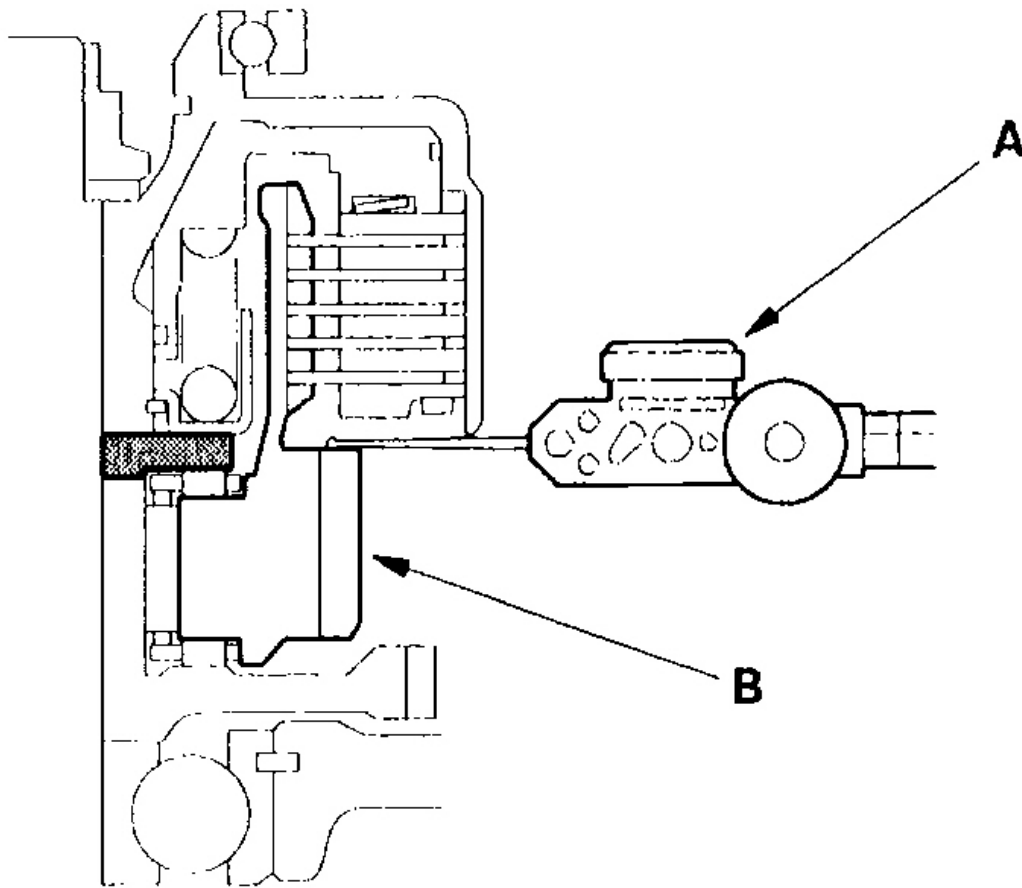
NOTE: Use a torque wrench to tighten the locknut. Do not use an impact wrench.



G01502544

Fig. 123: Assembling 3rd Clutch & Gear Components
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set the dial indicator (A) to the countershaft 3rd gear (B).



G01502545

Fig. 124: Mounting Dial Indicator To Measure Countershaft 3rd Gear Axial Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the countershaft 3rd gear axial clearance in at least three places, while moving the countershaft 3rd gear (A).

Use the average as the actual clearance.

If the clearance is out of standard, select the appropriate 31 x 63.5 mm splined washer in step 16.

Standard - 0.015-0.045 mm (0.0006-0.0018 in.).

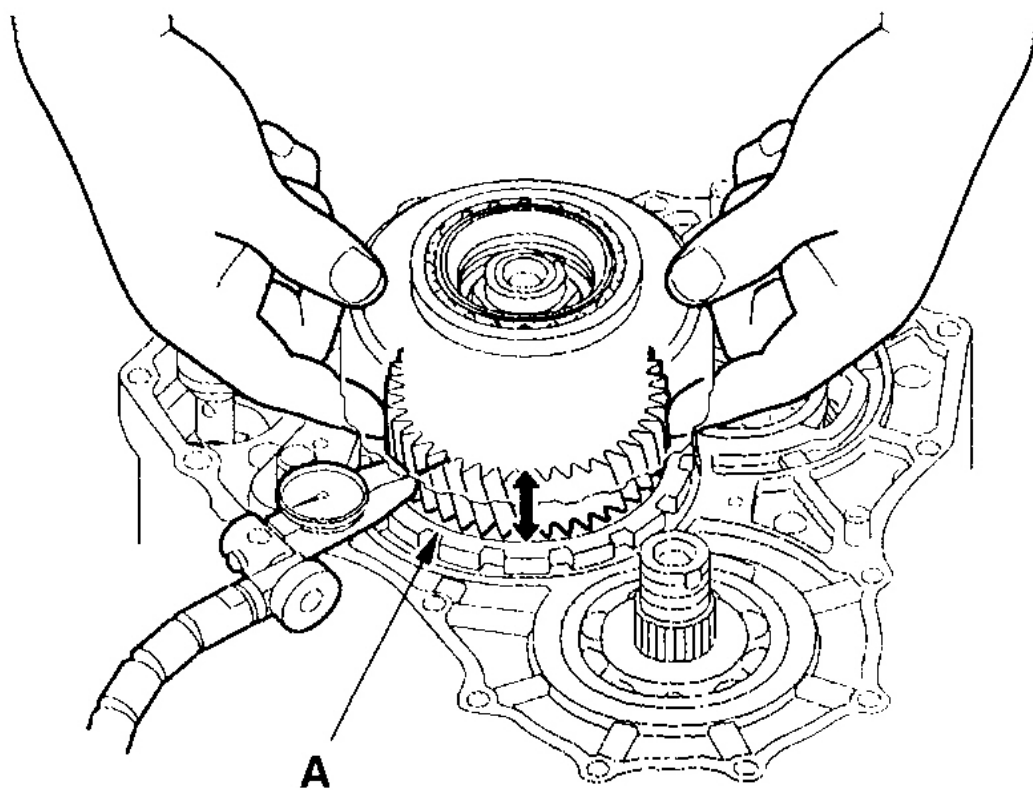
**G01502546**

Fig. 125: Measuring Countershaft 3rd Gear Axial Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the locknut and conical spring washer.
9. Remove the 3rd clutch assembly (A) with the special tool and a commercially available 3/8-16" slide hammer (B).

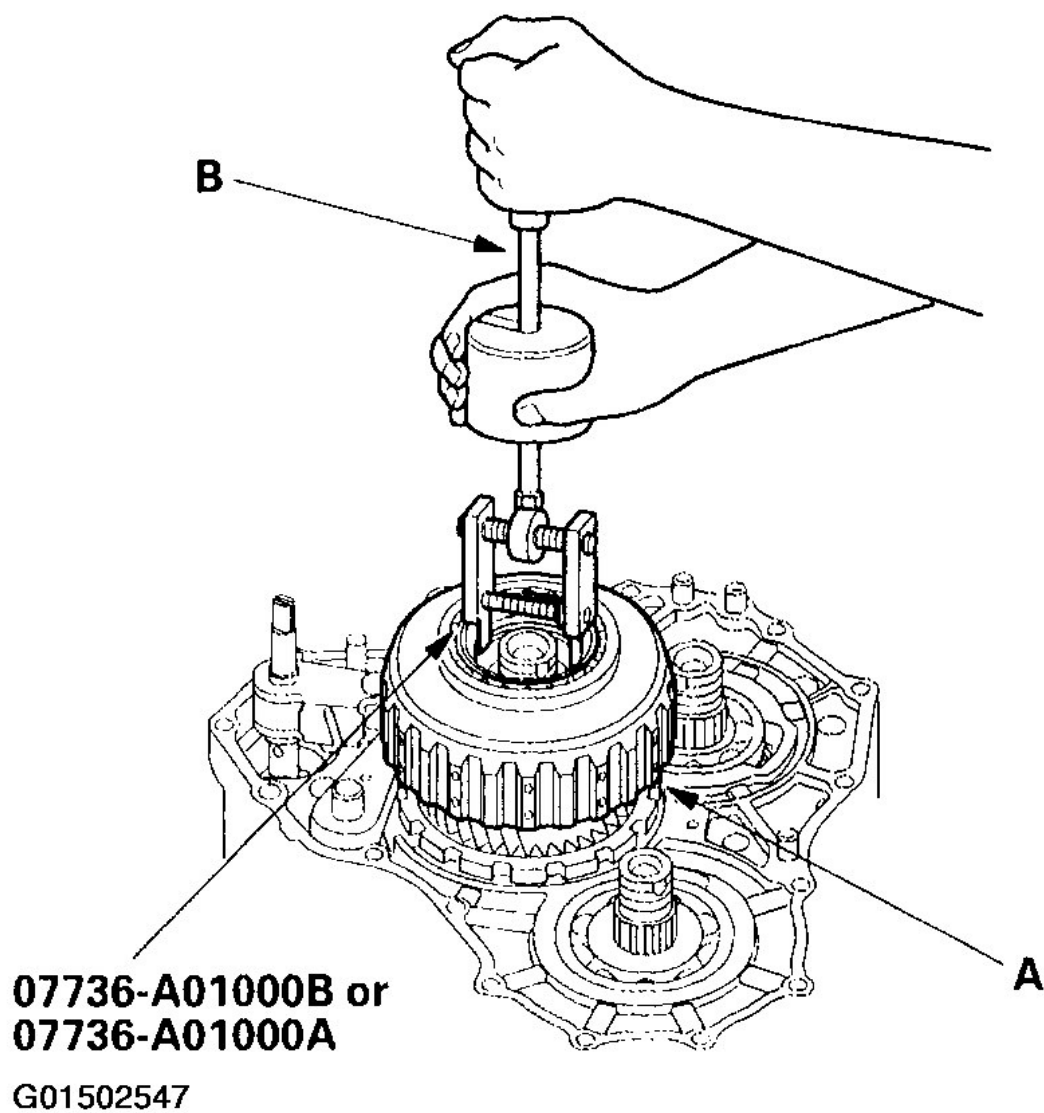


Fig. 126: Removing 3rd Clutch Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the parts that were installed in step 5.
11. Install the special tool onto the mainshaft.

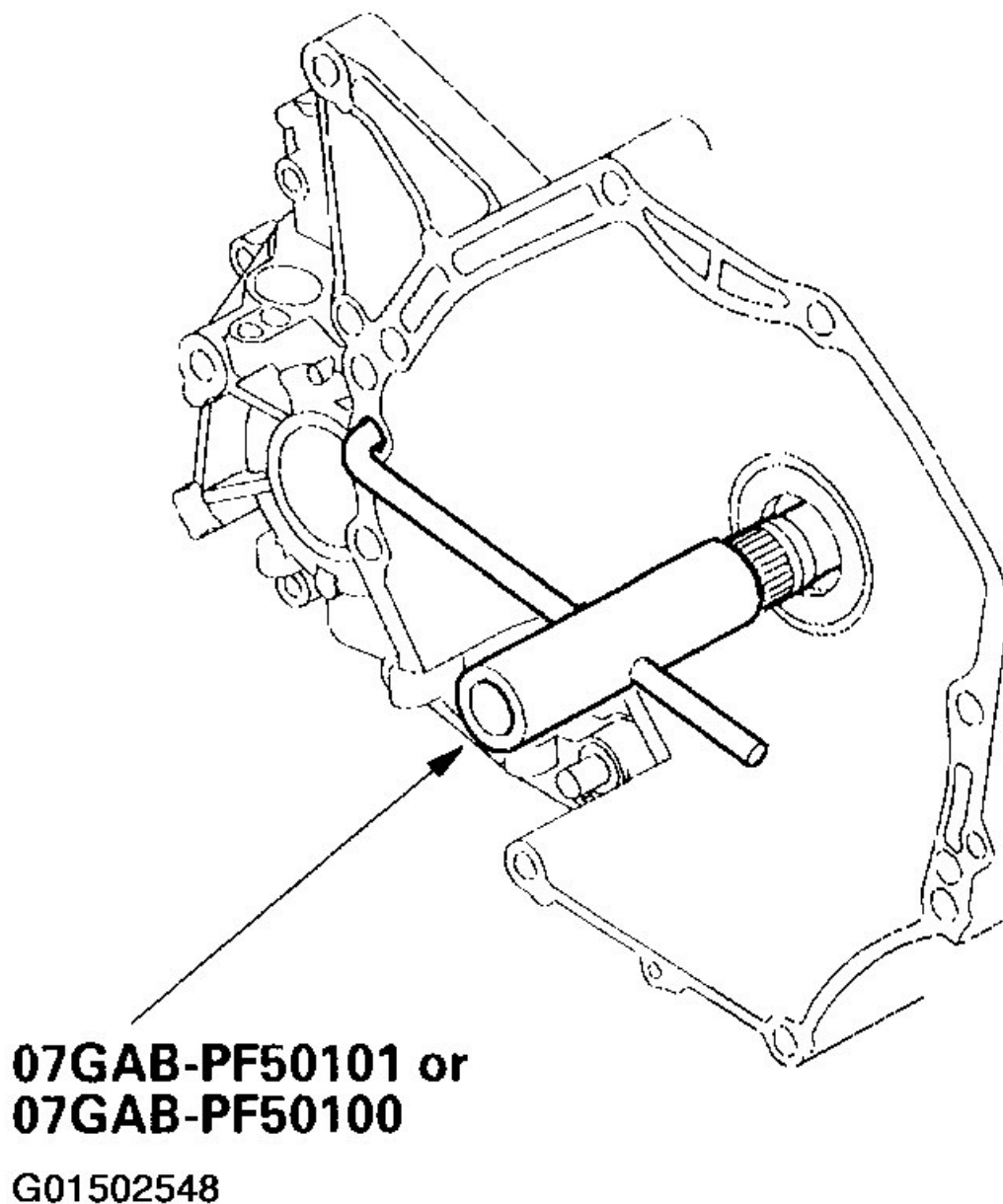
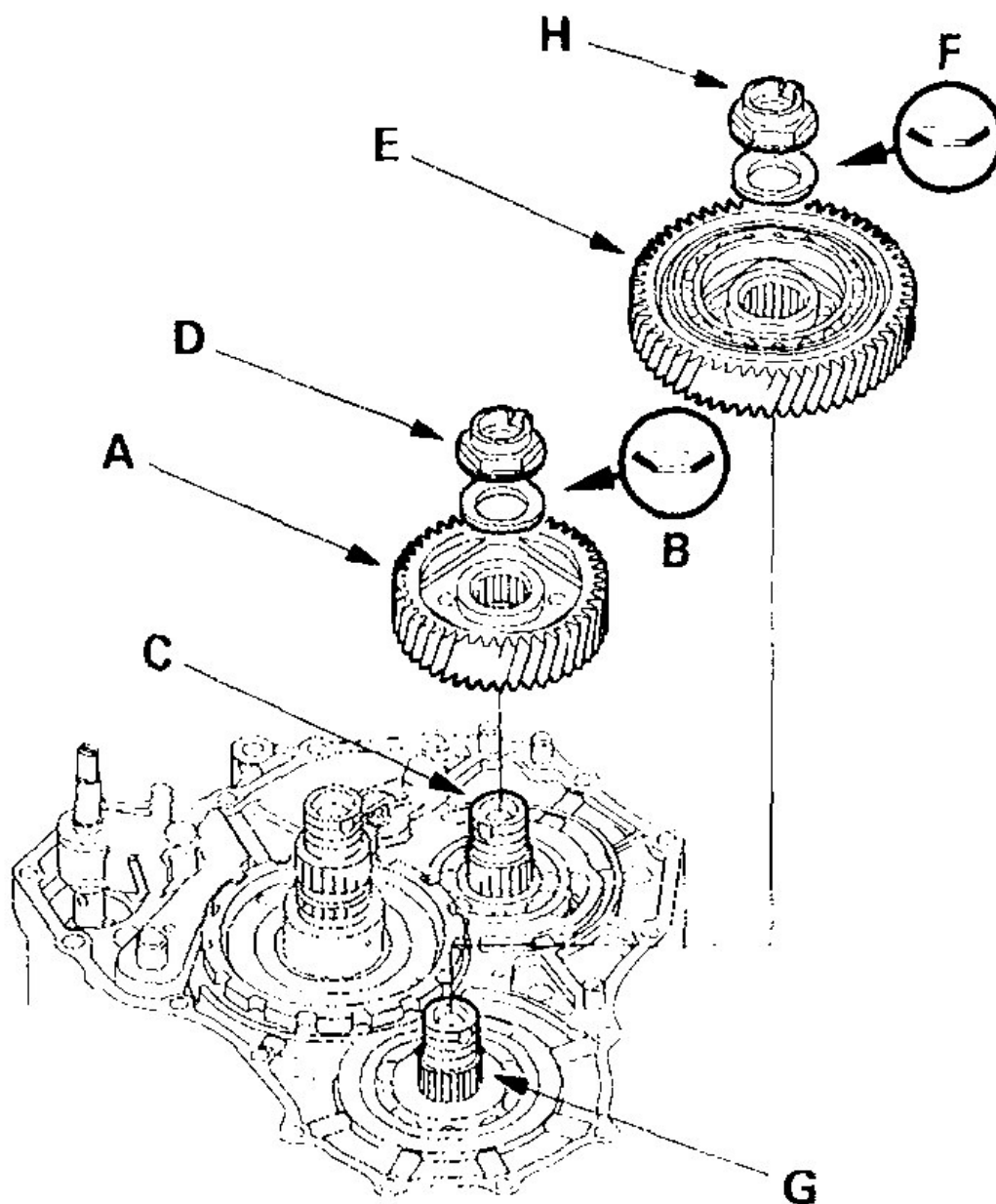


Fig. 127: Installing Special Tool Onto Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Lubricate the following parts with ATF:
 - Splines of the mainshaft 3rd gear and secondary shaft idler gear.
 - Threads of the mainshaft and secondary shaft.

- Threads of the old mainshaft and secondary shaft locknuts.
 - Old conical spring washer.
13. Install the mainshaft 3rd gear (A) and the old conical spring washer (B) on the mainshaft (C). Tighten the old locknut (D) to seat the 3rd gear to 226 N.m (23.0 kgf.m, 166 lbf.ft).

NOTE: **Use a torque wrench to tighten the locknut. Do not use an impact wrench.**



G01502549

Fig. 128: Seating 3rd Gear Assembly

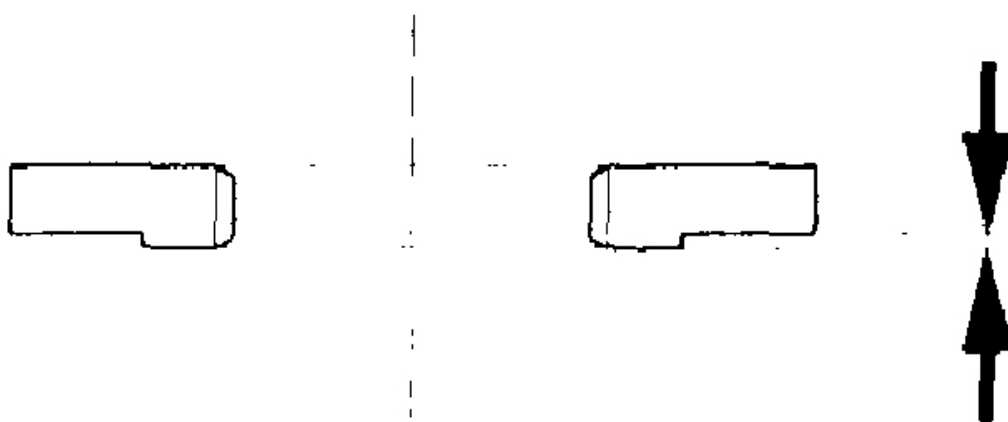
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the secondary shaft idler gear (E) and the old conical spring washer (F) on the secondary shaft (G). Tighten the old locknut (H) to seat the secondary shaft idler gear to 226 N.m (23.0 kgf.m, 166 lbf.ft).

NOTE:

- Use a torque wrench to tighten the locknut. Do not use an impact wrench.
- Secondary shaft locknut has left-hand threads.

15. Remove the old locknuts and old conical spring washers from the mainshaft and secondary shaft.
16. If the 3rd gear axial clearance is out of standard (measured in step 7, measure the difference of the 31 x 63.5 mm splined washer, and select the appropriate splined washer from the table.



G01502550

Fig. 129: Measuring Difference Of 31 x 63.5 mm Splined Washer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mark	Part Number	Difference
A	90520-P7W-000	3.503 mm (0.1379 in.)
B	90521-P7W-000	3.490 mm (0.1374 in.)
C	90522-P7W-000	3.477 mm (0.1369 in.)
D	90523-P7W-000	3.464 mm (0.1364 in.)

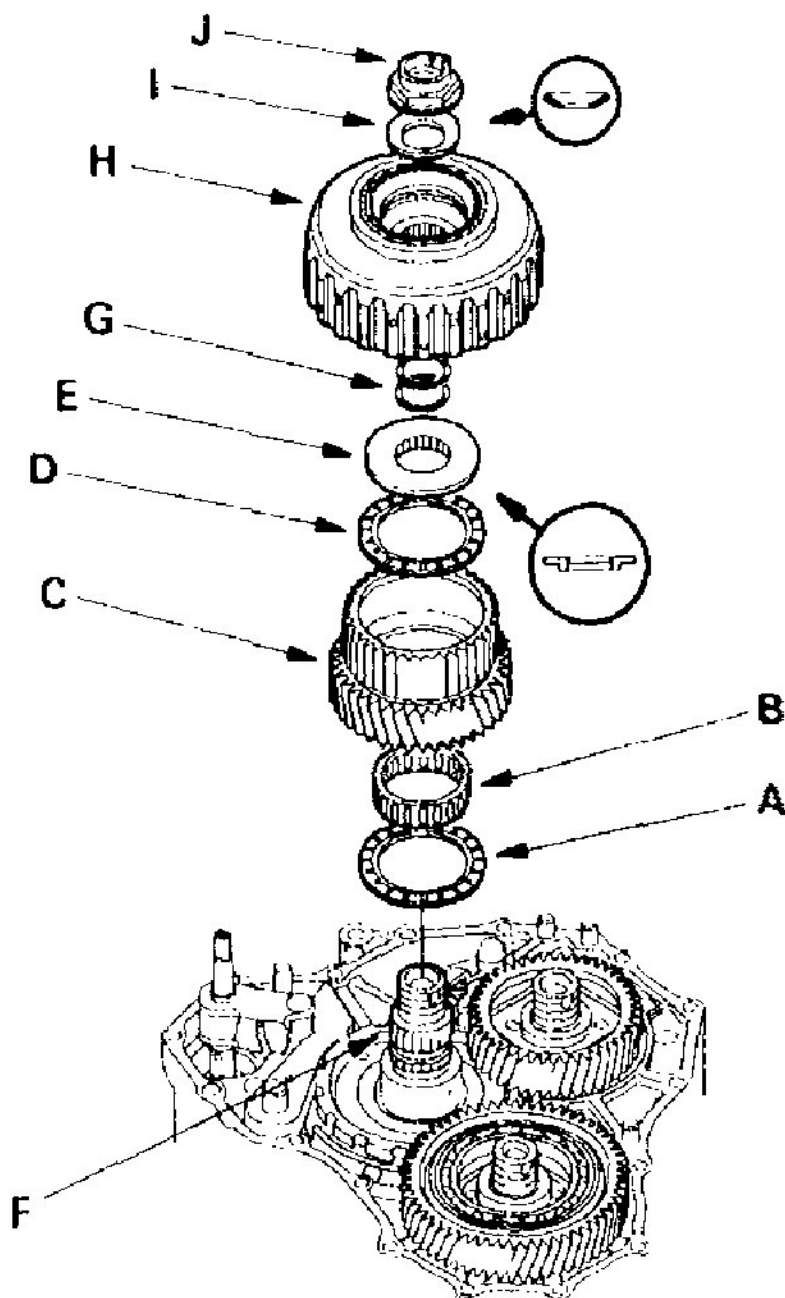
G01502551

Fig. 130: Splined Washer Selection Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the thrust needle bearing (A), needle bearing (B), 3rd gear (C), thrust needle bearing (D), and 31 x 63.5 mm splined washer (E) on the countershaft (F).
18. Wrap the shaft splines with tape to prevent O-ring damage, then install new O-rings (G).
19. Remove the tape, then install the 3rd clutch assembly (H), and old conical spring washer (I). Tighten the old locknut (J) to 226 N.m (23.0 kgf.m, 166 lbf.ft).

NOTE: **Use a torque wrench to tighten the locknut. Do not use an impact wrench.**

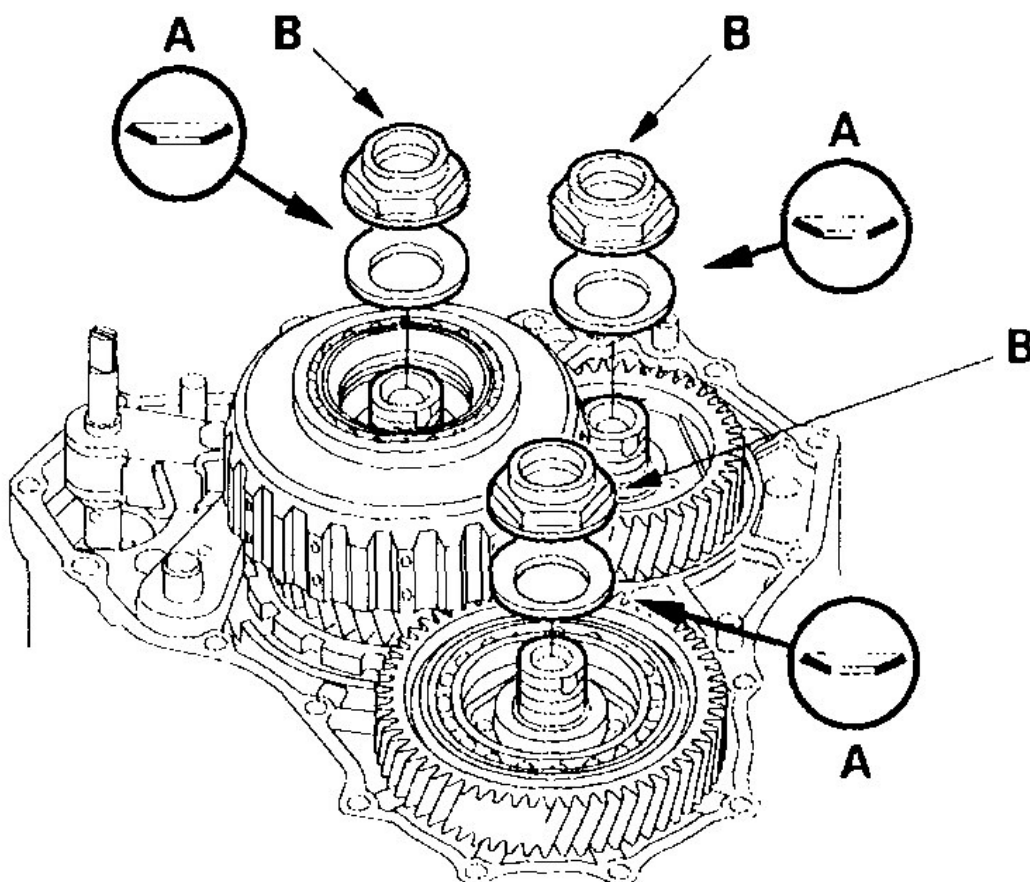


G01502552

Fig. 131: Installing 3rd Clutch Assembly & Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the old locknut and old conical spring washer from the countershaft.

21. Lubricate the threads of each shaft, the new locknuts, and new conical spring washers with ATF.
22. Install the new conical spring washers (A) in the direction shown, and install the new locknuts (B).



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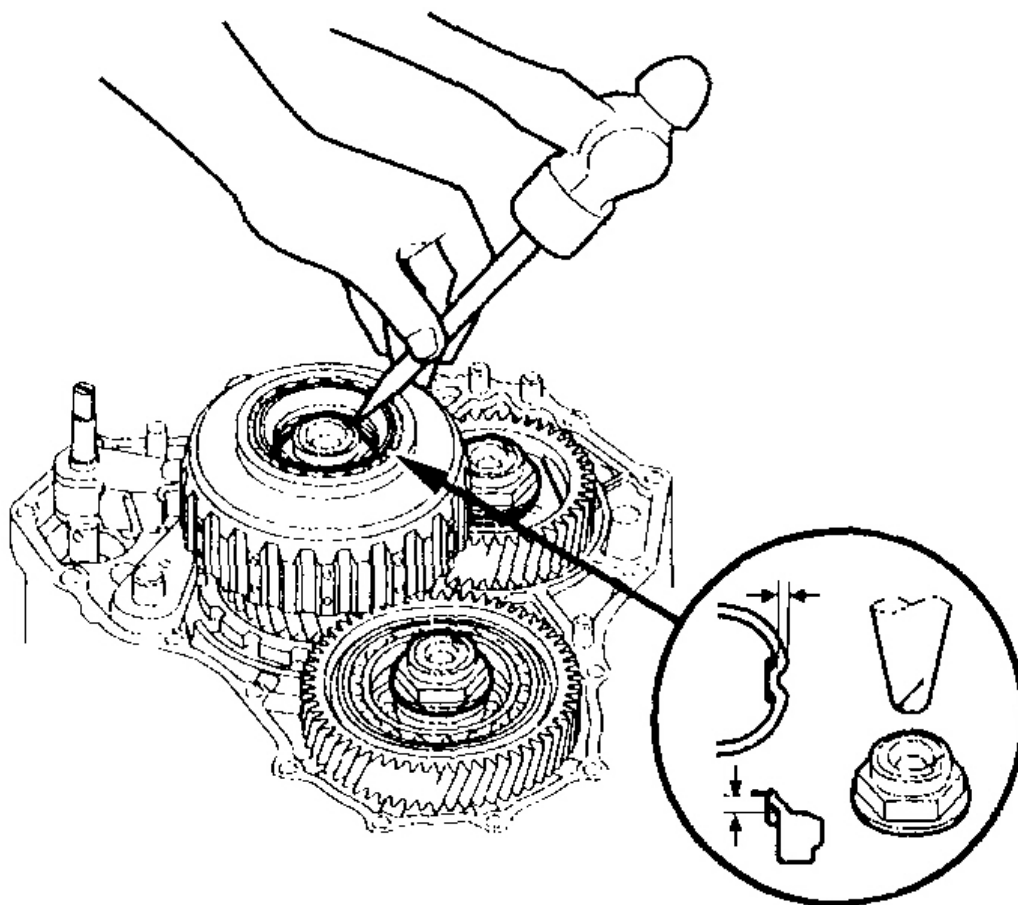
Fig. 132: Proper Installation Of New Conical Spring Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Tighten the locknuts to 167 N.m (17.0 kgf.m, 123 lbf.ft).

NOTE:

- Use a torque wrench to tighten the locknuts. Do not use an impact wrench.
- Countershaft and secondary shaft locknuts have left-hand threads.

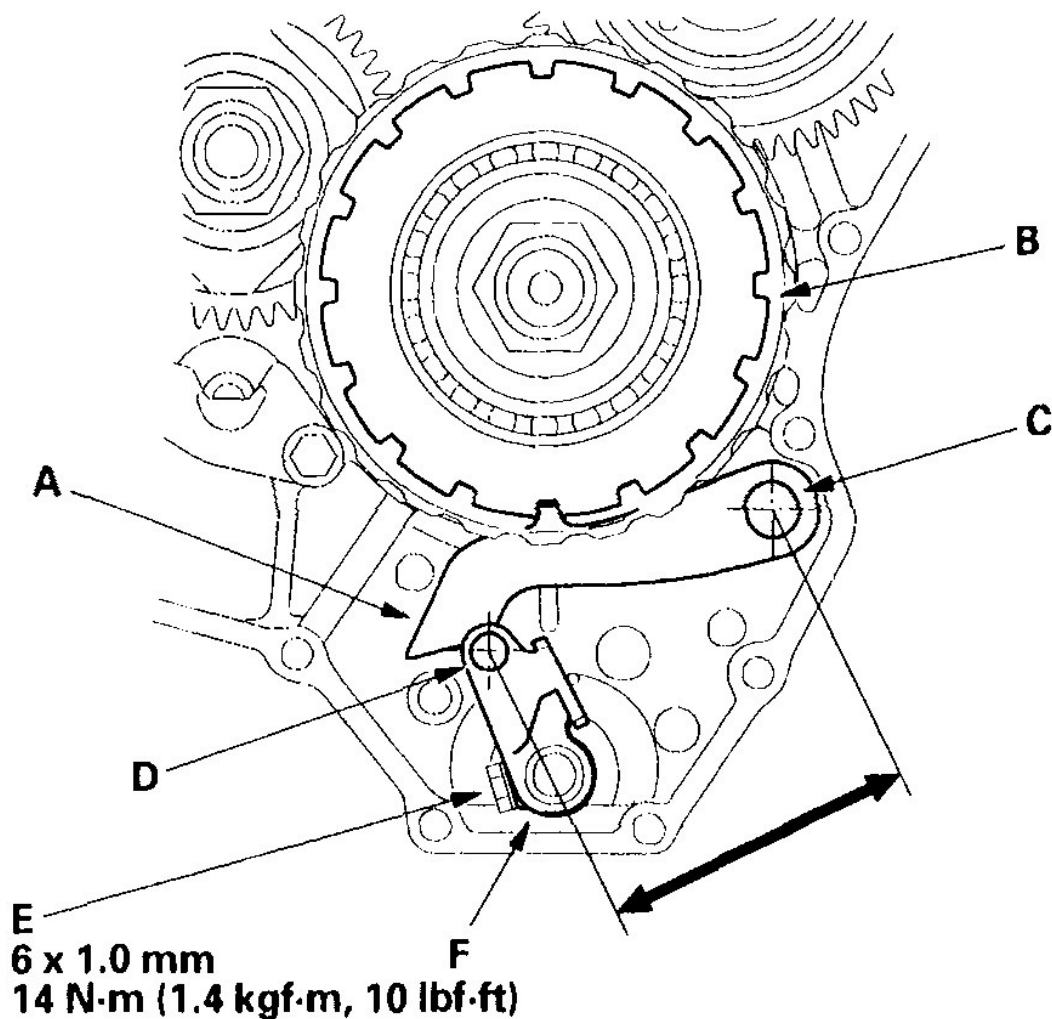
24. Remove the special tool from the mainshaft.
25. Stake each locknut into its shaft using 3.5 mm punch.



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Fig. 133: Staking Each Locknut Into Its Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

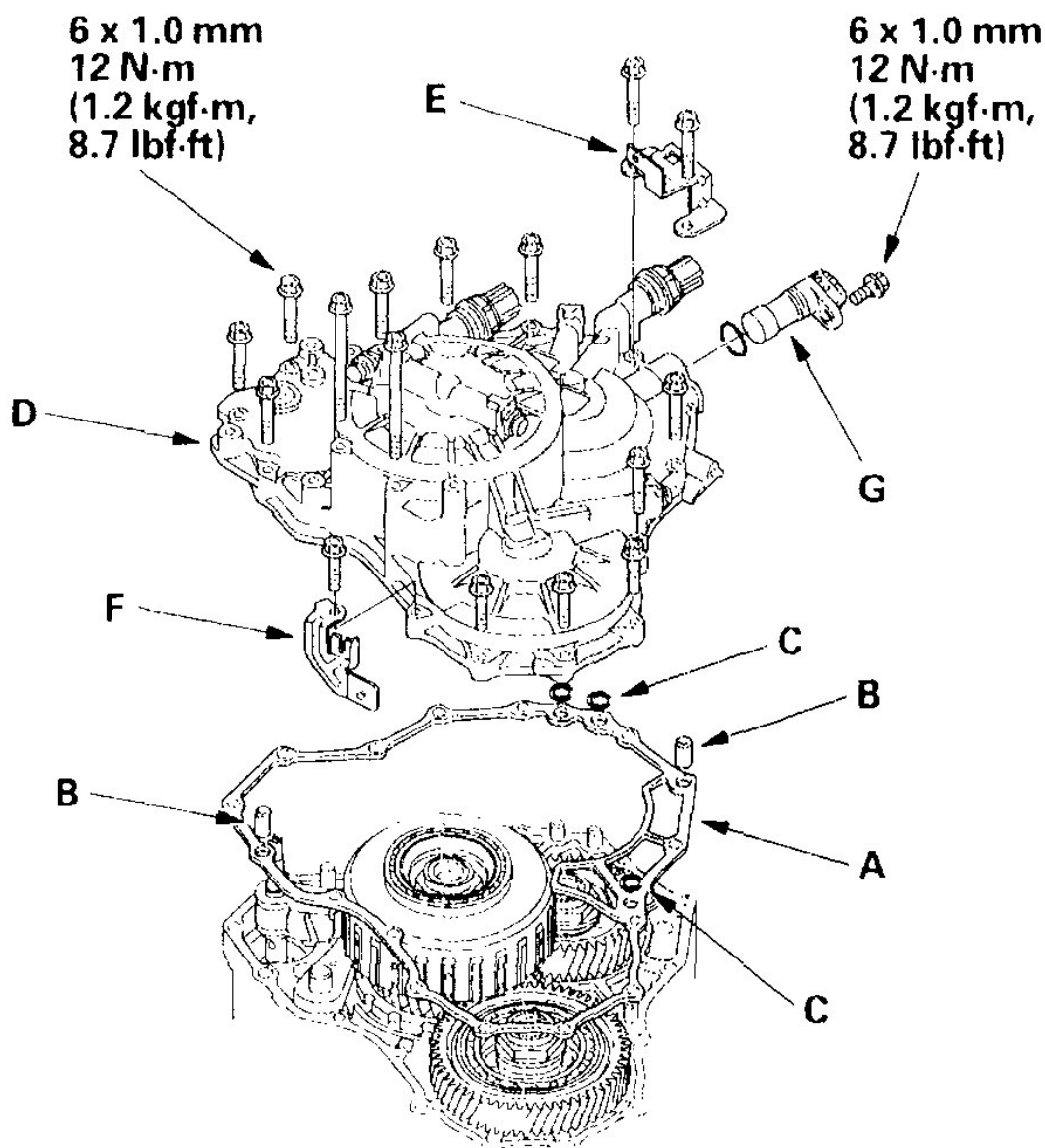
26. Set the park lever in P position, then verify that the park pawl (A) engages the park gear (B).



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Fig. 134: Ensuring Park Pawl Engages Park Gear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

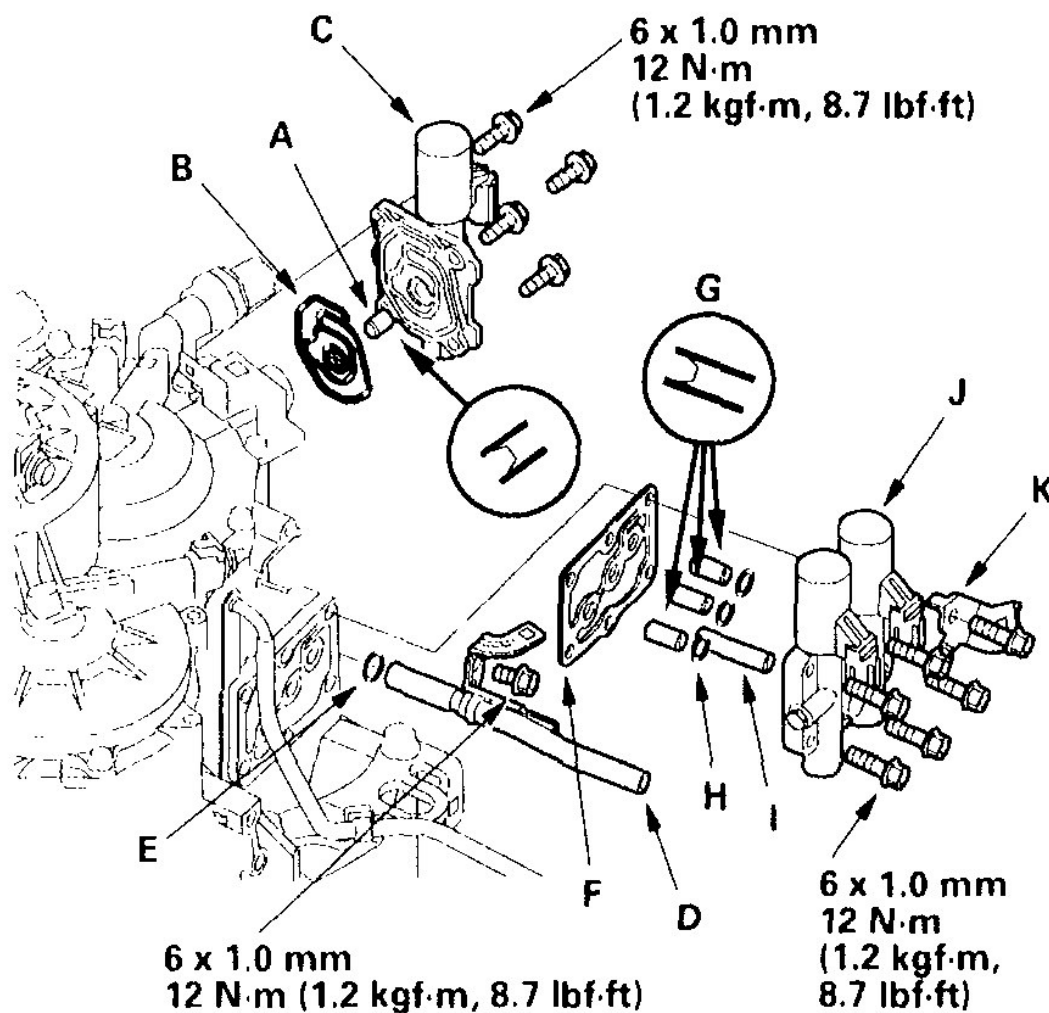
27. If the park pawl does not engage fully, check the distance between the pawl shaft (C) and the park lever roller pin (D) (see **PARK LEVER STOP INSPECTION & ADJUSTMENT**).
28. Tighten the lock bolt (E), and bend the lock tab of the lock washer (F) against the lock bolt head.
29. Install the new gasket (A) on the transmission housing, and install the two dowel pins (B) and new O-rings (C) over the top of the ATF feed pipes.



G01502556

Fig. 135: Installing New Transmission Housing Gasket, Two Dowel Pins & New O-Rings Over Top Of ATF Feed Pipes With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Install the end cover (D), and install the 13 bolts, connector bracket (E) and harness clamp bracket (F).
31. Tighten the bolts in two or more steps in a crisscross pattern.
32. Install the new O-ring on the input shaft (mainshaft) speed sensor, then install it in the end cover.
33. Install the 8 x 12 mm ATF feed pipe (A) with its filter side into the transmission housing.



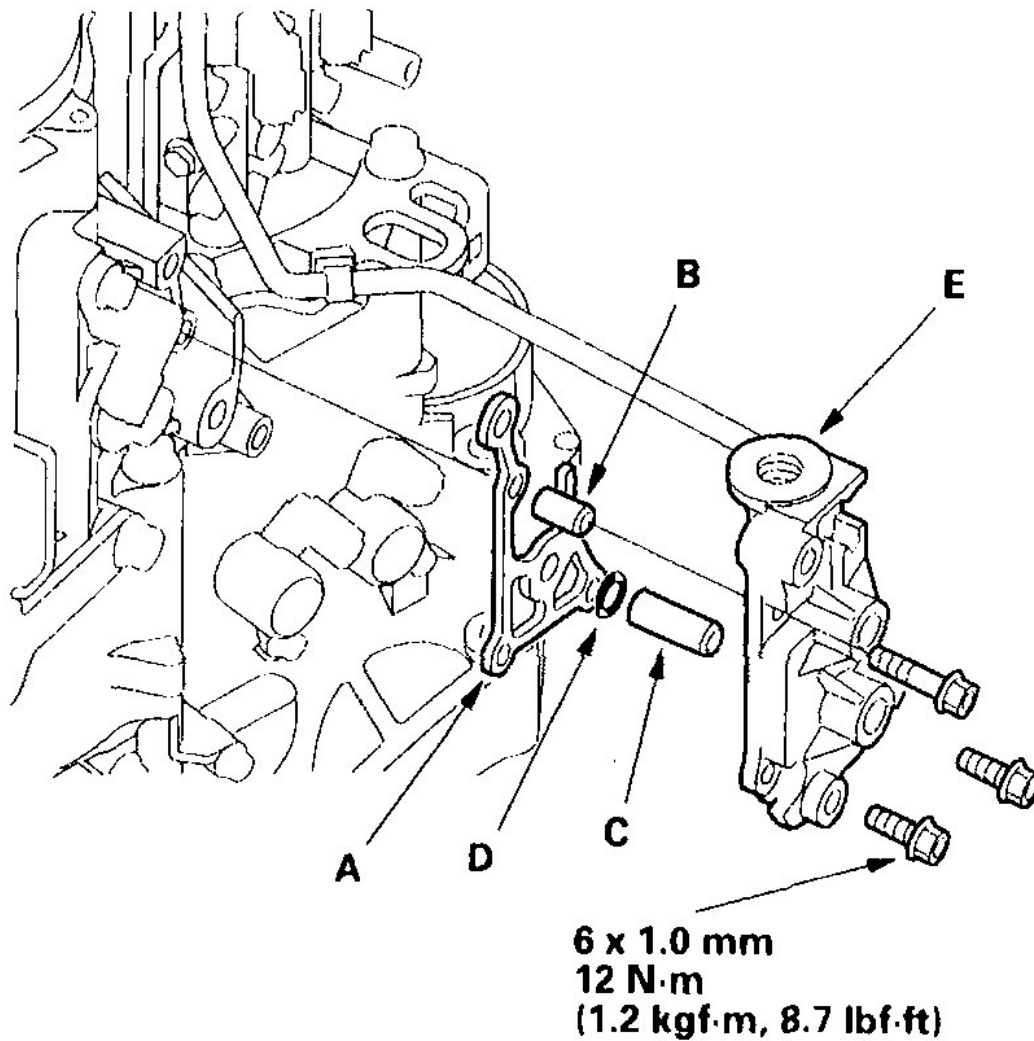
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Fig. 136: Installing ATF Feed Pipe With Its Filter Side Into Transmission Housing With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Install the new gasket (B) in the mounting groove of the A/T clutch pressure control solenoid valve C body (C) properly, then install them on the transmission housing. Do not pinch the gasket.
35. Install the ATF dipstick guide pipe (D) with the new O-ring (E).
36. Place the new gasket (F) on the transmission housing, then install the 8 x 18 mm ATF feed pipes (G) with their filter side into the transmission housing.
37. Install the new O-rings (H) over the feed pipes, and install the 8 x 40 mm ATF feed pipe (I).
38. Install the A/T clutch pressure control solenoid valves A and B (J) and the harness clamp bracket (K).
39. Place the new ATF passage body gasket (A) on the transmission housing, then install the 8 x 14 mm

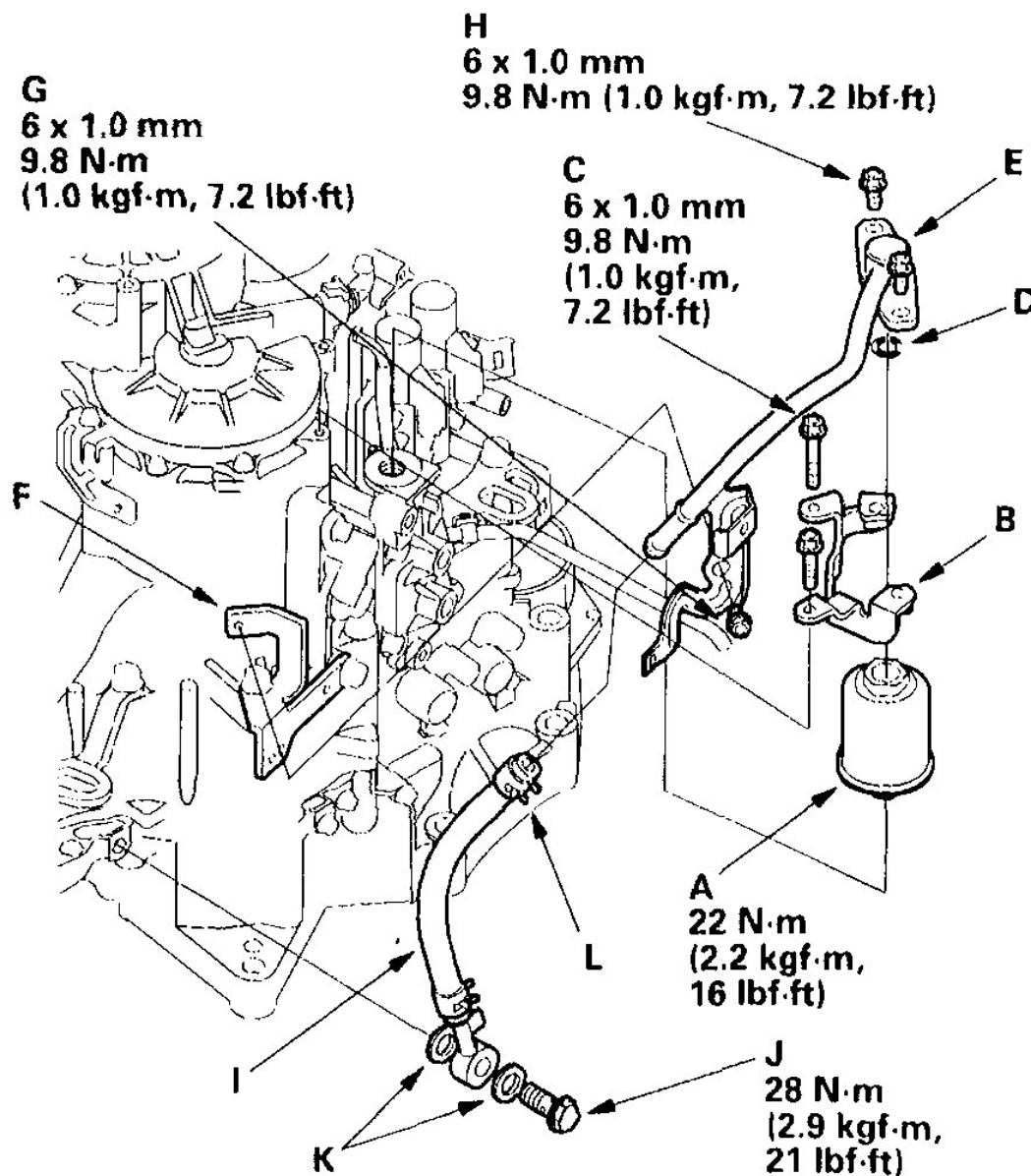
dowel pin (B) and the 10 x 25.5 mm ATF feed pipe (C) with the new O-ring (D). Install the ATF passage body (E) on the transmission housing, if it was removed.



G01502558

Fig. 137: Installing ATF Passage Body With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Install the new ATF filter (A) on the transmission housing.

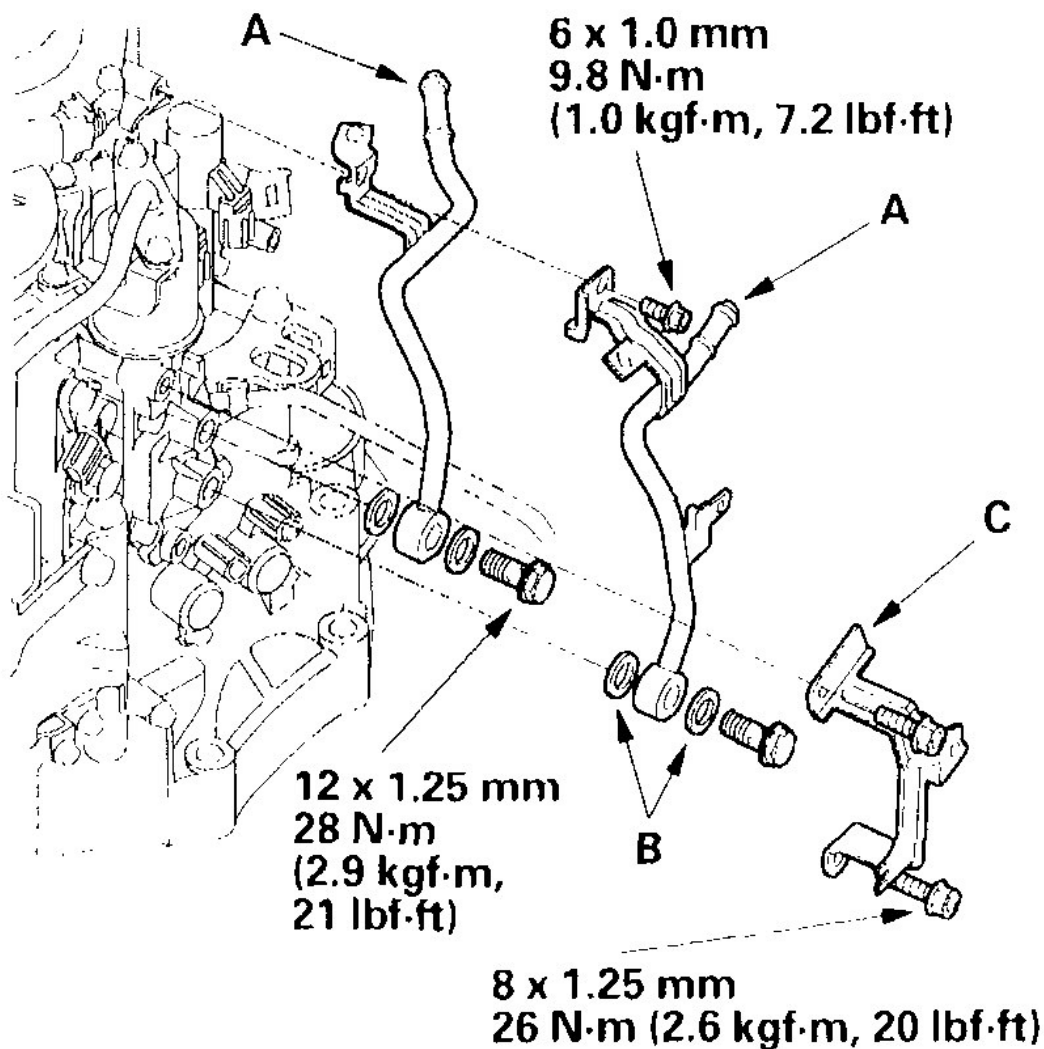


G01502559

Fig. 138: Installing New ATF Filter With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Install the filter line bracket (B) on the ATF filter, and loosely install the bolts (C).
42. Install the new O-ring (D) to the filter line (E), then install the filter line on the ATF filter.
43. Secure the end of the filter line on the bracket (F) with the bolt (G).
44. Secure the filter line on the filter line bracket with the bolts (H).

45. Tighten the bolts (C) on the filter line bracket to the specified torque.
46. Install the ATF hose (I) and line bolt (J) with the new sealing washers (K).
47. Connect the hose to the filter line, and secure it with the clip (L).
48. Install the ATF cooler lines (A) with the new sealing washers (B) and the line bolts, then install the harness clamp bracket (C).

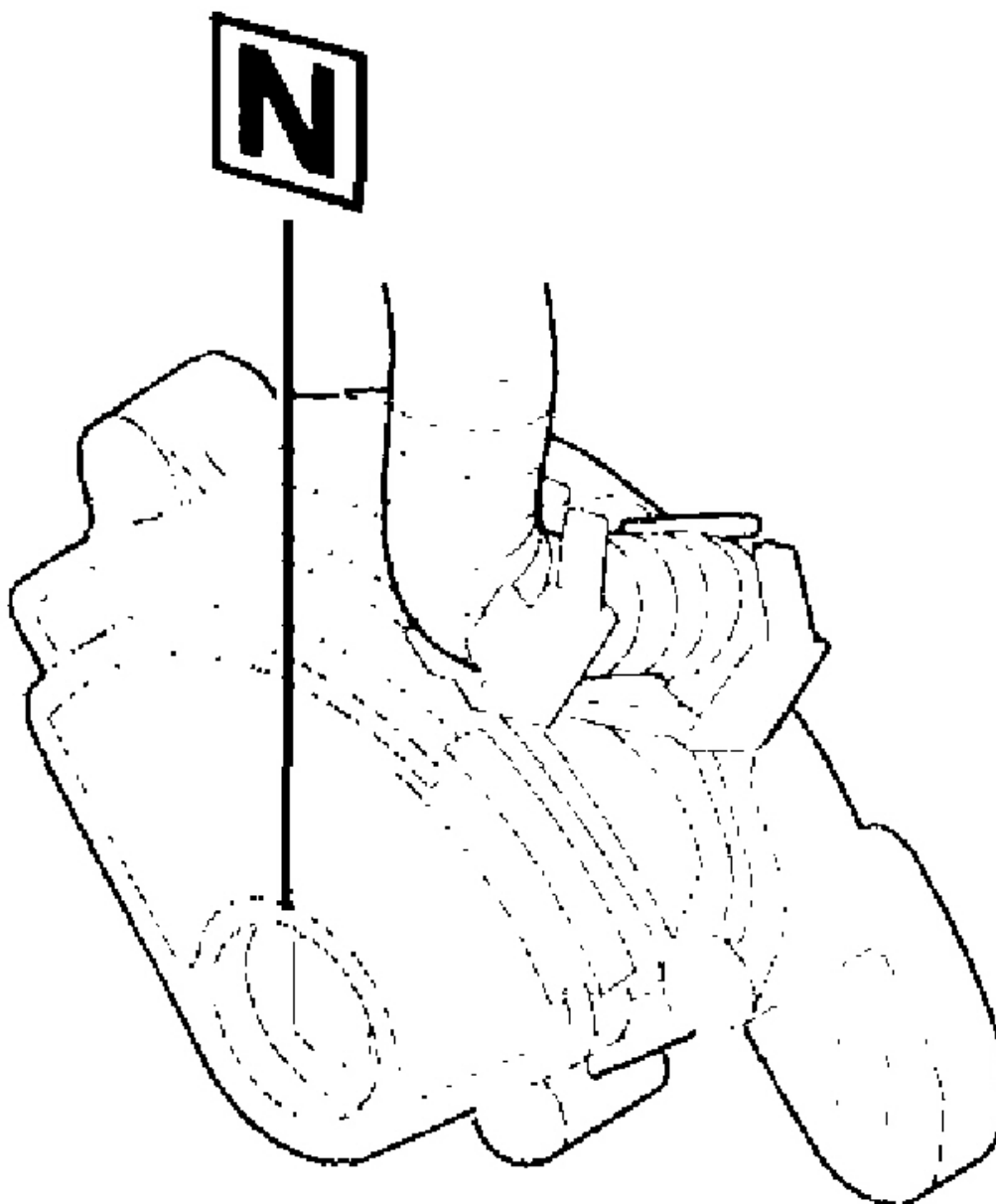


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Fig. 139: Installing ATF Cooler Lines With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Set the transmission range switch to the N position.

NOTE: The transmission range switch clicks in the N position.



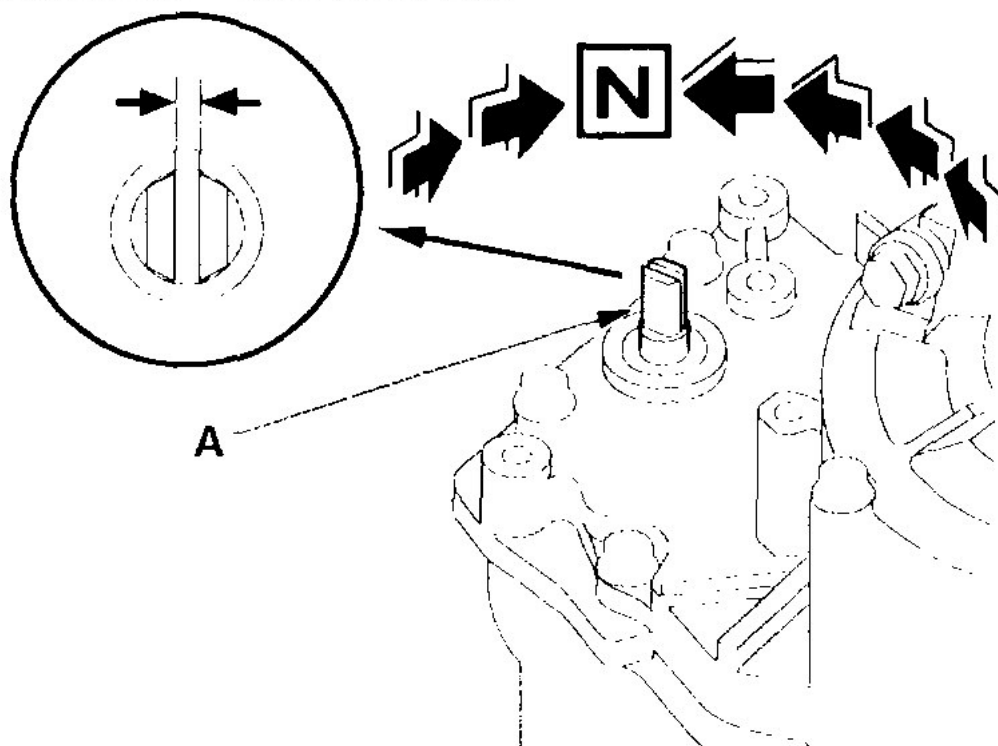
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Fig. 140: Setting Transmission Range Switch In N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Set the control shaft (A) to the N position by turning it.

NOTE: Be careful not to squeeze the end of the control shaft tips together when turning into position. If the tips are squeezed together it will cause a faulty signal or position due to the play between the control shaft and the switch.

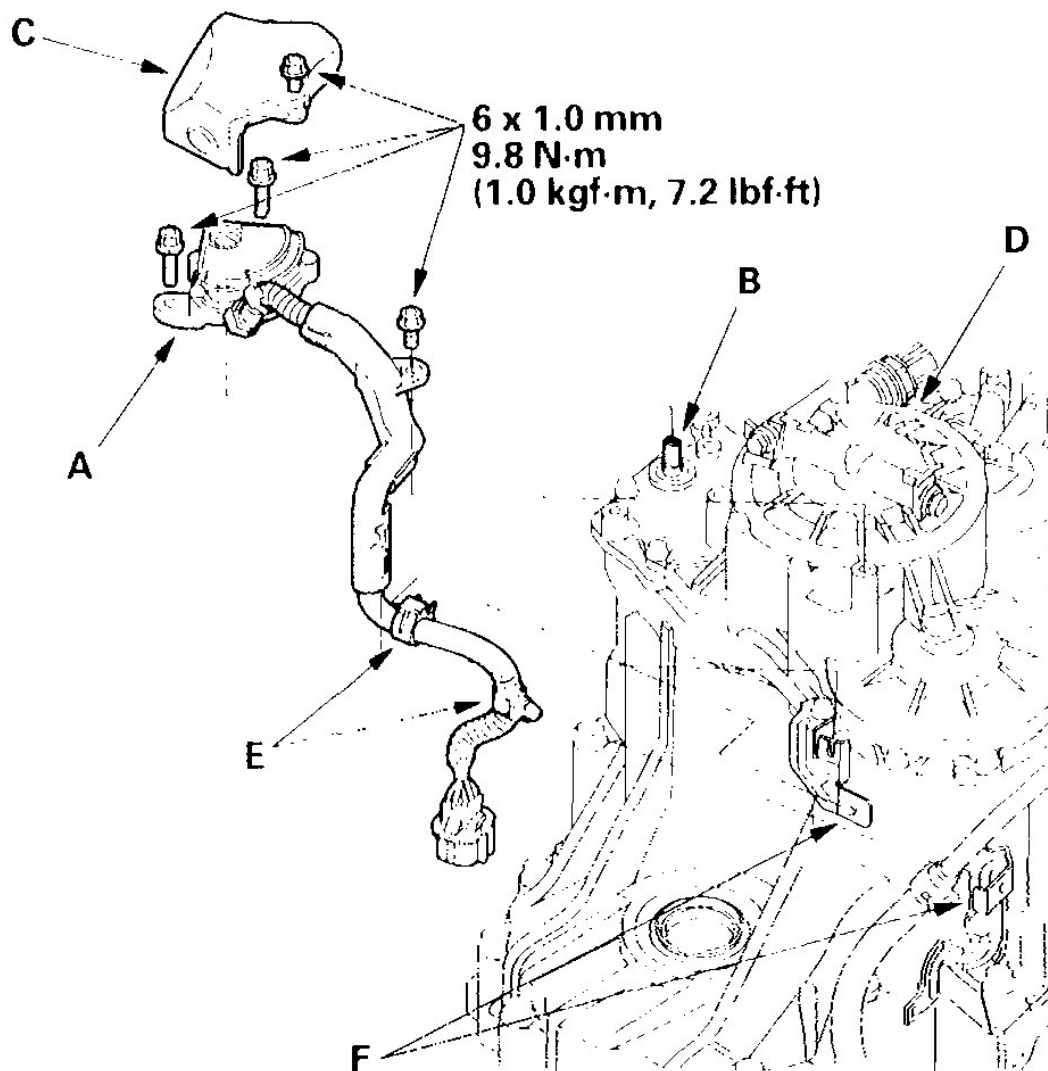
Clearance: 2 mm (0.08 in.)



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Fig. 141: Turning Control Shaft To N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

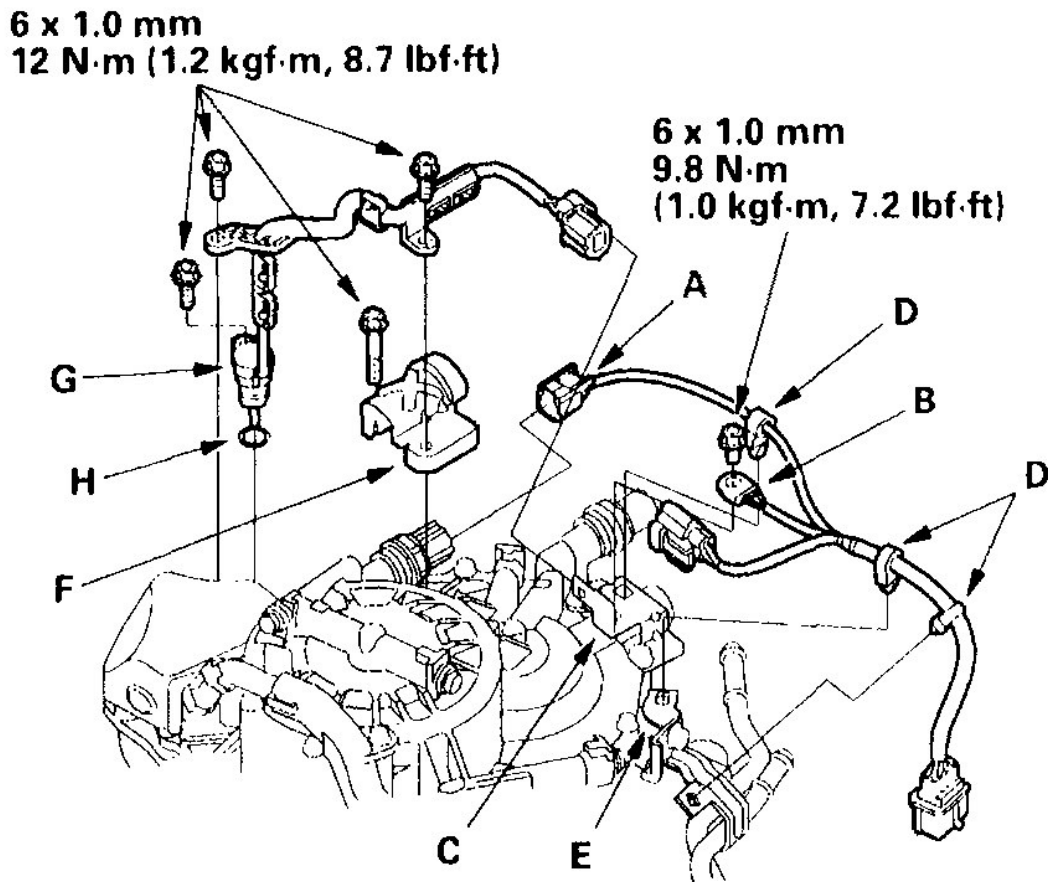
51. Install the transmission range switch (A) gently on the control shaft (B). Do not move the transmission range switch when tightening its bolts.
52. Install the transmission range switch cover (C); secure the harness with the bolt on the end cover (D); install the harness clips (E) on the brackets (F).



G01502563

Fig. 142: Installing Transmission Range Switch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Connect the 3rd clutch pressure switch connector (A) and A/T wire harness ground terminal (B) on the connector bracket (C), then install the clips (D) on the bracket (E).



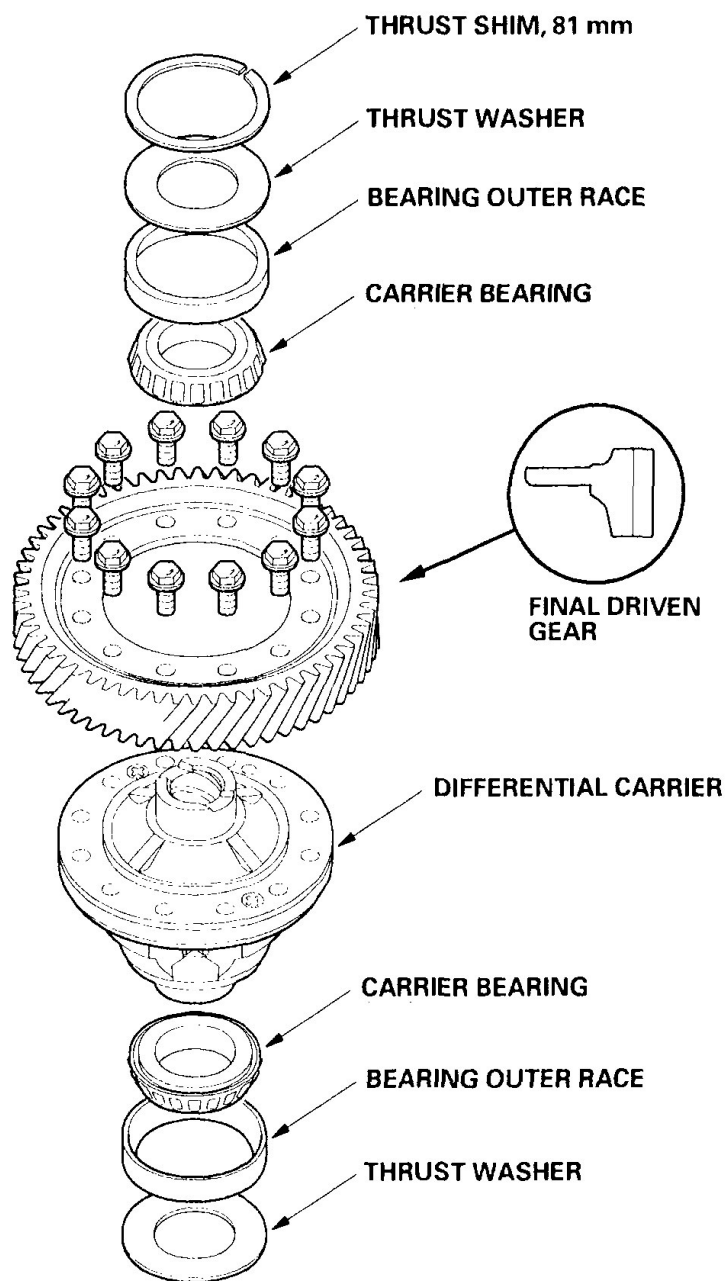
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Fig. 143: Final Connection Of Components On Transmission Housing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Install the switch cover (F).
55. Install the ATF temperature sensor (G) with the new O-ring (H), then secure the harness with the bolts. Connect the sensor connector to the A/T wire harness connector, then install it on the connector bracket (C).
56. Install the dipstick.

A/T DIFFERENTIAL

COMPONENT LOCATION INDEX



G01502565

Fig. 144: Identifying A/T Differential Components
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

BACKLASH INSPECTION

1. Install both axles, and place the differential assembly on V-blocks (A).

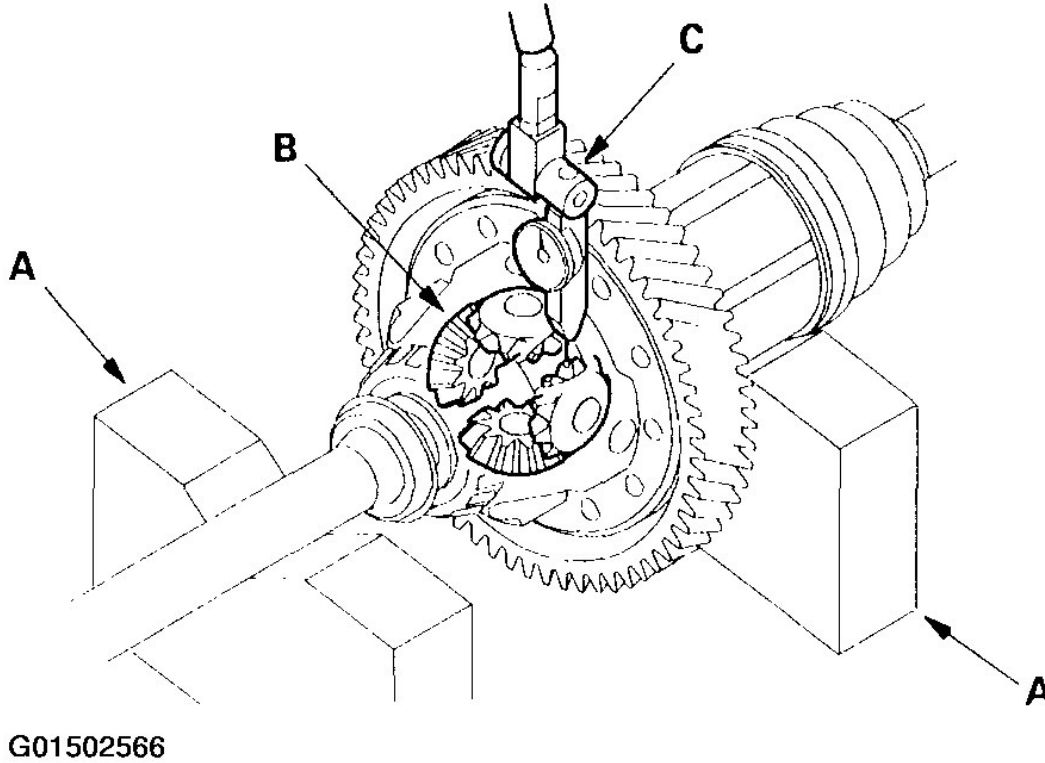


Fig. 145: Preparing Differential For Backlash Inspection
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the backlash of the pinion gears (B) with a dial indicator (C).

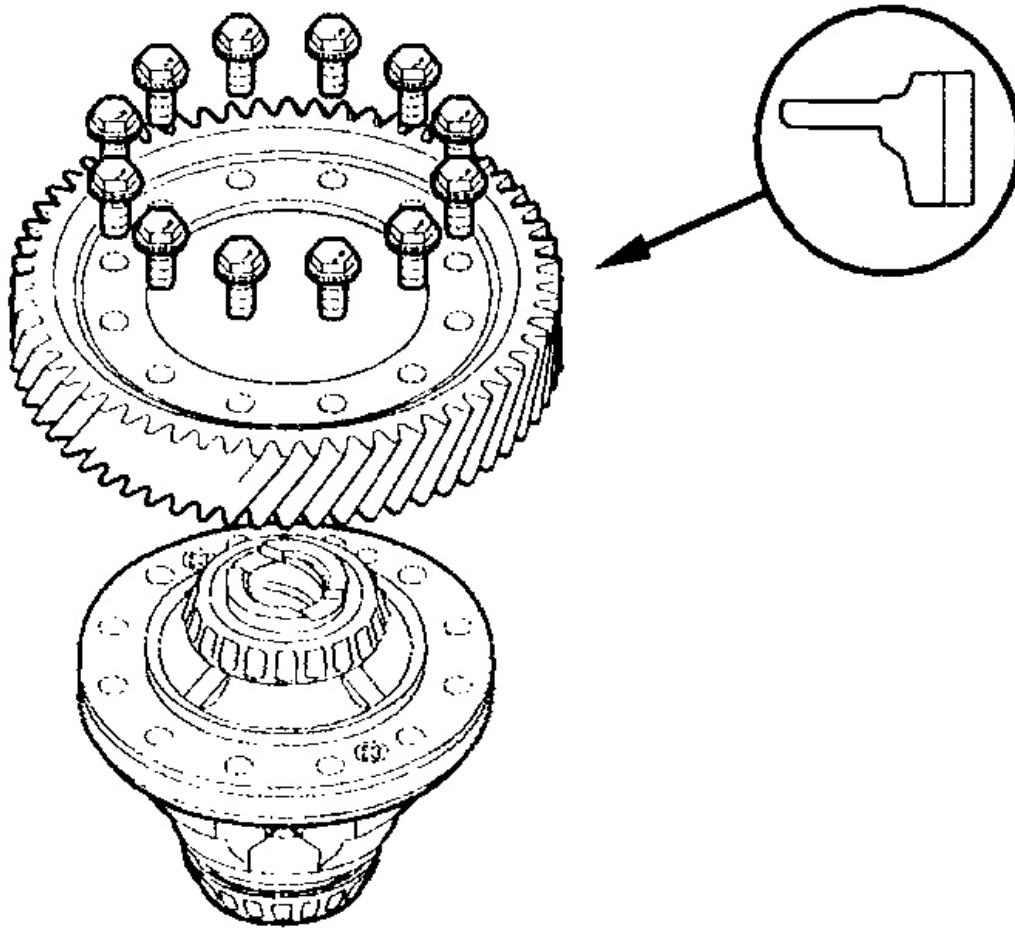
Standard - 0.175-0.275 mm (0.007-0.011 in.).

3. If the backlash is out of standard, replace the differential carrier.

DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR REPLACEMENT

1. Remove the final driven gear from the differential carrier.

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



G01502567

Fig. 146: Removing Final Driven Gear From Differential Carrier
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the final driven gear with the chamfered side on the inner bore facing the differential carrier.
3. Tighten the bolts to the specified torque in a crisscross pattern.

Torque - 101 N.m (10.3 kgf.m, 74.5 lbf.ft).

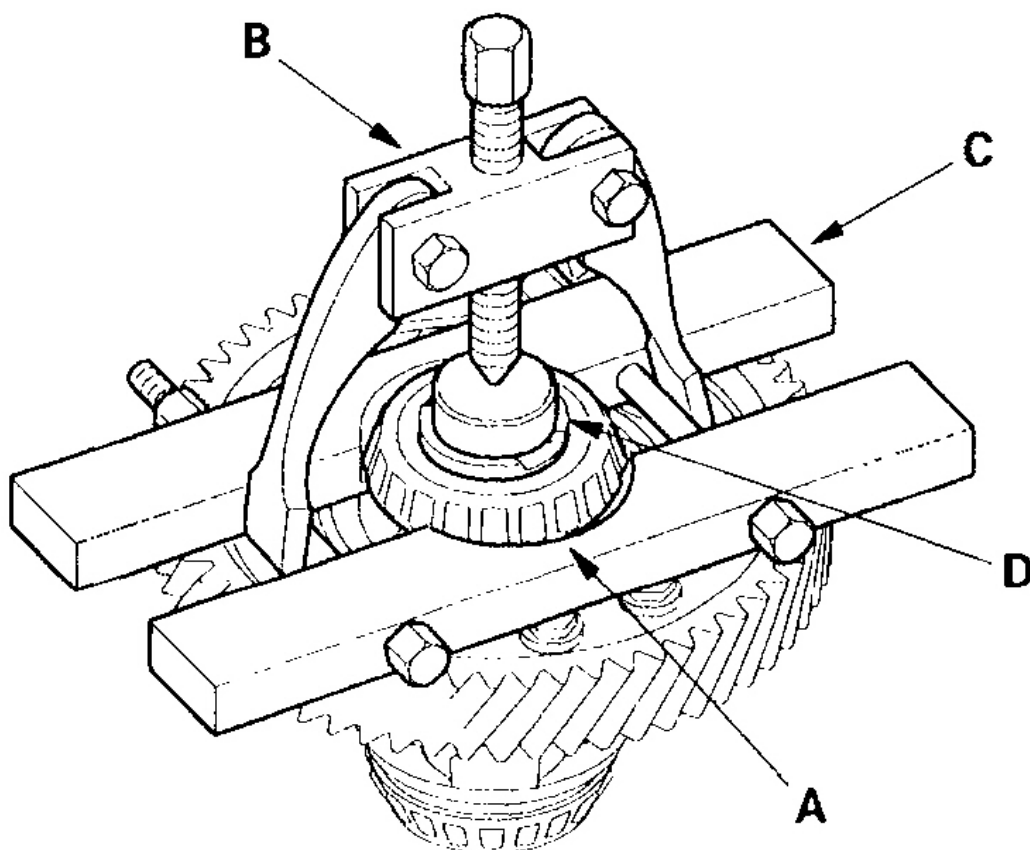
CARRIER BEARING REPLACEMENT

Special Tools Required: Attachment, 40 x 50 mm 07LAD-PW50601.

NOTE:

- The bearing and outer race should be replaced as a set.
- Inspect and adjust the bearing preload whenever bearing is replaced.
- Check the bearing for wear and rough rotation. If the bearing is OK, removal is not necessary.

1. Remove the carrier bearing (A) with a commercially available bearing puller (B), bearing separator (C), and stepped adapter (D).



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Fig. 147: Removing Carrier Bearing

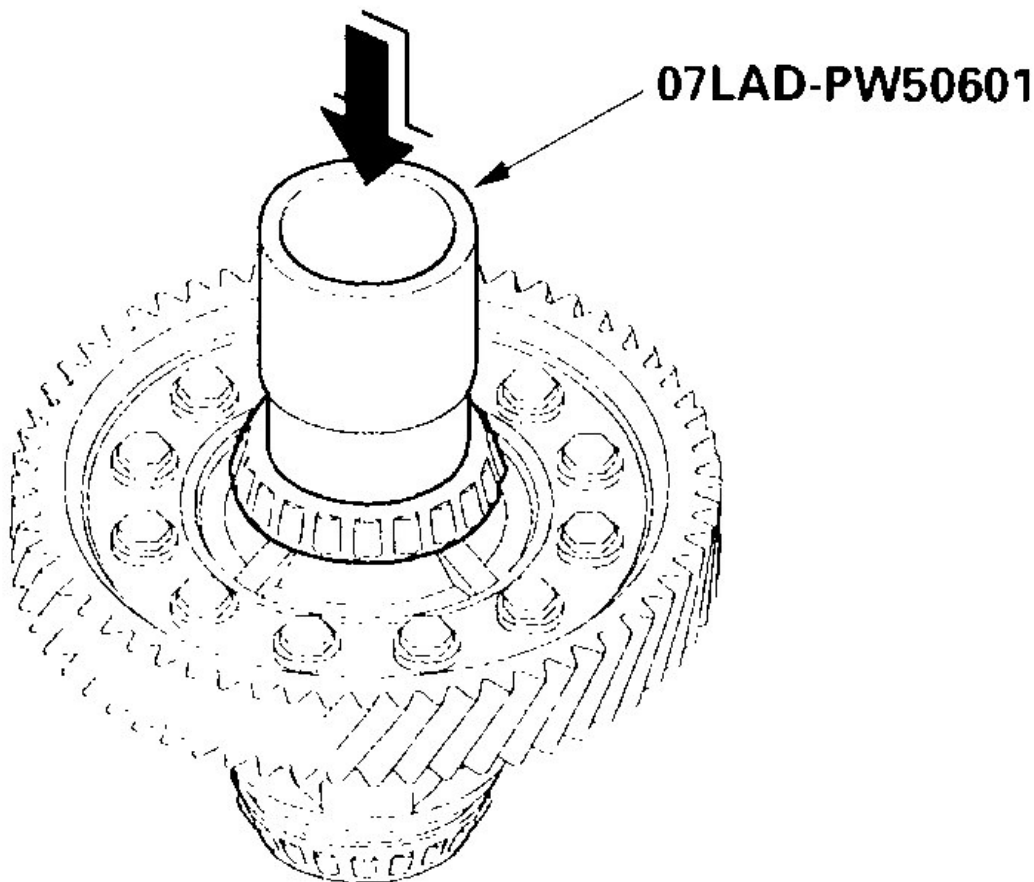
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new carrier bearings with the special tool and a press.

NOTE:

- Press the bearing on until it bottoms.

- Use the small end of the special tool to install the bearing.
- Press the bearing on securely so there is no clearance between the bearing and the differential carrier.



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Fig. 148: Installing Carrier Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required:

- Driver 07749-0010000.
- Seal driver attachment 07GAD-PG40101 or 07GAD-PG40100.
- Oil seal driver attachment 07JAD-PH80101.

1. Remove the differential assembly.
2. Remove the oil seal (A) from the transmission housing (B).

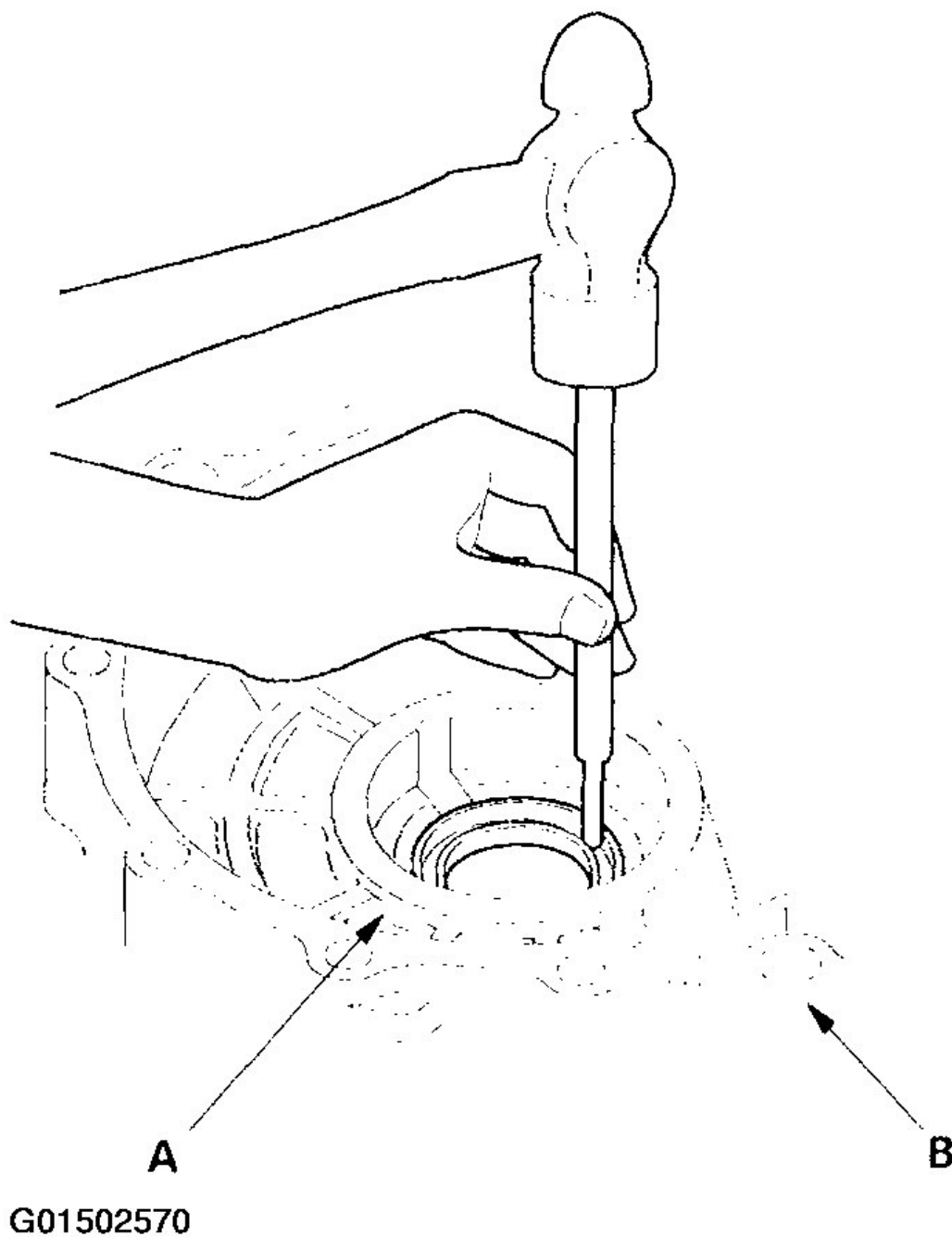
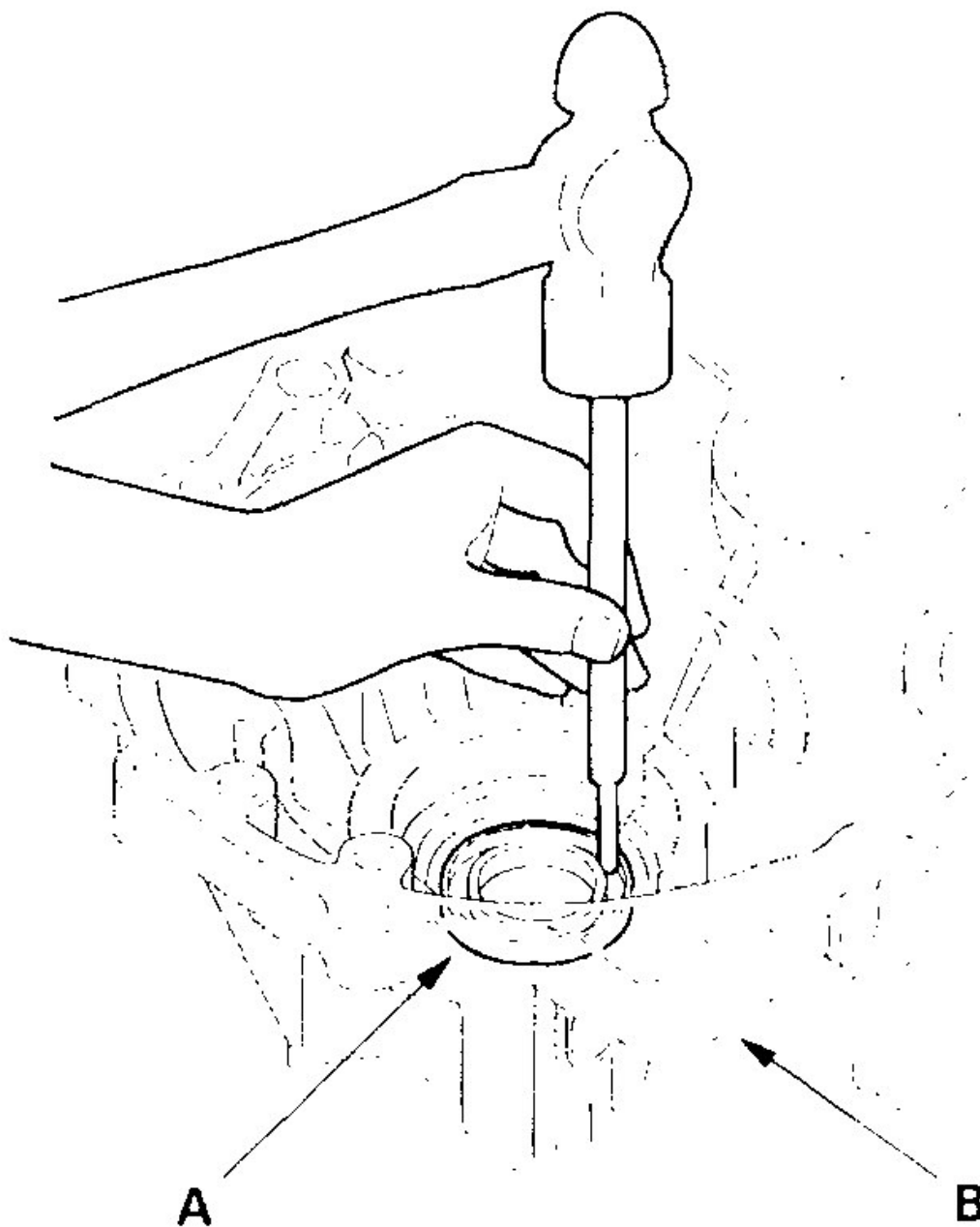


Fig. 149: Removing Oil Seal From Transmission Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

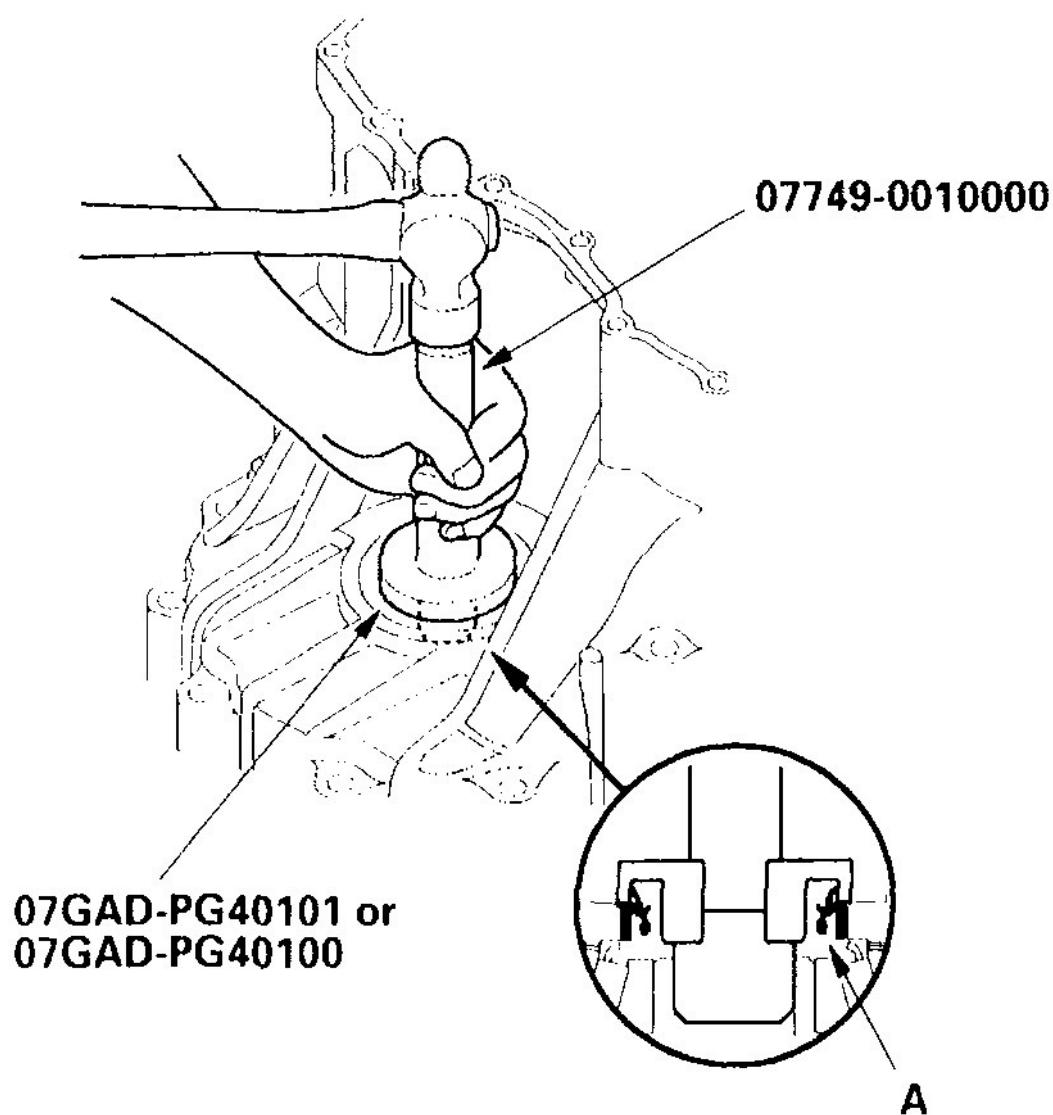
3. Remove the oil seal (A) from the torque converter housing (B).



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Fig. 150: Removing Oil Seal From Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

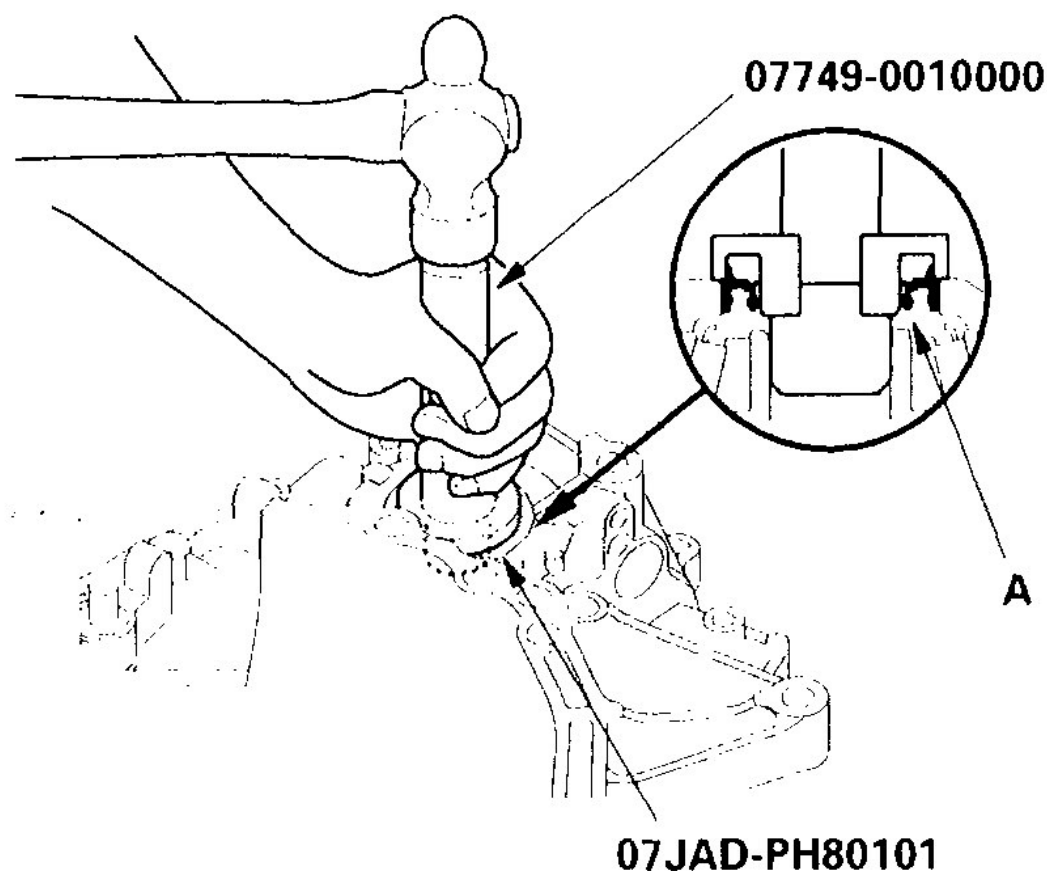
4. Install the oil seal (A) in the transmission housing with the special tools.



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Fig. 151: Installing Oil Seal In Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the oil seal (A) in the torque converter housing with the special tools.



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Fig. 152: Installing Oil Seal In Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARRIER BEARING OUTER RACE REPLACEMENT

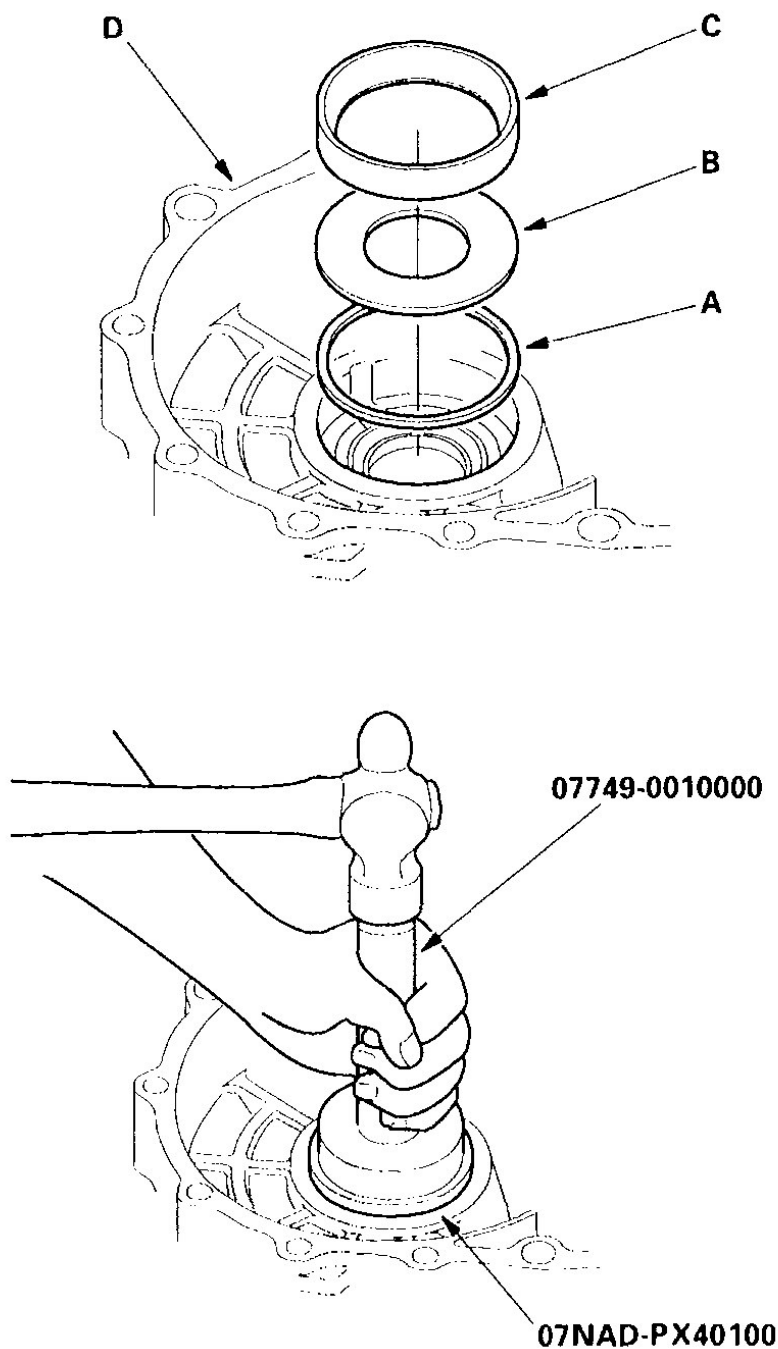
Special Tools Required:

- Driver 07749-0010000.
- Attachment, 78 x 80 mm 07NAD-PX40100.

NOTE:

- Replace the bearing with a new one whenever the outer race is replaced.
- Do not use shim(s) on the torque converter housing side.
- Adjust preload after replacing the bearing and outer race.
- Coat all parts with ATF during installation.

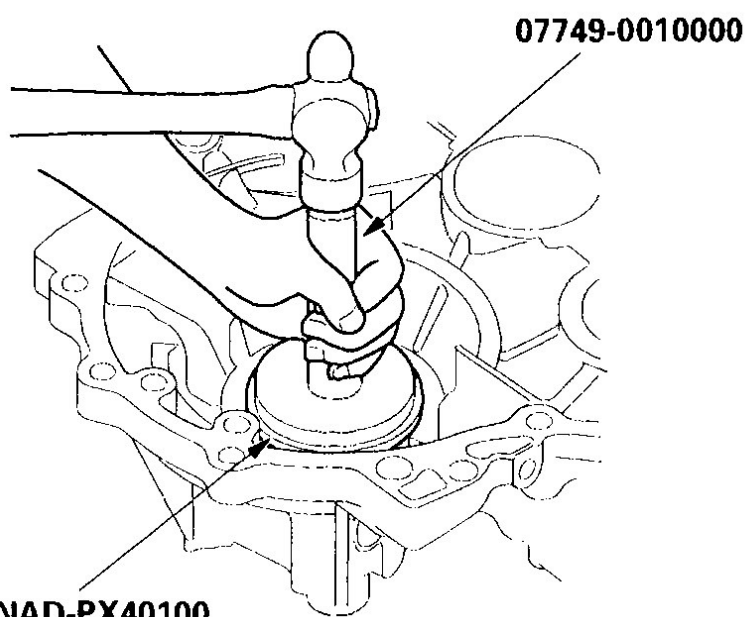
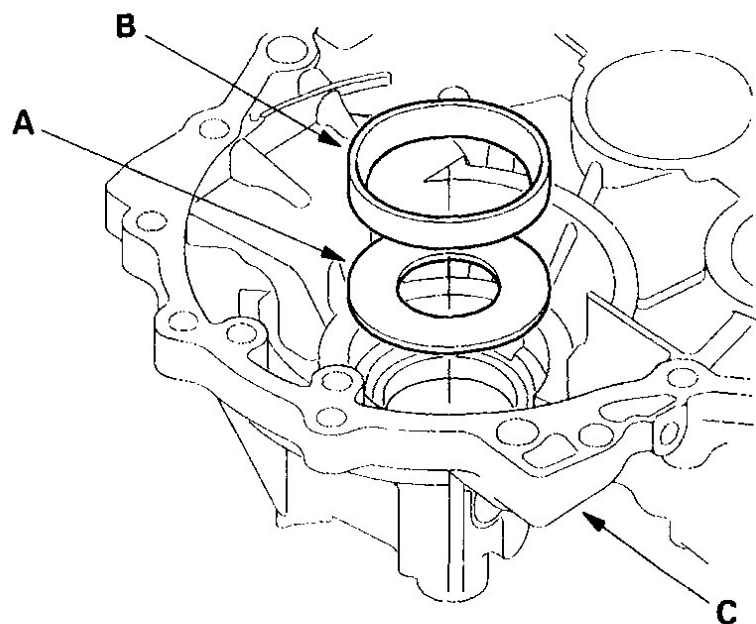
1. Remove the bearing outer race from the transmission housing by heating the housing to about 212°F (100°C) with a heat gun. Do not heat the housing to more than 212°F (100°C).
2. Remove the bearing outer race from the torque converter housing.
3. Install the thrust shim (A), thrust washer (B), and outer race (C) in the transmission housing (D) with the special tools.



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Fig. 153: Installing Thrust Shim, Thrust Washer & Outer Race In Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the thrust washer (A) and outer race (B) in the torque converter housing (C), and use the special tools to make sure the outer race bottoms out in the housing.



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Fig. 154: Installing Thrust Washer & Outer Race In Torque Converter Housing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARRIER BEARING PRELOAD INSPECTION

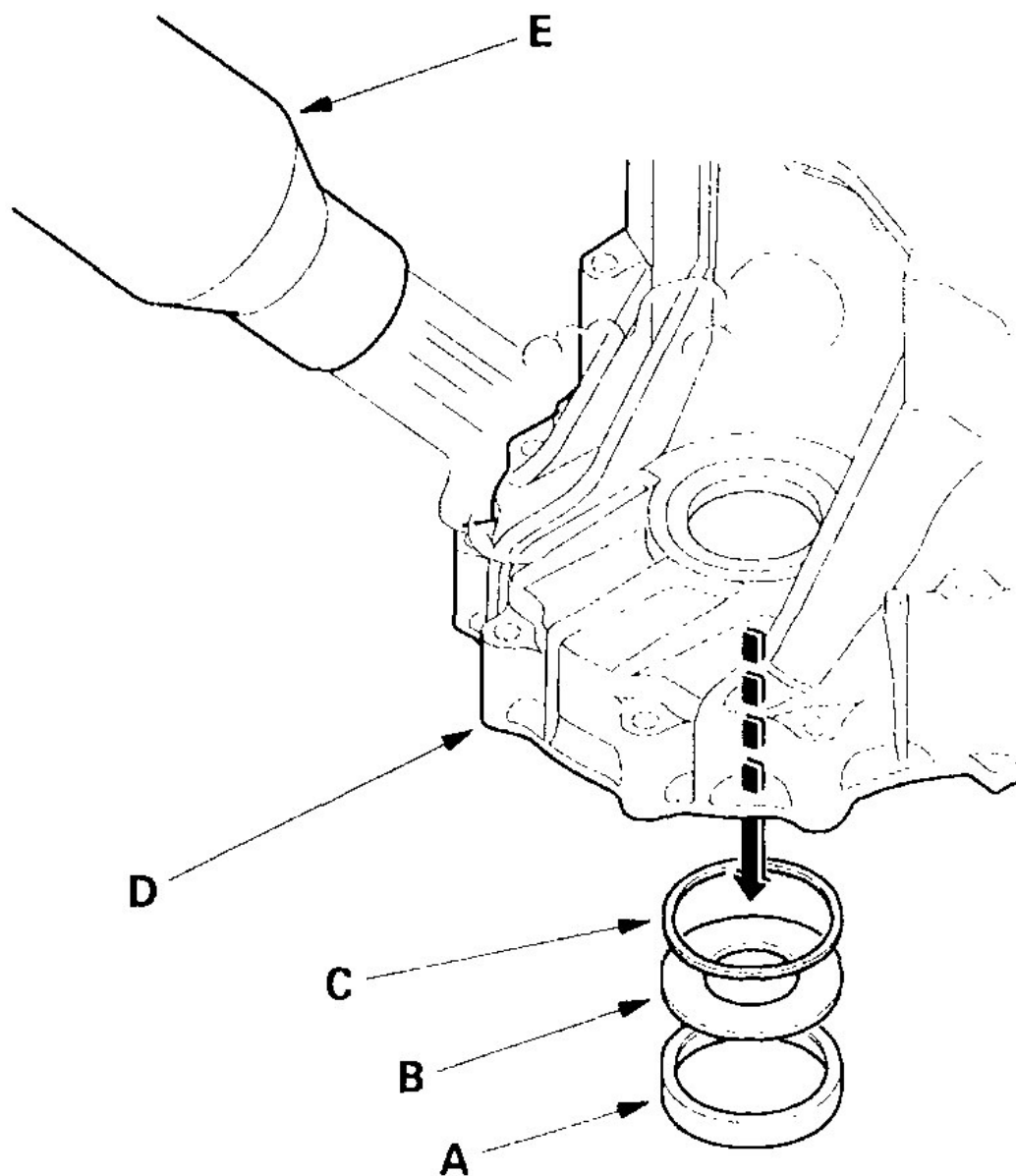
Special Tools Required:

- Driver 07749-0010000.
- Attachment, 78 x 80 mm 07NAD-PX40100.
- Preload inspection tool 07YAJ-S3V0100.

NOTE: **If the transmission housing, torque converter housing, differential carrier, tapered roller bearing, outer race, or thrust shim were replaced, the bearing preload must be adjusted.**

1. Remove the bearing outer race (A), thrust washer (B), and thrust shim (C) from the transmission housing (D) by heating the housing to about 212°F (100°C) with a heat gun (E). Do not heat the housing to more than of 212°F (100°C).

NOTE: **Let the transmission housing cool to room temperature before adjusting the bearing preload.**



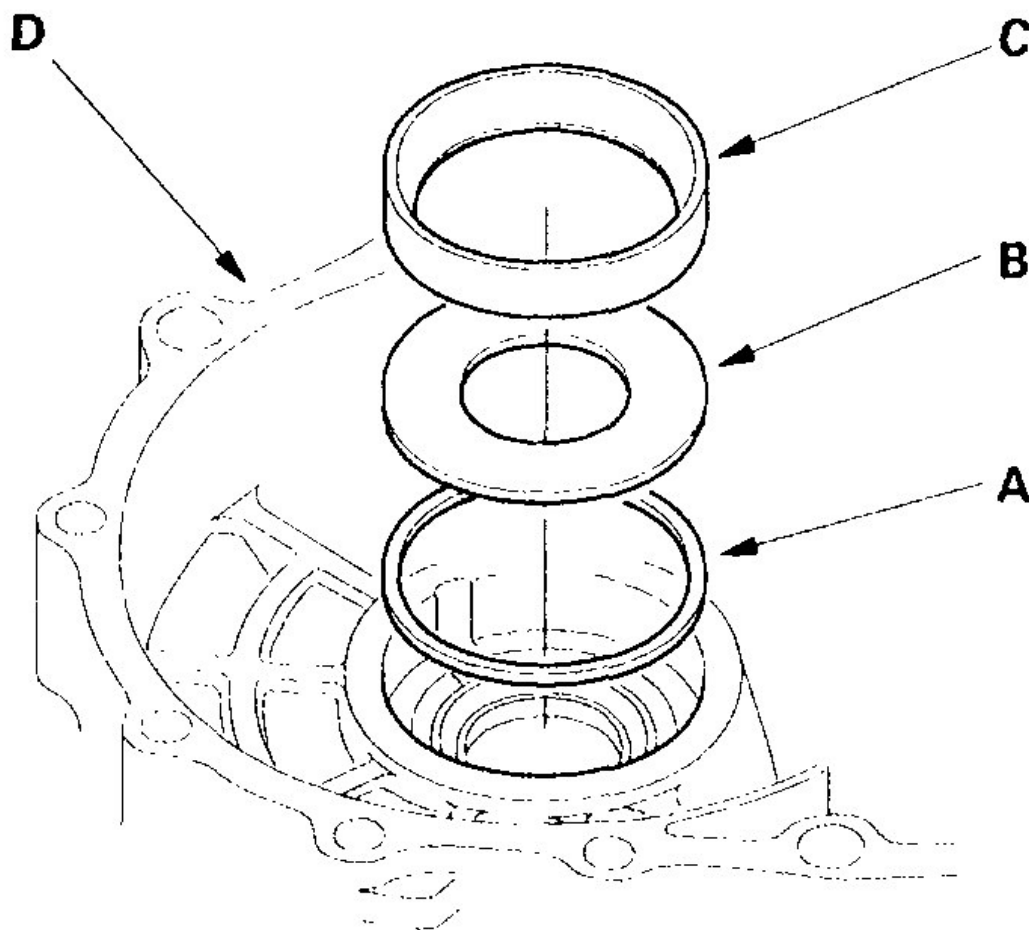
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Fig. 155: Removing Bearing Outer Race, Thrust Washer & Thrust Shim From Transmission Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Replace the tapered roller bearing when the outer race is to be replaced.
3. Do not use a shim on the torque converter housing side.
4. Install the 81 mm thrust shim (A), thrust washer (B), and bearing outer race (C) in the transmission

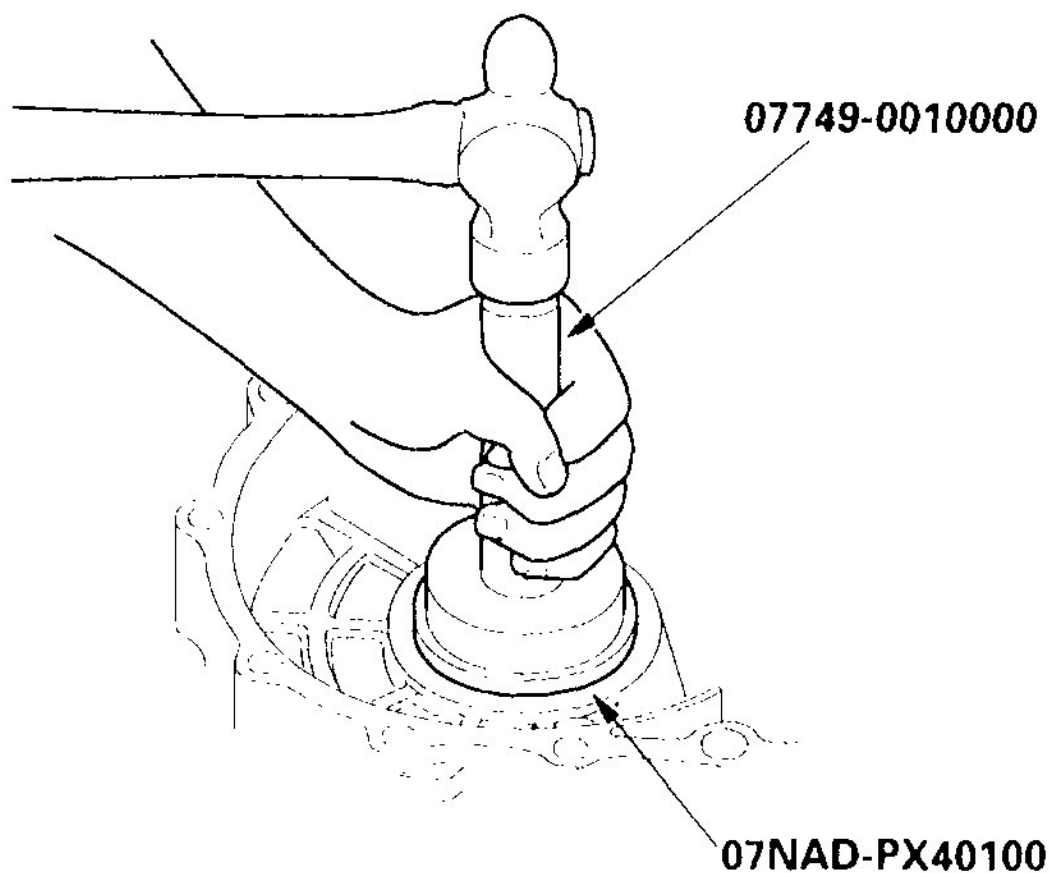
housing. If you replace the 81 mm thrust shim with a new one, use the same thickness shim as the old one.



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Fig. 156: Installing Thrust Shim, Thrust Washer & Bearing Outer Race In Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Drive in the outer race with the special tools.

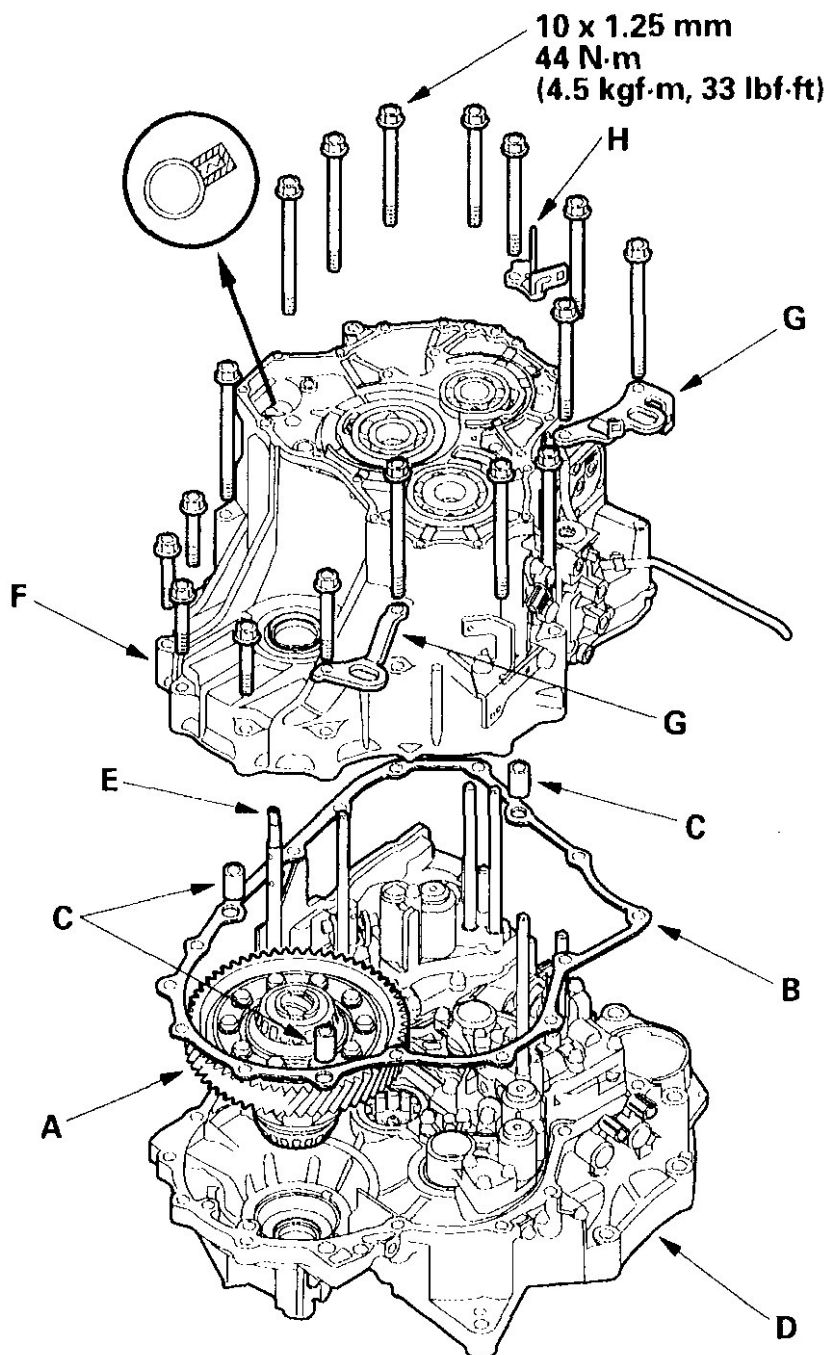


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Fig. 157: Installing Outer Race

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check that there is no clearance between the thrust washer, outer race, shim, and transmission housing.
7. Install the differential assembly (A), gasket (B), and dowel pins (C) on the torque converter housing (D). Align the spring pin on the control shaft (E) with the transmission housing groove.



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Fig. 158: Installing Differential Assembly On Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the transmission housing (F) with the transmission hangers (G) and harness clamp bracket (H), then tighten the bolts.

9. Rotate the differential assembly in both directions to seat the bearings.
10. Measure the starting torque of the differential assembly with the special tools, a torque wrench (A) and a socket (B). Measure the starting torque at normal room temperature in both directions.

Standard:

New bearing - 2.7-3.9 N.m (28-40 kgf.Cm, 24-35 lbf.in.).

Reused bearings - 2.5-3.6 N.m (25-37 kgf.Cm, 22-32 lbf.in.).

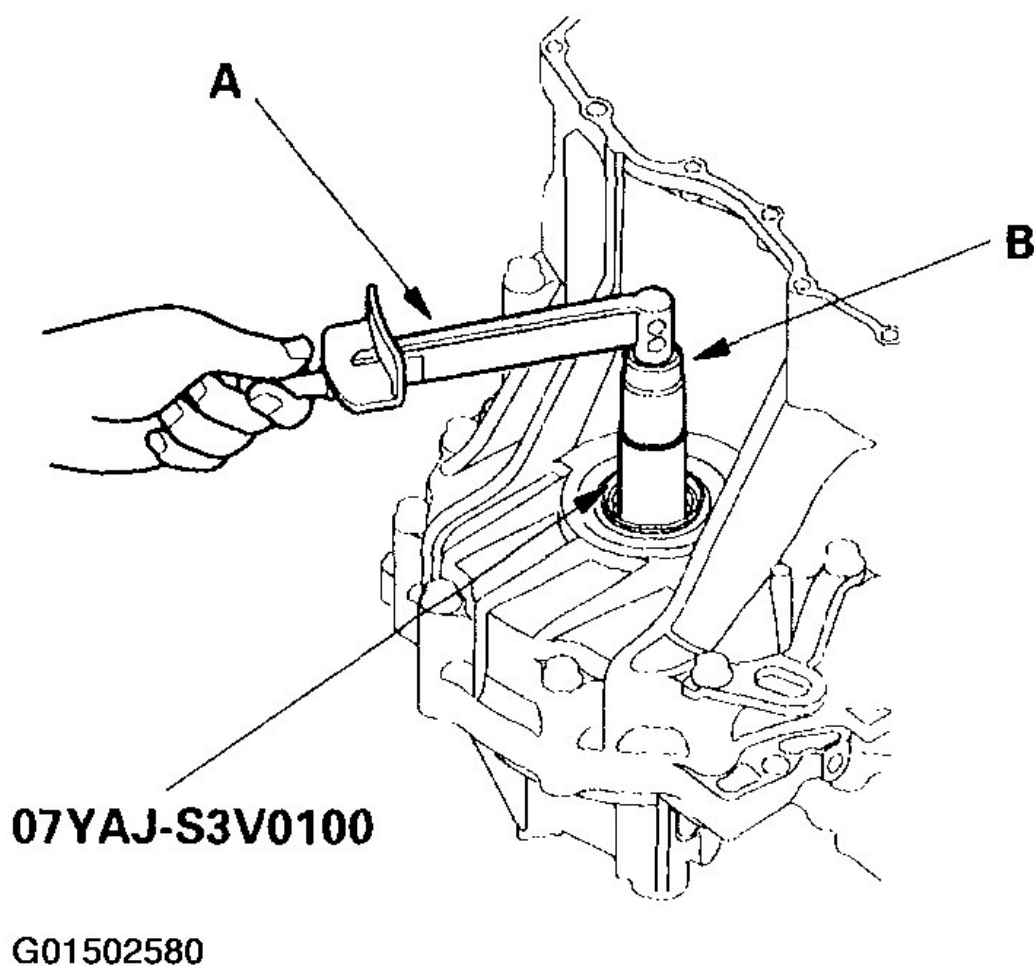


Fig. 159: Measuring Differential Assembly Starting Torque
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If the measurement is out of standard, remove the thrust shim and select the thrust shim from table. Install

the new thrust shim and recheck. To increase the starting torque, increase the thickness of the thrust shim. To decrease the starting torque, decrease the thickness of the thrust shim. Changing the shim to the next size will increase or decrease starting torque about 0.3-0.4 N.m (3-4 kgf.Cm, 2-3 lbf.in.).

No.	Part Number	Thickness
A	41438-P7T-700	2.05 mm (0.081 in.)
AA	41438-PGH-000	2.075 mm (0.082 in.)
B	41439-P7T-700	2.10 mm (0.083 in.)
BB	41439-PGH-000	2.125 mm (0.084 in.)
C	41440-P7T-700	2.15 mm (0.085 in.)
CC	41440-PGH-000	2.175 mm (0.086 in.)
D	41441-P7T-000	2.20 mm (0.087 in.)
DD	41441-PGH-000	2.225 mm (0.088 in.)
E	41442-P7T-000	2.25 mm (0.089 in.)
EE	41442-PGH-000	2.275 mm (0.090 in.)
F	41443-P7T-000	2.30 mm (0.091 in.)
FF	41443-PGH-000	2.325 mm (0.092 in.)
G	41444-P7T-000	2.35 mm (0.093 in.)
GG	41444-PGH-000	2.375 mm (0.094 in.)
H	41445-P7T-000	2.40 mm (0.094 in.)
HH	41445-PGH-000	2.425 mm (0.095 in.)
I	41446-P7T-000	2.45 mm (0.096 in.)
II	41446-PGH-000	2.475 mm (0.097 in.)
J	41447-P7T-000	2.50 mm (0.098 in.)
JJ	41447-PGH-000	2.525 mm (0.099 in.)
K	41448-P7T-000	2.55 mm (0.100 in.)
KK	41448-PGH-000	2.575 mm (0.101 in.)
L	41449-P7T-000	2.60 mm (0.102 in.)
LL	41449-PGH-000	2.625 mm (0.103 in.)
M	41450-P7T-000	2.65 mm (0.104 in.)
MM	41450-PGH-000	2.675 mm (0.105 in.)
N	41451-P7T-000	2.70 mm (0.106 in.)
NN	41451-PGH-000	2.725 mm (0.107 in.)
O	41452-P7T-000	2.75 mm (0.108 in.)
OO	41452-PGH-000	2.775 mm (0.109 in.)
P	41453-P7T-000	2.80 mm (0.110 in.)
PP	41453-PGH-000	2.825 mm (0.111 in.)
Q	41454-P7T-000	2.85 mm (0.112 in.)
QQ	41454-PGH-000	2.875 mm (0.113 in.)
R	41455-P7T-000	2.90 mm (0.114 in.)
RR	41455-PGH-000	2.925 mm (0.115 in.)
S	41456-P7T-000	2.95 mm (0.116 in.)
SS	41456-PGH-000	2.975 mm (0.117 in.)
T	41457-P7T-000	3.00 mm (0.118 in.)
TT	41457-PGH-000	3.025 mm (0.119 in.)
U	41458-P7T-000	3.05 mm (0.120 in.)

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Fig. 160: Thrust Shim Selection Chart

2002 Honda Odyssey EX

2002-2004 AUTOMATIC TRANSMISSIONS Overhaul - BYBA 5-Speed

Courtesy of AMERICAN HONDA MOTOR CO., INC.