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SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
* ①	07GAJ-PG20110	Mainshaft Holder	1
* 2	07GAJ-PG20120	Base Collar	1
* 3	07GAJ-PG20130	Mainshaft Base	1
4	07JAD-PH80200	Pilot, 26 x 30 mm	1
(5)	07JAD-PN00100	Oil Seal Driver Attachment	1
6	07JAF-PM7012A	Clutch Alignment Shaft	1
(i)	07LAB-PV00100 or 07924-PD20003	Ring Gear Holder	1
* * (8)	07736-A01000B	Adjustable Bearing Puller, 20—40 mm	1
9	07746-0010100	Attachment, 32 x 35 mm	1
10	07746-0010200	Attachment, 37 x 40 mm	1
(1)	07746-0010400	Attachment, 52 x 55 mm	1
(12)	07746-0030100	Driver, 40 mm I.D.	1
(13)	07746-0030200	Attachment, 25 mm I.D.	1
14	07746-0030300	Attachment, 30 mm I.D.	1
(15)	07746-0030400	Attachment, 35 mm I.D.	1
(16)	07749-0010000	Driver	1
17	07936-3710100	Remover Handle	1

* Part of Mainshaft Inspection Tool Set, 07GAJ-PG2010A.

* * Must be used with a commercially available 3/8"-16 Slide Hammer.





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Fig. 1: Identifying Special Tools Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX



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Fig. 2: Identifying Clutch Components Location Courtesy of AMERICAN HONDA MOTOR CO., INC.

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CLUTCH PEDAL AND CLUTCH INTERLOCK SWITCH ADJUSTMENT

NOTE:

- Remove the driver's floor mat before adjusting the clutch pedal.
 - The clutch is self-adjusting to compensate for wear.
 - If there is no clearance between the master cylinder piston and pushrod, the release bearing is held against the diaphragm spring, which can result in clutch slippage or other clutch problems.
- 1. Loosen the locknut (A), and back off the adjusting bolt (B) until it no longer touches the clutch pedal (C).

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Fig. 3: Adjusting Clutch Pedal And Clutch Interlock Switch With Specified Torques Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosen the clutch pushrod locknut (D), and turn the pushrod (E) in or out to get the specified height (F), stroke (G), and free play (H).

Clutch Pedal Stroke: 130-140 mm (5.1-5.5 in.) Clutch Pedal Free

Play: 10-18 mm (0.39-0.71 in.)

Clutch Pedal Height: 192 mm (7.56 in.)

- 3. Tighten the clutch pushrod locknut.
- 4. Turn in the adjusting bolt until it contacts the clutch pedal.
- 5. Turn in the adjusting bolt an additional 3/4 to 1 turn.
- 6. Tighten the locknut.
- 7. Loosen the clutch interlock switch locknut (I) and the clutch interlock switch (J).
- 8. Press the clutch pedal to the floor.
- 9. Release the clutch pedal 15-20 mm (0.59-0.79 in.) from the fully pressed position, and hold it there. Adjust the position of the clutch interlock switch so the engine will start with the clutch pedal in this position.
- 10. Tighten the clutch interlock switch locknut.

CLUTCH MASTER CYLINDER REPLACEMENT

- NOTE:
- Use fender covers to avoid damaging painted surfaces
- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- 1. Remove the left front inner fender (see **FRONT INNER FENDER <u>REPLACEMENT</u>).**
- 2. Remove the brake fluid from the clutch master cylinder reservoir with a syringe.
- 3. Disconnect the reservoir hose (A) and clutch line (B) from the clutch master cylinder. Plug the end of the clutch line and reservoir hose with a shop towel to prevent brake fluid from coming out.

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Fig. 4: Disconnecting Reservoir Hose And Clutch Line From Clutch Master Cylinder With Specified Torques Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pry out the lock pin (A), and pull the pedal pin (B) out of the yoke. Remove the nuts (C).

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Fig. 5: Removing Lock Pin, Pedal Pin And Nuts Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the clutch master cylinder (A).

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Fig. 6: Removing Clutch Master Cylinder Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 6. Install the clutch master cylinder in the reverse order of removal. Tighten the master cylinder mounting nuts to 13 N.m (1.3 kgf.m, 9.4 lbf.ft).
- 7. Bleed the clutch hydraulic system (see step 9).

NOTE: Reservoir filling is covered in the bleeding procedure.

8. Refill the brake fluid in the reservoir at the MAX (upper) level line (see step 10).

SLAVE CYLINDER REPLACEMENT

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- NOTE: Use fender covers to avoid damaging painted surfaces
 Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
 - 1. Remove the engine cover and air cleaner housing (see **ENGINE <u>REMOVAL**</u>).
- 2. Remove the throttle drum cover (A).



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Fig. 7: Removing Throttle Drum Cover Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the clutch line (A) from the slave cylinder (B). Plug the end of the

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clutch line with a shop towel to prevent brake fluid from coming out.



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Fig. 8: Disconnecting Clutch Line From Slave Cylinder Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 4. Remove the two bolts (C) and the slave cylinder.
- 5. Pull back the boot (A), and apply brake assembly lube or equivalent rubber grease to the boot and slave cylinder rod (B). Reinstall the boot.

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(Brake Assembly Lube)

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Fig. 9: Reinstalling Boot And Applying Brake Assembly Lube Or Grease To Boot Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 6. Apply super high temp urea grease (P/N 08798-9002) to the tip of the slave cylinder rod.
- 7. Install the slave cylinder (A), then connect the clutch line (B).

NOTE: Make sure the boot is installed on the slave cylinder.

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Fig. 10: Installing Slave Cylinder And Torque Specifications Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the throttle drum cover (A).

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Fig. 11: Installing Throttle Drum Cover And Torque Specifications Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Bleed the clutch hydraulic system.

NOTE: Be careful not to damage the slave cylinder by overtightening the bleeder screw.

- Attach a hose to the bleeder screw (A), and suspend the hose in a container of brake fluid.
- Make sure there is an adequate supply of fluid at the clutch master cylinder, then slowly pump the clutch pedal until no more bubbles appear at the bleeder hose.
- Tighten the bleeder screw to 8 N.m (0.8 kgf.m, 5.8 lbf.ft); do not

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overtighten it.

- Refill the clutch master cylinder with fluid when done.
- Use only Honda DOT 3 Brake Fluid from an unopened container.
- Check clutch operation, and check for leaking fluid.



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Fig. 12: Identifying Bleeder Screw Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Make sure the fluid level in the reservoir is at the MAX (upper) level line (A).

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Fig. 13: Identifying Reservoir Max (Upper) Level Line Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH REPLACEMENT

Special Tools Required

- Clutch alignment shaft 07JAF-PM7012A
- Remover handle 07936-3710100
- Ring gear holder 07LAB-PV00100 or 07924-PD20003
- Driver 07749-0010000

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• Attachment, 32 x 35 mm 07746-0010100

PRESSURE PLATE AND CLUTCH DISC REMOVAL

1. Check the height of the diaphragm spring fingers using the dial indicator (A). If the height is more than the service limit, replace the pressure plate.

Standard (New): 0.6 mm (0.024 in.) max.

Service Limit: 0.8 mm (0.03 in.)



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Fig. 14: Checking Height Of Diaphragm Spring Fingers Using Dial Indicator Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the special tools.



Fig. 15: Installing Special Tools Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. To prevent warping, unscrew the pressure plate mounting bolts (A) in a crisscross pattern in several steps, then remove the pressure plate (B).
- 4. Inspect the surface of the pressure plate (A) for wear, cracks, and burning.

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Fig. 16: Identifying Pressure Plate And Diaphragm Spring Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 5. Inspect the fingers of the diaphragm spring (B) for wear at the release bearing contact area.
- 6. Inspect for warpage using a straight edge (A) and a feeler gauge (B). Measure across the pressure plate (C). If the warpage is more than the service limit, replace the pressure plate.

Standard (New): 0.03 mm (0.001 in.) max.

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Service Limit: 0.15 mm (0.006 in.)



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Fig. 17: Inspecting For Warpage Using Straight Edge And Feeler Gauge Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the clutch disc (A) and special tools (B).

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Fig. 18: Removing Clutch Disc And Special Tools Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 8. Inspect the lining of the clutch disc for signs of slippage or oil. If the clutch disc looks burnt or is soaked with oil, replace it. Find the source of the oil leak if the clutch disc is soaked.
- 9. Measure the clutch disc thickness. If the thickness is less than the service limit, replace the clutch disc.

Standard (New): 8.3-9.0 mm (0.33-0.35 in.) max.

Service Limit: 6.0 mm (0.24 in.)

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Fig. 19: Measuring Clutch Disc Thickness Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Measure the rivet depth from the clutch disc lining surface (A) to the rivets (B) on both sides. If the rivet depth is less than the service limit, replace the clutch disc.

Standard (New): 1.2-1.7 mm (0.0-0.07 in.) max.

Service Limit: 0.2 mm (0.008 in.)

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Fig. 20: Measuring Rivet Depth From Clutch Disc Lining Surface To <u>**Rivets</u></u> Courtesy of AMERICAN HONDA MOTOR CO., INC.**</u>

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FLYWHEEL INSPECTION

- 1. Inspect the ring gear teeth for wear and damage.
- 2. Inspect the clutch disc mating surface on the flywheel for wear, cracks, and burning.
- 3. Measure the flywheel (A) runout using a dial indicator (B) through at least two full turns with the engine installed. Push against the flywheel each time you turn it to take up the crankshaft thrust washer clearance. If the runout is more than the service limit, replace the flywheel, and recheck the runout. Resurfacing the flywheel is not recommended.

Standard (New): 0.05 mm (0.002 in.) max.

Service Limit: 0.15 mm (0.006 in.)

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Fig. 21: Measuring Flywheel Runout Using Dial Indicator Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the inner race of the ball bearing (A) with your finger. The ball bearing should turn smoothly and quietly. Check that the ball bearing outer race fits tightly in the flywheel. If the race does not turn smoothly, quietly, or fit tight in the flywheel, replace the ball bearing.

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Fig. 22: Turning Inner Race Of Ball Bearing Using Finger Courtesy of AMERICAN HONDA MOTOR CO., INC.

FLYWHEEL REPLACEMENT

1. Install the special tool (A).

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Fig. 23: Installing Special Tool Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 2. Remove the flywheel mounting bolts in a crisscross pattern in several steps, then remove the flywheel.
- 3. Remove the sensor disc (A).

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Fig. 24: Removing Sensor Disc Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the ball bearing (A) from the flywheel (B).



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Fig. 25: Removing Ball Bearing From Flywheel Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Drive the new ball bearing into the flywheel using the special tools as shown. Apply a light coat of oil to the bearing surface.

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Fig. 26: Driving New Ball Bearing Into Flywheel Using Special Tools Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the sensor disc (A).

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Fig. 27: Installing Sensor Disc And Torque Specifications Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Align the hole (A) in the flywheel with the crankshaft dowel pin (B), and install the flywheel (C). Install the mounting bolts, finger-tight.

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Fig. 28: Installing Flywheel Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the special tool (A), then torque the flywheel mounting bolts in a crisscross pattern in several steps.

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44 N·m (4.5 kgf·m, 33 lbf·ft)

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Fig. 29: Installing Special Tool And Torque Specifications Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH DISC AND PRESSURE PLATE INSTALLATION

- 1. Temporarily install the clutch disc onto the splines of the transmission mainshaft. Make sure the clutch disc slides freely on the mainshaft.
- 2. Install the special tool (A).

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Fig. 30: Installing Clutch Disc Using Special Tools Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. Apply super high temp urea grease (P/N 08798-9002) to the splines (B) of the clutch disc (C), then install the clutch disc using the special tools.
- 4. Install the pressure plate (A) and the mounting bolts (B), finger-tight.

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Fig. 31: Installing Pressure Plate And Mounting Bolts Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Torque the mounting bolts in a crisscross pattern. Tighten the bolts in several steps to prevent warping the diaphragm spring.

Pressure Plate Mounting Bolt Torque:

25 N.m (2.6 kgf.m, 19 lbf.ft)

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Fig. 32: Tightening Pressure Plate Mounting Bolts Courtesy of AMERICAN HONDA MOTOR CO., INC.

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- 6. Remove the special tools.
- 7. Make sure the diaphragm spring fingers are all the same height.

RELEASE BEARING REPLACEMENT

1. Remove the release fork boot (A) from the clutch housing (B).



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Fig. 33: Removing Release Fork Boot From Clutch Housing Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 2. Remove the release fork (C) from the clutch housing by squeezing the release fork set spring (D) with pliers. Remove the release bearing (E).
- 3. Check the play of the release bearing by spinning it with your hand. If there is excessive play, replace the release bearing.

NOTE: The release bearing is packed with grease. Do not wash it in solvent.

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Fig. 34: Checking Play Of Release Bearing Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply super high temp urea grease (P/N08798-9002) to the release fork (A), the release fork bolt (B), the release bearing (C), and the release bearing guide (D) in the shaded areas.

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Fig. 35: Installing Release Bearing Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 5. With the release fork slid between the release bearing pawls, install the release bearing on the mainshaft while inserting the release fork through the hole in the clutch housing.
- 6. Align the detent of the release fork with the release fork bolt, then press the release fork over the release fork bolt squarely.
- 7. Install the release fork boot (E). Make sure the boot seals around the release fork and the clutch housing.
- 8. Move the release fork (A) right and left to make sure it fits properly against the release bearing (B) and the release bearing slides smoothly.

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Fig. 36: Moving Release Fork Courtesy of AMERICAN HONDA MOTOR CO., INC.