

2007 Honda Element EX

2007-08 TRANSMISSION Clutch - Element

2007-08 TRANSMISSION

Clutch - Element

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07JAF-PM7011A	Clutch Alignment Disc	1
②	07LAB-PV00100 or 07924-PD20003	Ring Gear Holder	1
③	07ZAF-PR8A100	Clutch Alignment Shaft	1
④	07741-0010201	Sliding Hammer Weight	1
⑤	07746-0010800	Attachment, 22 x 24 mm	1
⑥	07749-0010000	Driver	1
⑦	07936-3710100	Remover Handle	1
⑧	07936-3710300	Bearing Remover Shaft Set, 17 mm	1

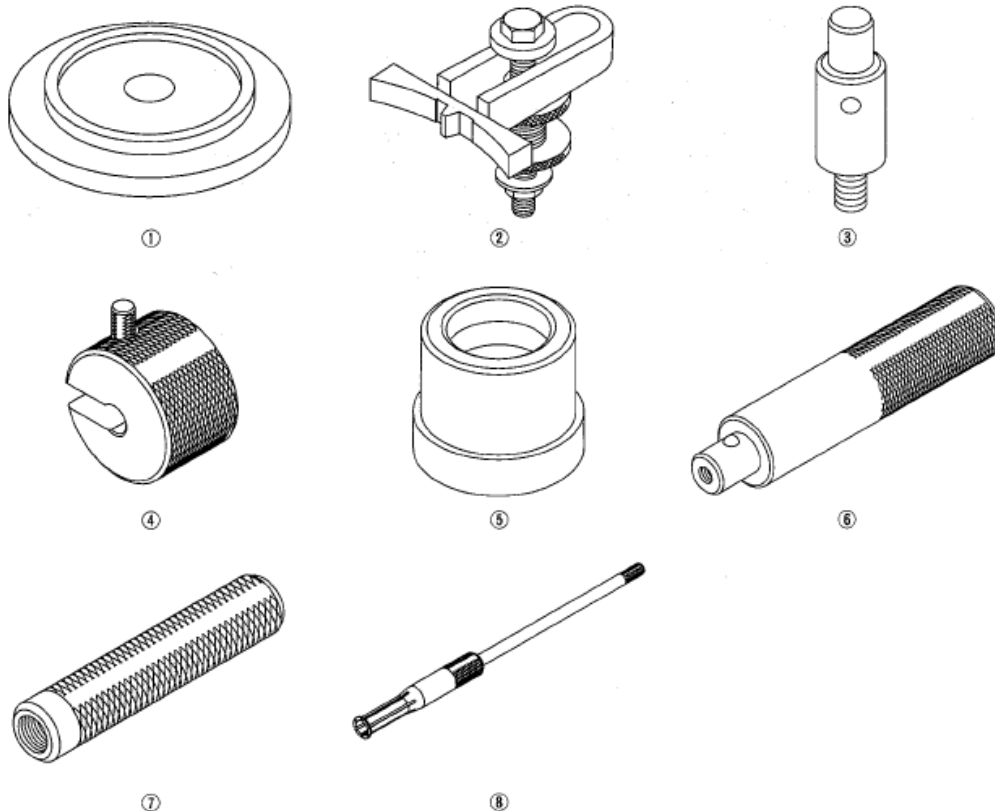


Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

2007 Honda Element EX

2007-08 TRANSMISSION Clutch - Element

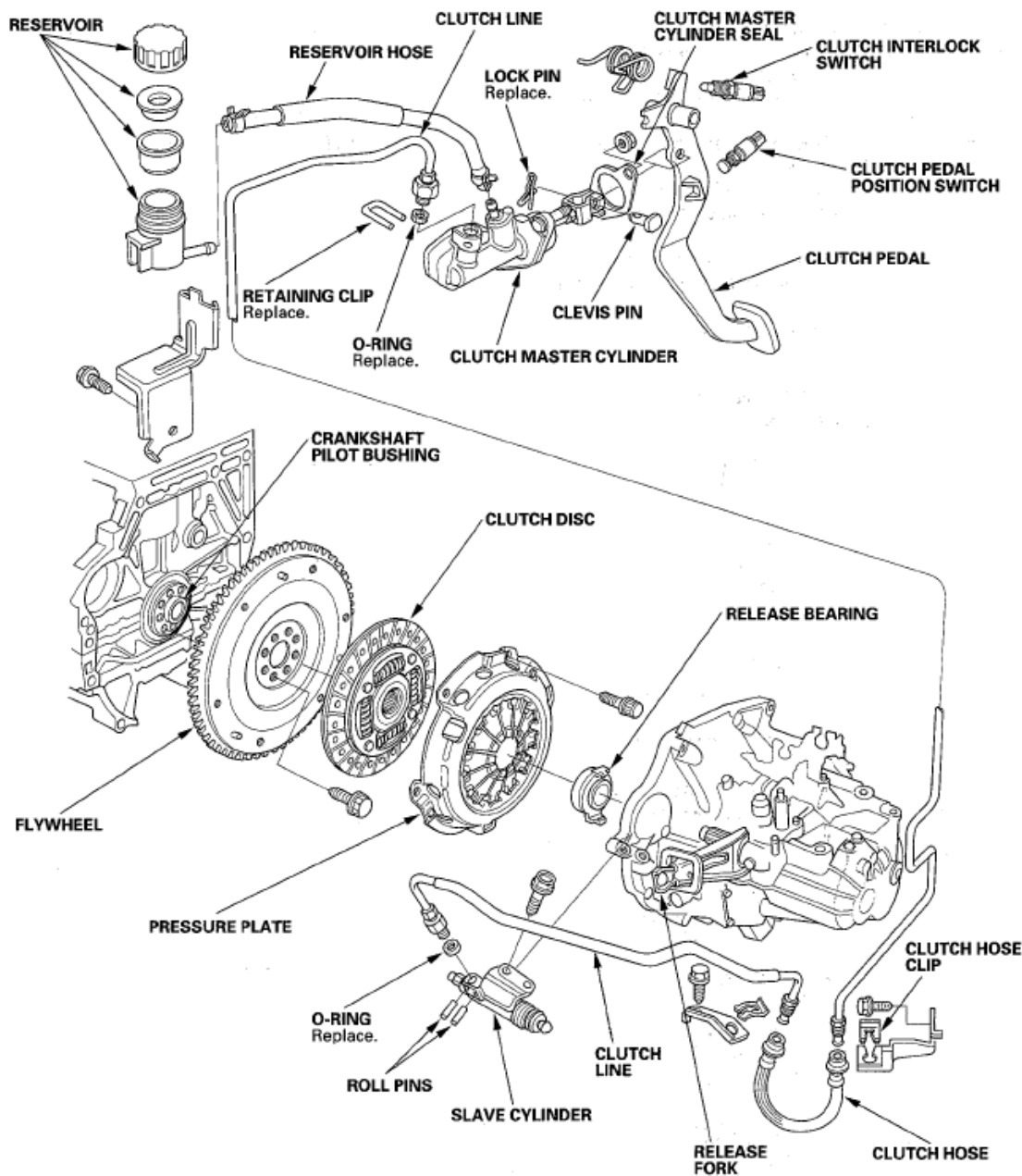


Fig. 2: Identifying Clutch Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH HYDRAULIC SYSTEM BLEEDING

NOTE:

- Do not reuse the drained fluid. Always use Honda DOT 3 Brake Fluid from an unopened container. Using a non-Honda brake fluid can cause corrosion and shorten the life of the system.
- Do not mix different brands of brake fluid; they may not be compatible.
- Make sure the brake fluid is not contaminated with dirt or other foreign

matter.

- 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.
- If may be necessary to limit the movement of the release fork with a block of wood to remove all the air from the system.
- Use fender covers to avoid damaging painted surfaces.

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

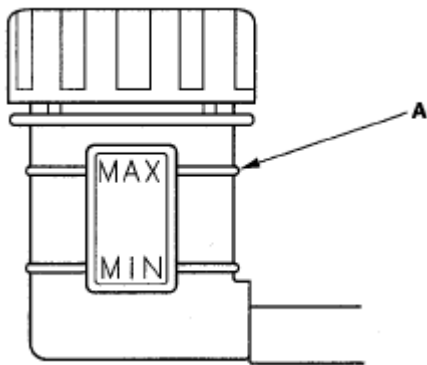


Fig. 3: Identifying Brake Fluid Level In Reservoir MAX (Upper) Level Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Attach the one end of the clear tube to the bleeder screw (A), and the other end to the container of brake fluid. Loosen the bleeder screw to allow air to escape from the system.

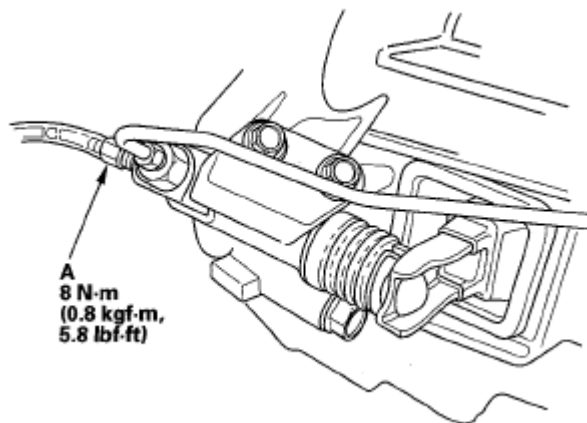


Fig. 4: Identifying Bleeder Screw With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure there is an adequate supply of fluid in the reservoir, then slowly pump the clutch pedal until no more bubbles appear at the clear tube.
4. Tighten the bleeder screw securely.

5. Refill the brake fluid in the reservoir to the MAX (upper) level line.

CLUTCH PEDAL, CLUTCH PEDAL POSITION SWITCH, AND CLUTCH INTERLOCK SWITCH ADJUSTMENT

NOTE:

- Check the clutch pedal position switch (see CLUTCH PEDAL POSITION SWITCH TEST).
- Check the clutch interlock switch (see CLUTCH INTERLOCK SWITCH TEST).
- Remove the driver's side 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 will be held against the diaphragm spring, which can result in clutch slippage or other clutch problems.

1. Lift up the carpet (A). At the insulator cutout, measure pedal height from the right side of the pedal pad (B).

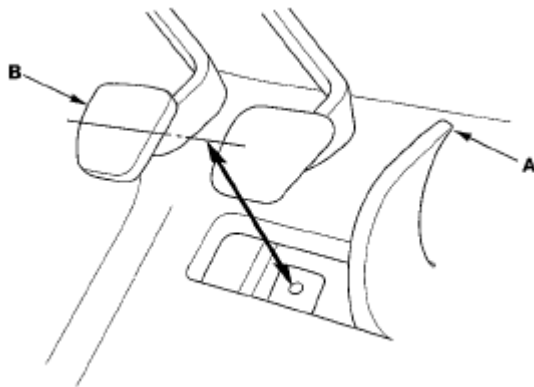


Fig. 5: Identifying Carpet And Pedal Pad

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosen the clutch pedal position switch locknut (A), and back off the clutch pedal position switch (B) until it no longer touches the clutch pedal (C).

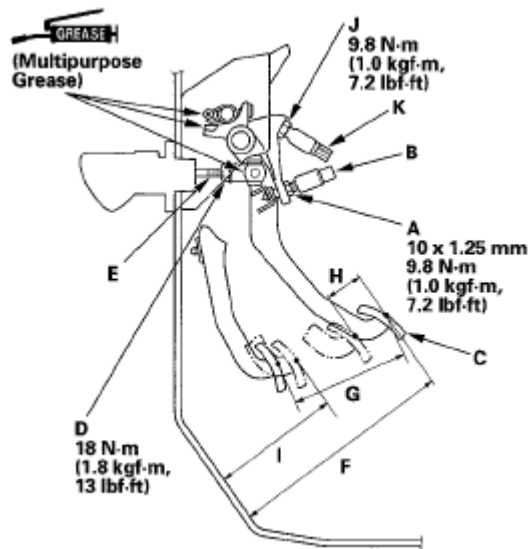


Fig. 6: Identifying Clutch Pedal Switch Locknut With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

Clutch Pedal Stroke: 125-135 mm (4.92-5.31 in.)

Clutch Pedal Free Play: 6-17 mm (0.24-0.67 in.)

Clutch Pedal Height: 200 mm (7.87 in.)

Clutch Pedal Disengagement Height: 112 mm (4.41 in.)

- Tighten the clutch pushrod locknut.
- With the clutch pedal released, turn in the clutch pedal position switch until it contacts the clutch pedal.
- Turn in the clutch pedal position switch an additional 3/4 to 1 turn.
- Tighten the clutch pedal position switch locknut.
- Loosen the clutch interlock switch locknut (J).
- Press the clutch pedal to the floor.
- Release the clutch pedal 10-16 mm (0.39-0.63 in.) from the fully pressed position, and hold it there. Adjust the position of the clutch interlock switch (K) so the engine will start with the clutch pedal in this position.
- Tighten the clutch interlock switch locknut.
- Check the clutch operation.

CLUTCH PEDAL REPLACEMENT

1. Disconnect the clutch pedal position switch connector (A) and clutch interlock switch connector (B).

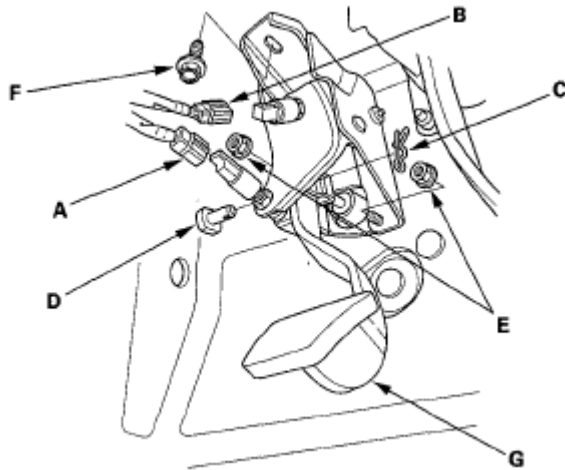


Fig. 7: Identifying Clutch Pedal Position Switch Connector And Clutch Interlock Switch Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pry out the lock pin (C), and pull the clevis pin (D) out of the yoke.
3. Remove the master cylinder mounting nuts (E) and clutch pedal mounting bolt (F).
4. Remove the clutch pedal (G).
5. Install the clutch pedal (A).

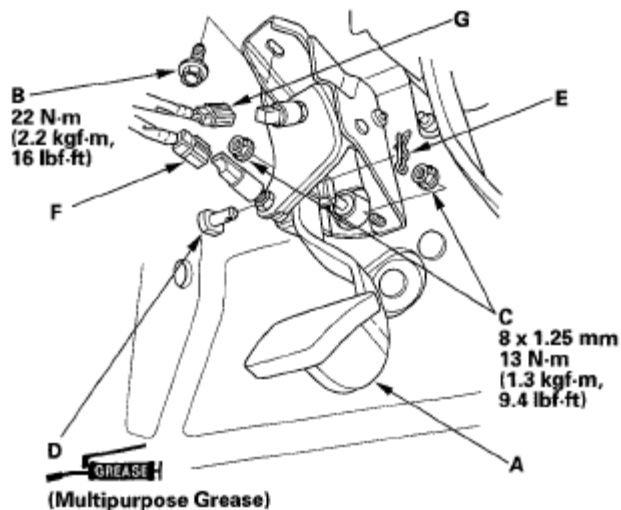


Fig. 8: Identifying Lock Pin And Clutch Pedal Mounting Bolt With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the clutch pedal mounting bolt (B) and master cylinder mounting nuts (C).
7. Apply grease to the clevis pin (D), and slide it into the yoke, then install a new lock pin (E).
8. Adjust the clutch pedal, clutch pedal position switch, and clutch interlock switch (see **CLUTCH**

PEDAL, CLUTCH PEDAL POSITION SWITCH, AND CLUTCH INTERLOCK SWITCH ADJUSTMENT).

9. Connect the clutch pedal position switch connector (F) and clutch interlock switch connector (G).
10. Check the clutch operation.

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 brake fluid from the clutch master cylinder reservoir with a syringe.
2. Make sure you have the anti-theft code for the audio unit.
3. Disconnect the negative cable from the battery, then disconnect the positive cable.
4. Remove the battery.
5. Remove the air cleaner assembly (see **AIR CLEANER REMOVAL/INSTALLATION**).
6. Remove the battery base (see step 10 on **ENGINE REMOVAL**).
7. Pry out the lock pin (A), and pull the clevis pin (B) out of the yoke. Remove the master cylinder mounting nuts (C).

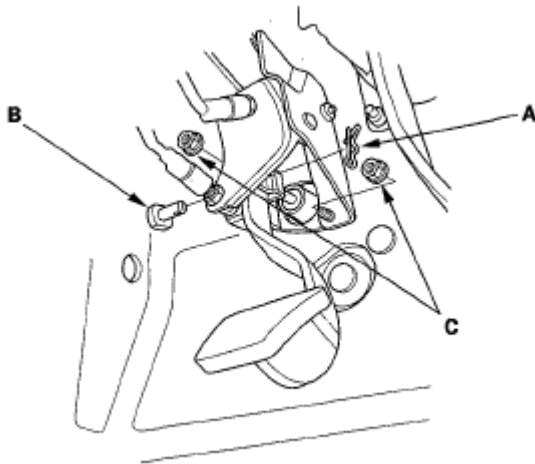


Fig. 9: Identifying Lock Pin And Clevis Pin
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the reservoir mounting bolt (A).

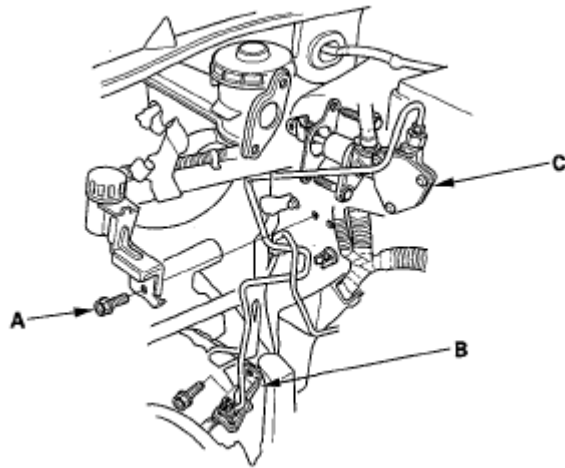


Fig. 10: Identifying Reservoir Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the clutch line bracket (B).
10. Remove the clutch master cylinder (C).
11. Disconnect the reservoir hose (A), then remove the retaining clip (B) and clutch line (C) from the clutch master cylinder (D). Plug or wrap the end of the reservoir hose and clutch line with a shop towel to prevent brake fluid from coming out.

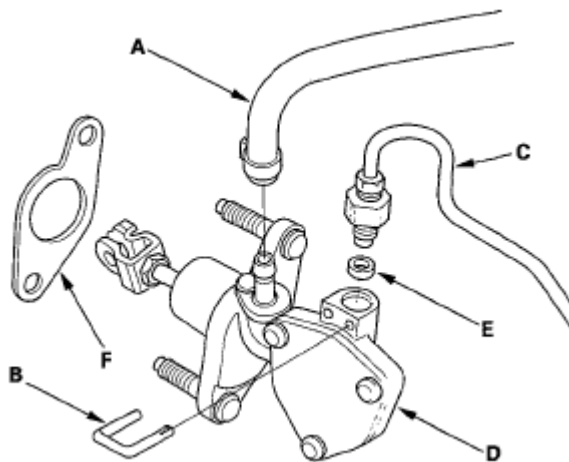


Fig. 11: Identifying Reservoir Hose, Retaining Clip And Clutch Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the O-ring (E) and clutch master cylinder seal (F) from the clutch master cylinder.
13. Install the new O-ring (A) and clutch master cylinder seal (B) to the clutch master cylinder (C).

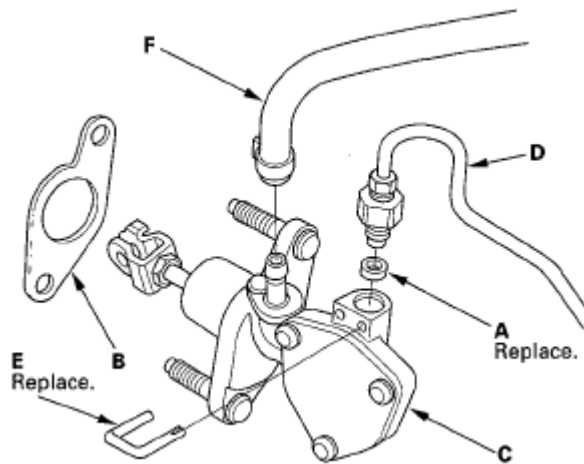


Fig. 12: Identifying O-Ring, Clutch Master Cylinder Seal And Clutch Master Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the clutch line (D), then install the new retaining clip (E). Connect the reservoir hose (F).
15. To prevent the retaining clip (A) from coming off, pry apart the tip of the retaining clip (B) with a screwdriver.

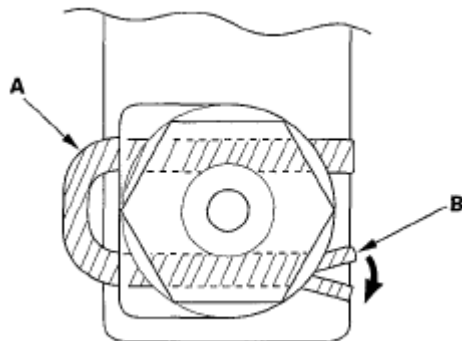


Fig. 13: Identifying Retaining Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the clutch master cylinder (A).

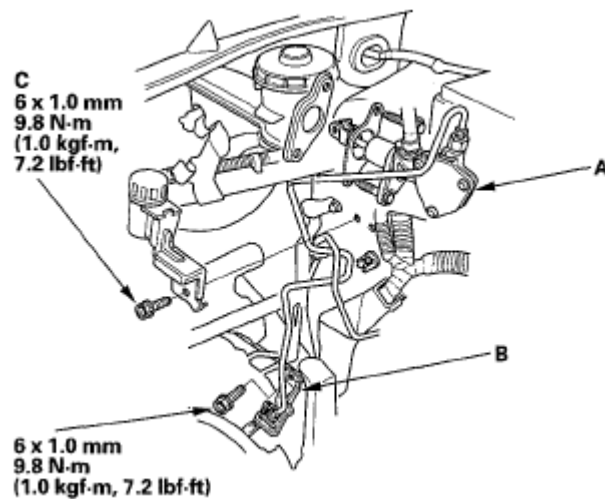


Fig. 14: Identifying Clutch Master Cylinder With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the clutch line bracket (B).
18. Install the reservoir mounting bolt (C).
19. Make sure the hose clamps (A) are positioned on the master cylinder (B) and reservoir (C) as shown.

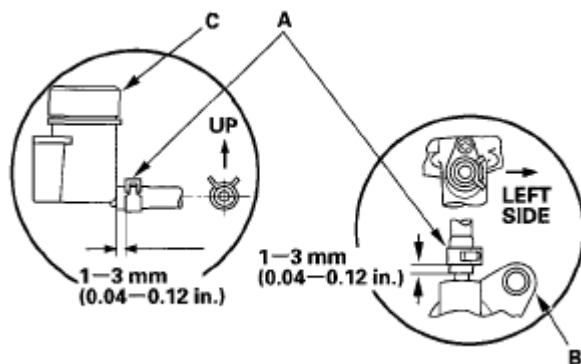


Fig. 15: Identifying Hose Clamps, Master Cylinder And Reservoir
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the master cylinder mounting nuts (A).

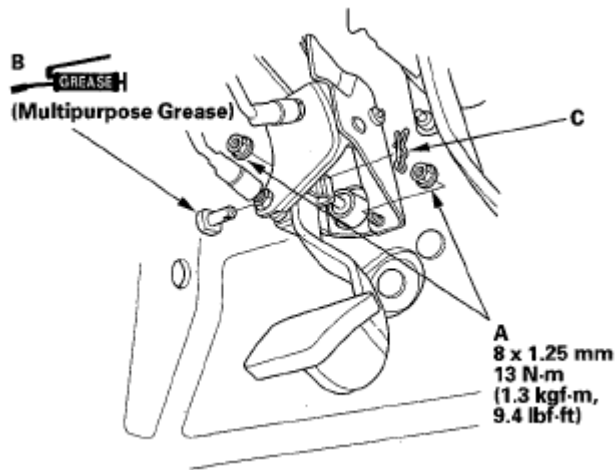


Fig. 16: Identifying Master Cylinder Mounting Nuts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Apply grease to the clevis pin (B), and slide it into the yoke, then install a new lock pin (C).
22. Adjust the clutch pedal, clutch pedal position switch, and clutch interlock switch (see **CLUTCH PEDAL, CLUTCH PEDAL POSITION SWITCH, AND CLUTCH INTERLOCK SWITCH ADJUSTMENT**).
23. Bleed the clutch hydraulic system (see **CLUTCH HYDRAULIC SYSTEM BLEEDING**).
24. Install the air cleaner assembly (see **AIR CLEANER REMOVAL/INSTALLATION**).
25. Install the battery base (see step 50 on **ENGINE INSTALLATION**).
26. Install the battery. Clean the battery posts and cable terminals. Connect the positive cable to the battery first, then connect the negative cable, and apply multipurpose grease to prevent corrosion.
27. Check the clutch operation, and check for leaks.
28. Enter the anti-theft code for the audio unit, and set the clock.
29. Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
30. Test-drive the vehicle.

SLAVE 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. Make sure you have the anti-theft code for the audio unit.
2. Disconnect the negative cable from the battery, then disconnect the positive cable.
3. Remove the battery.
4. Remove the air cleaner assembly (see **AIR CLEANER REMOVAL/INSTALLATION**).

5. Remove the battery base (see step 10 on **ENGINE REMOVAL**).
6. Remove the clutch line bracket (A).



Fig. 17: Identifying Clutch Line Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the mounting bolts (A) and the slave cylinder (B).

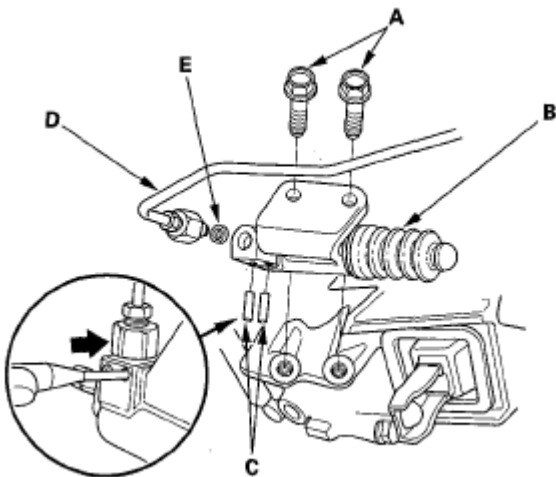


Fig. 18: Identifying Mounting Bolts And Slave Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the roll pins (C). Disconnect the clutch line (D), and remove the O-ring (E). Plug or wrap the end of the clutch line with a shop towel to prevent brake fluid from coming out.
9. Install the slave cylinder in the reverse order of removal. Install a new O-ring (A).

2007 Honda Element EX

2007-08 TRANSMISSION Clutch - Element

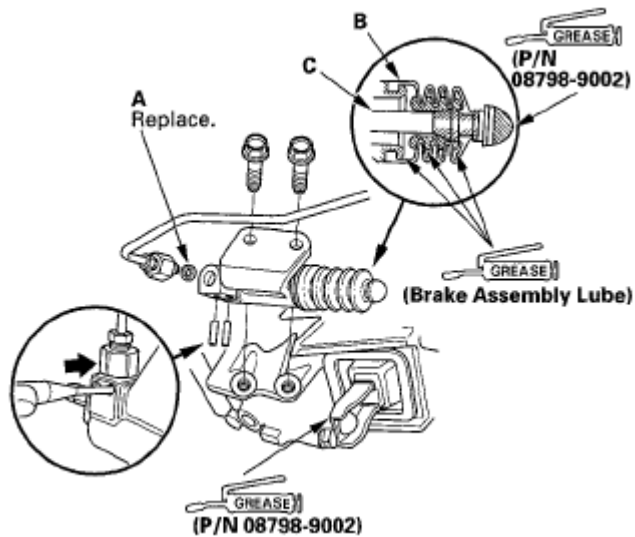


Fig. 19: Identifying O-Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pull back the boot (B), and apply brake assembly lube to the boot and slave cylinder rod (C). Reinstall the boot.
11. Apply super high temp urea grease (P/N 08798-9002) to the pushrod of the slave cylinder rod and the release fork. Tighten the slave cylinder mounting bolts to 22 N.m (2.2 kgf.m, 16 lbf.ft).
12. Do the clutch hydraulic system bleeding (see **CLUTCH HYDRAULIC SYSTEM BLEEDING**).
13. Install the air cleaner assembly (see **AIR CLEANER REMOVAL/INSTALLATION**).
14. Install the battery base (see step 50 on **ENGINE INSTALLATION**).
15. Install the battery. Clean the battery posts and cable terminals. Connect the positive cable to the battery first, then connect the negative cable, and apply multipurpose grease to prevent corrosion.
16. Check the clutch operation, and check for leaks.
17. Enter the anti-theft code for the audio unit, and set the clock.
18. Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
19. Test-drive the vehicle.

CLUTCH REPLACEMENT

Special Tools Required

- Clutch alignment disc 07JAF-PM7011A
- Ring gear holder 07LAB-PV00100 or 07924-PD20003
- Clutch alignment shaft 07ZAF-PR8A100
- Sliding hammer weight 07741-0010201
- Attachment, 22 x 24 mm 07746-0010800

- Driver 07749-0010000
- Remover handle 07936-3710100
- Bearing remover shaft set, 17 mm 07936-3710300

PRESSURE PLATE AND CLUTCH DISC REMOVAL

1. Check the height of the diaphragm spring fingers using the clutch alignment disc (A), clutch alignment shaft (B), remover handle (C), and a feeler gauge (D). If the height is more than the service limit, replace the pressure plate.

Standard (New): 0.6 mm (0.02 in.) max.

Service Limit: 0.8 mm (0.03 in.)

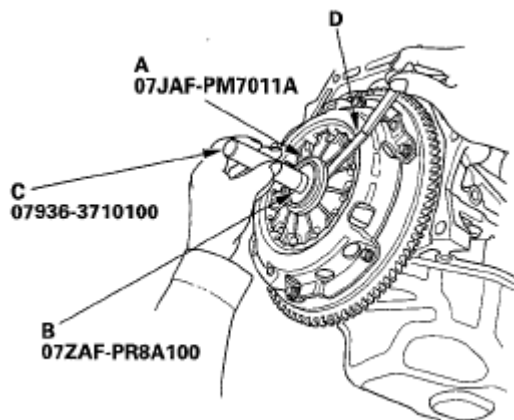


Fig. 20: Checking Height Of Diaphragm Spring Fingers Clutch Alignment Disc
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the ring gear holder (A), clutch alignment shaft (B), and remover handle (C).

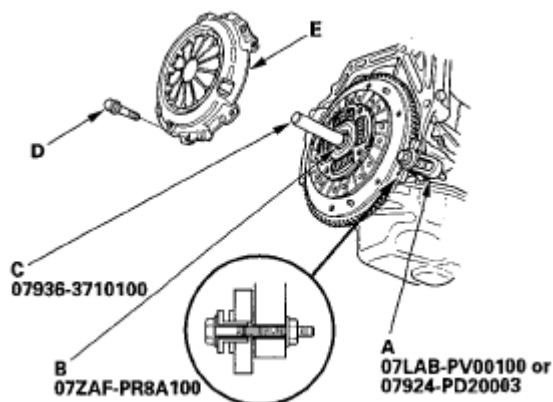


Fig. 21: Identifying Ring Gear Holder, Clutch Alignment Shaft And Remover Handle
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007 Honda Element EX

2007-08 TRANSMISSION Clutch - Element

3. To prevent warping, unscrew the pressure plate mounting bolts (D) in a crisscross pattern in several steps, then remove the pressure plate (E).
4. Inspect the fingers of the diaphragm spring (A) for wear at the release bearing contact area.

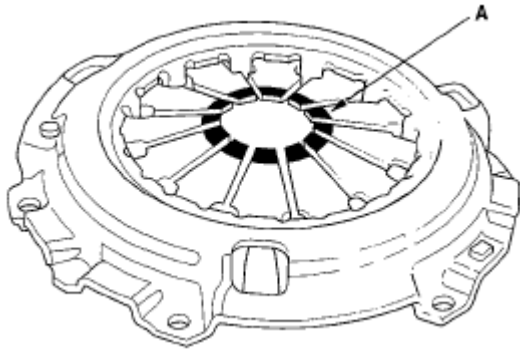


Fig. 22: Identifying Diaphragm Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inspect the surface of the pressure plate (A) for wear, cracks, and burning.

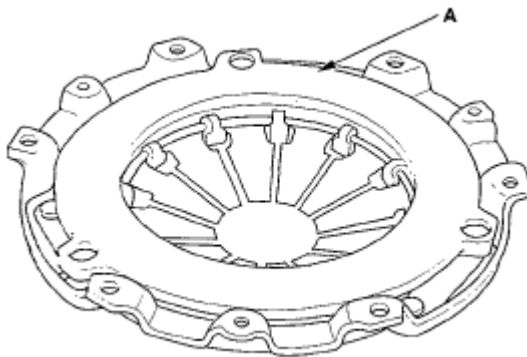


Fig. 23: Identifying Pressure Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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.

Service Limit: 0.15 mm (0.006 in.)

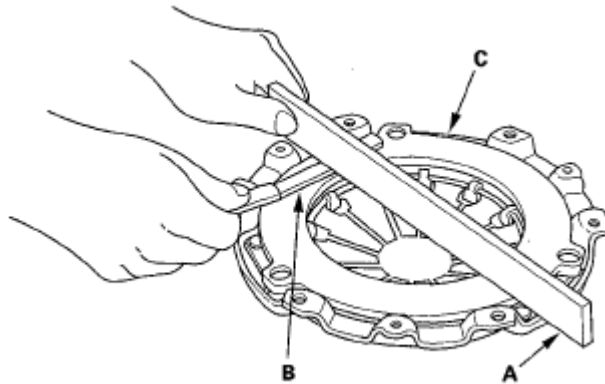


Fig. 24: Inspecting Warpage Straight Edge And Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the clutch disc (A), clutch alignment shaft (B), and remover handle (C).

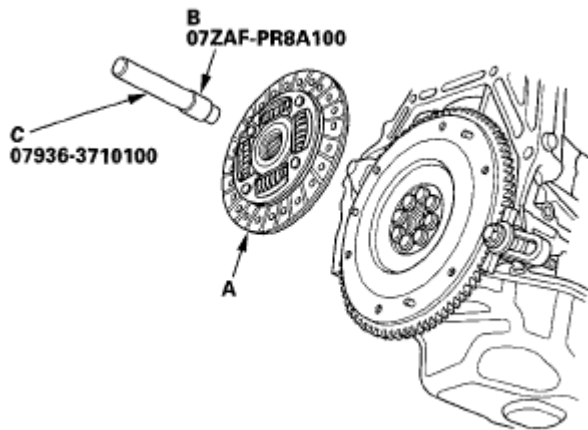


Fig. 25: Identifying Clutch Disc, Clutch Alignment Shaft And Remover Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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 and repair 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): 8.6-9.2 mm (0.34-0.36 in.)

Service Limit: 6.0 mm (0.24 in.)



Fig. 26: 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): 1.65-2.25 mm (0.065-0.089 in.)

Service Limit: 0.7 mm (0.03 in.)

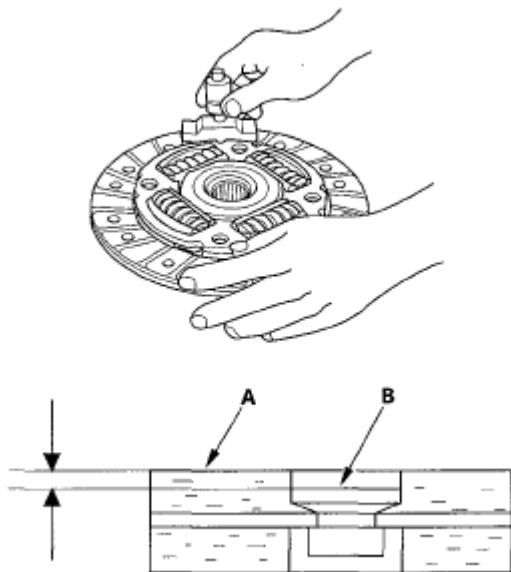


Fig. 27: Measuring Rivet Depth Clutch Disc Lining Surface To Rivets

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CRANKSHAFT PILOT BUSHING INSPECTION

1. Inspect the crankshaft pilot bush for wear and damage.
2. Inspect the inside surface of the crankshaft pilot bush with your finger. If the crankshaft pilot bush does not smoothly, replace the crankshaft pilot bush.

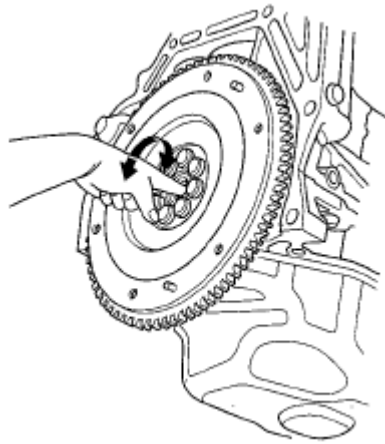


Fig. 28: Inspecting Inside Surface Of Crankshaft Pilot Bush
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CRANKSHAFT PILOT BUSHING REPLACEMENT

1. Remove the crankshaft pilot bush (A) using the sliding hammer weight (B), remover handle (C), and bearing remover shaft set, 17 mm (D).

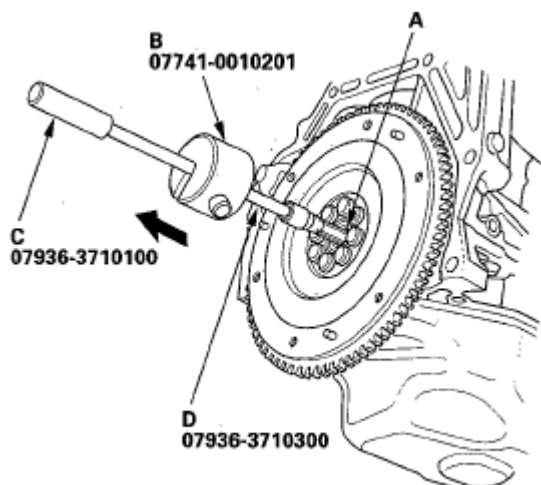


Fig. 29: Identifying Crankshaft Pilot Bush
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new crankshaft pilot bush (A) into the crankshaft using the driver (B), and attachment, 22 x 24 mm (C). Apply a light coat of grease to the crankshaft pilot bush surface.

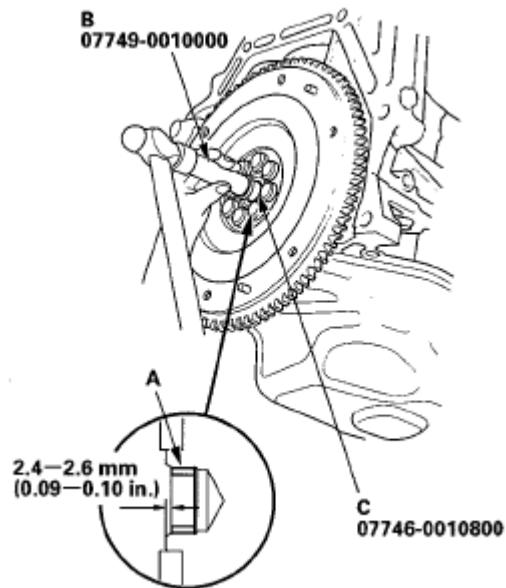


Fig. 30: Identifying Crankshaft Pilot Bush
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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.

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

Service Limit: 0.15 mm (0.006 in.)

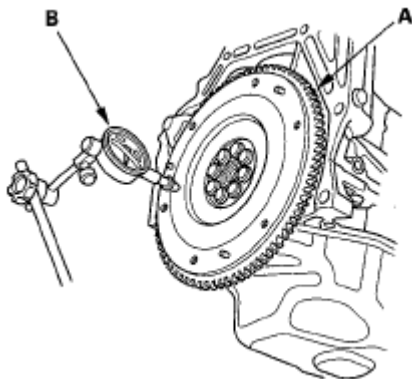
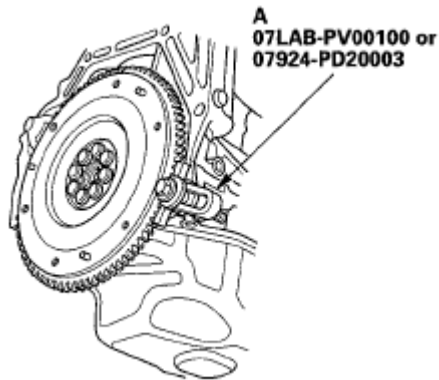


Fig. 31: Measuring Flywheel Runout With Dial Indicator
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

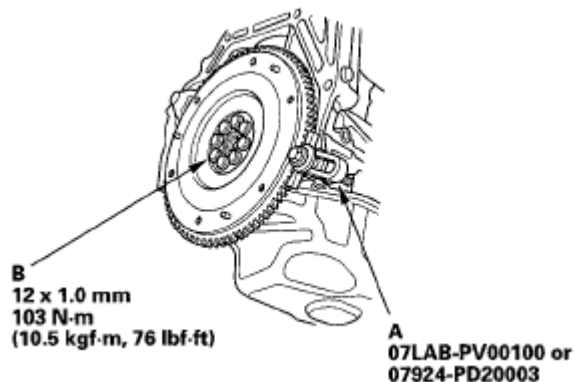
FLYWHEEL REPLACEMENT

1. Install the ring gear holder (A).

**Fig. 32: Identifying Ring Gear Holder**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the flywheel mounting bolts in a crisscross pattern in several steps, then remove the flywheel and ring gear holder.
3. Install the flywheel on the crankshaft, and install the mounting bolts finger-tight.
4. Install the ring gear holder (A), then torque the flywheel mounting bolts (B) in a crisscross pattern in several steps.

**Fig. 33: Identifying Ring Gear Holder And Flywheel Mountings Bolts With Torque Specification**

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 ring gear holder (A).

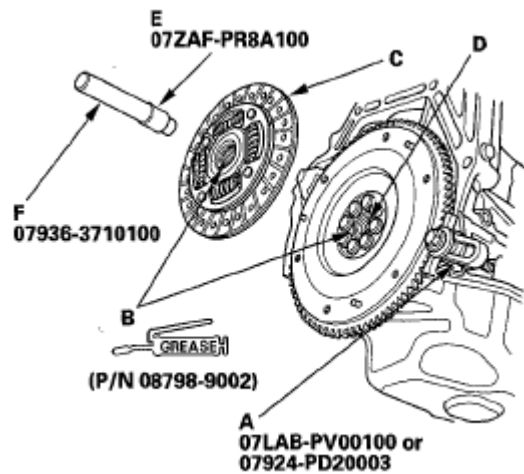


Fig. 34: Identifying Ring Gear Holder

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), the crankshaft pilot bushing (D), then install the clutch disc using the clutch alignment shaft (E) and remover handle (F).
4. Install the pressure plate (A) and the mounting bolts (B) finger-tight.

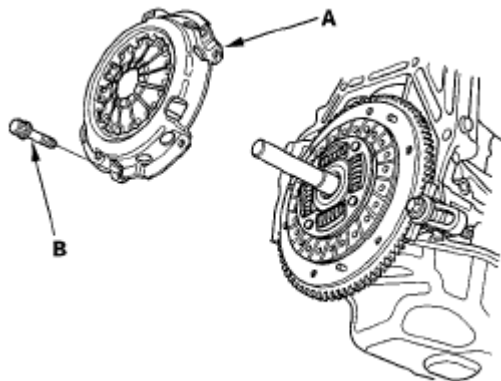


Fig. 35: Identifying Pressure Plate And Mounting Bolts

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.

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

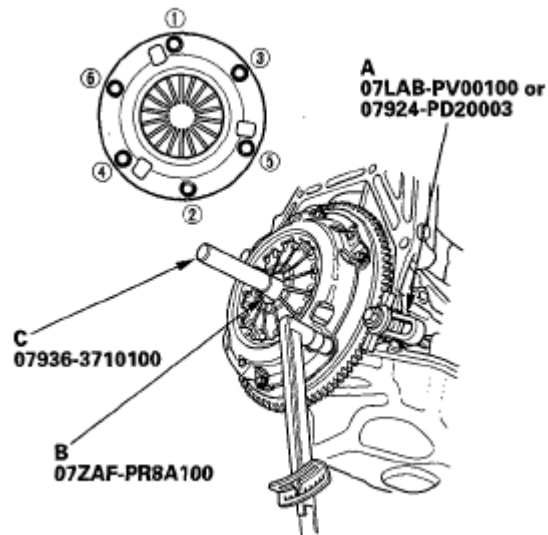


Fig. 36: Tightening Mounting Bolts In Crisscross Pattern
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the ring gear holder (A), clutch alignment shaft (B), and remover handle (C).
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).

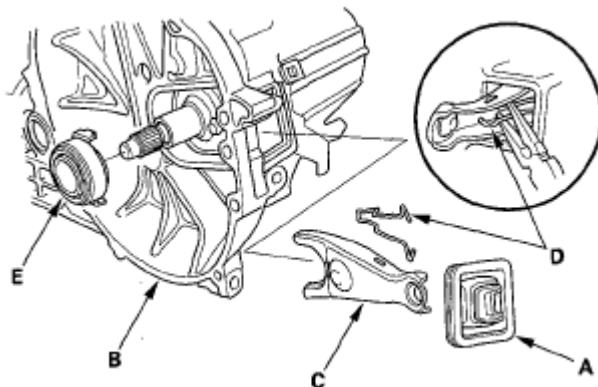


Fig. 37: Identifying Clutch Housing Release Fork Boot
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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 or noise, replace the release bearing.

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

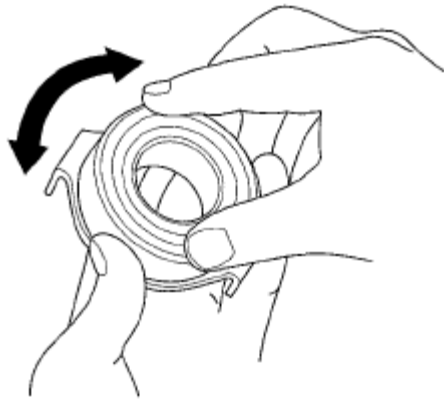


Fig. 38: Checking Play Of Release Bearing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply super high temp urea grease (P/N 08798-9002) to the release fork (A), the release fork bolt (B), the release bearing (C), and the release bearing guide (D) in the shaded areas.

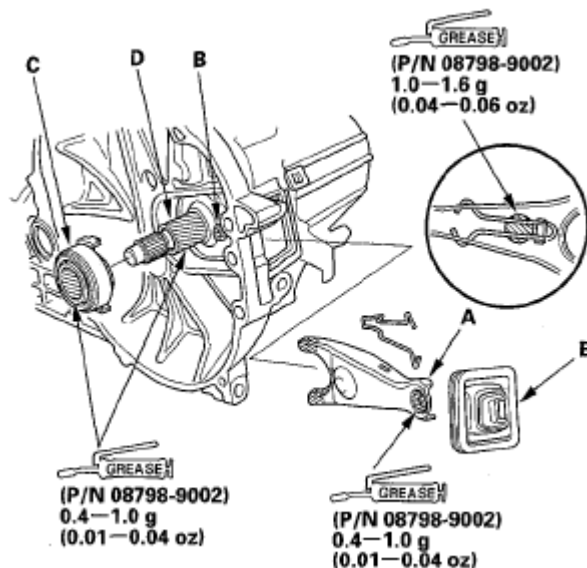


Fig. 39: Identifying Clutch Parts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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 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.

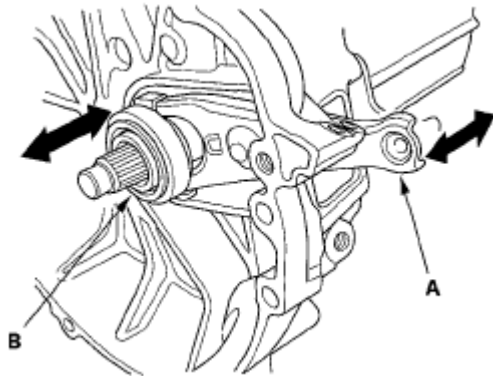


Fig. 40: Identifying Release Fork

Courtesy of AMERICAN HONDA MOTOR CO., INC.