

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

2007-2008 BRAKES

Conventional Brake Components - Element

SPECIAL TOOLS

| Ref. No. | Tool Number | Description | Qty |
|----------|---------------|---------------------------------|-----|
| ① | 07AAE-SEPA101 | Brake Caliper Piston Compressor | 1 |
| ② | 07JAG-SD40100 | Pushrod Adjustment Gauge | 1 |



Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

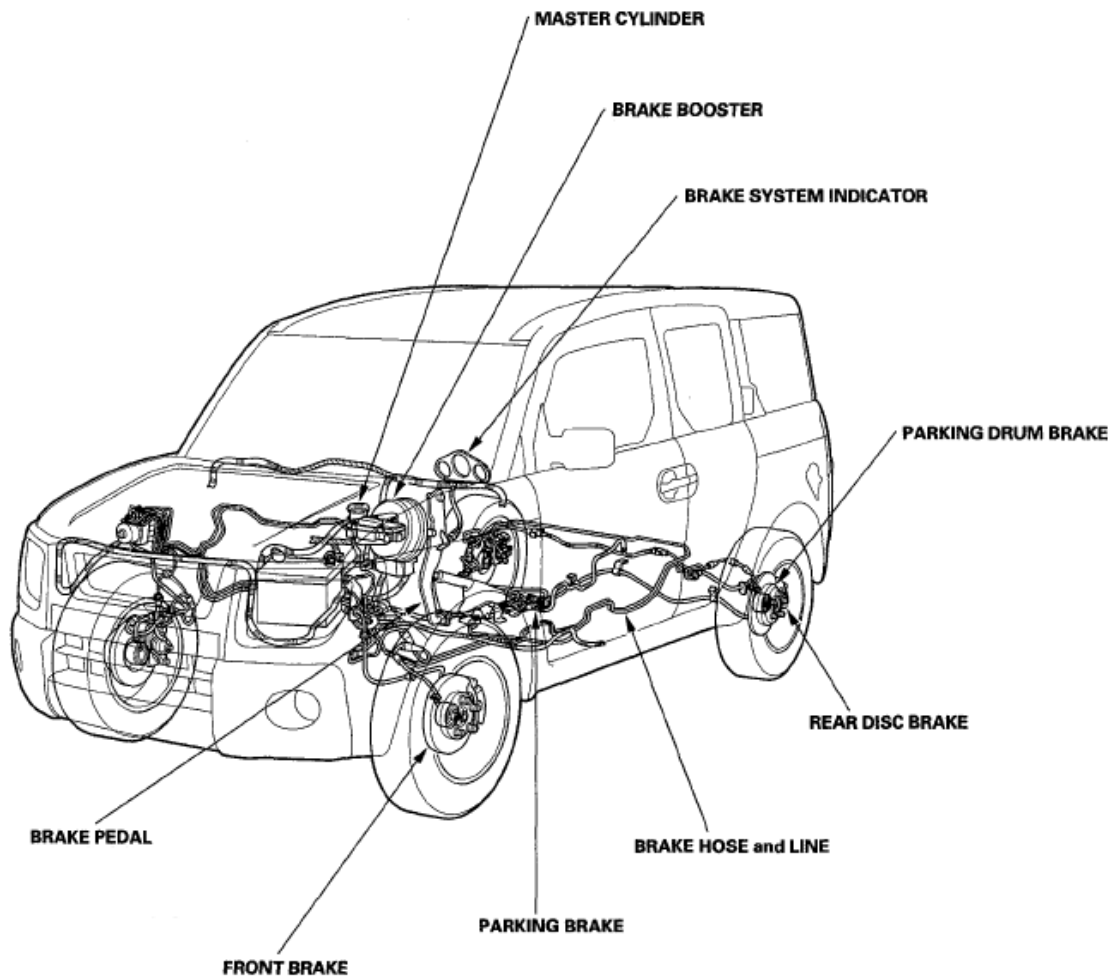


Fig. 2: Conventional Brake Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE SYSTEM INSPECTION AND TEST

Inspect the brake system components listed. Repair or replace any parts that are leaking or damaged.

Component Inspections:

COMPONENT INSPECTIONS REFERENCE

| Component | Procedure | Also check for |
|-----------------|---|---|
| Master Cylinder | Look for damage or signs of fluid leakage at: <ul style="list-style-type: none">• Reservoir or reservoir grommets.• Line joints. | Bulging seat at reservoir cap. This is a sign of fluid contamination. |

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

| | | |
|----------------------------|---|----------------------------------|
| | <ul style="list-style-type: none">• Between master cylinder and booster. | |
| Brake Hoses | Look for damage or signs of fluid leakage at: <ul style="list-style-type: none">• Line joints and banjo bolt connections.• Hoses and lines, also inspect for twisting or damage. | Bulging, twisted, or bent lines. |
| Caliper | Look for damage or signs of fluid leakage at: <ul style="list-style-type: none">• Piston seal.• Banjo bolt connections.• Bleed screw. | Seized or sticking caliper pins. |
| VSA Modulator-control Unit | Look for damage or signs of fluid leakage at: <ul style="list-style-type: none">• Line joints.• Modulator-control unit. | |

BRAKE SYSTEM TEST

Brake pedal sinks/fades when braking

1. Set the parking brake, and start the engine, then turn off the A/C switch. Allow the engine to warm up to normal operating temperature (radiator fan comes on twice).
2. Attach a 50 mm (2 in.) piece of masking tape along the bottom of the steering wheel, and draw a horizontal reference mark across it.
3. With the transmission M/T in the neutral position, A/T in the P or N position, press and hold the brake pedal lightly (about the same pressure needed to keep an A/T-equipped vehicle from creeping), then release the parking brake.
4. While still holding the brake pedal, hook the end of the tape measure behind the brake pedal, then pull the tape up to the steering wheel. Note the measurement between the brake pedal and the reference mark on the steering wheel.
5. Apply steady pressure to the brake pedal for 3 minutes.
6. Watch the tape measure.
 - If the measurement increases 10 mm (3/8 in.) or less, the master cylinder is OK.
 - If the measurement increases more than 10 mm (3/8 in.), replace the master cylinder.

SYMPTOM TROUBLESHOOTING

RAPID BRAKE PAD WEAR, VEHICLE VIBRATION (AFTER A LONG DRIVE), OR HIGH, HARD

BRAKE PEDAL

NOTE: Make sure that the caliper pins are installed correctly.

The upper caliper pin A and lower caliper pin B are different. If the pins are installed in the wrong location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear. For proper caliper pin location (see **FRONT BRAKE CALIPER OVERHAUL**).

1. Drive the vehicle until the brakes drag or until the pedal is high and hard. This can take 20 or more brake pedal applications during an extended test-drive.
2. With the engine running, raise the vehicle on a lift, and spin all four wheels by hand.

Is there brake drag at any of the wheels?

YES -Go to step 3.

NO -Look for other causes of pad wear, high pedal, or vehicle vibration.

3. Turn the engine off, press the brake pedal several times to deplete the vacuum in the brake booster, and then spin the wheels again to check for brake drag.

Is there brake drag at any of the wheels?

YES -Go to step 4.

NO -Replace the brake booster (see **BRAKE BOOSTER REPLACEMENT**).

4. Without removing the brake lines, unbolt and separate the master cylinder from the booster, then spin the wheels to check for brake drag.

Is there brake drag at any of the wheels?

YES -Go to step 5.

NO -Check the brake pedal position switch adjustment and pedal free play (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

5. Loosen the hydraulic lines at the master cylinder, then spin the wheels to check for brake drag.

Is there brake drag at any of the wheels?

YES -Go to step 6.

NO -Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid. If the brake fluid is OK, replace the master cylinder (see **MASTER CYLINDER REPLACEMENT**).

6. Loosen the bleed screws at each caliper, then spin the wheels to check for brake drag.

Is there brake drag at any of the wheels?

YES -Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid. If the brake fluid is OK, disassemble and repair the caliper on the wheel(s) with brake drag.

NO -Look for and replace any damaged brake lines. If all brake lines are OK, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT

PEDAL HEIGHT

1. Turn the brake pedal position switch (A) counterclockwise, and pull it back until it is no longer touching the brake pedal.

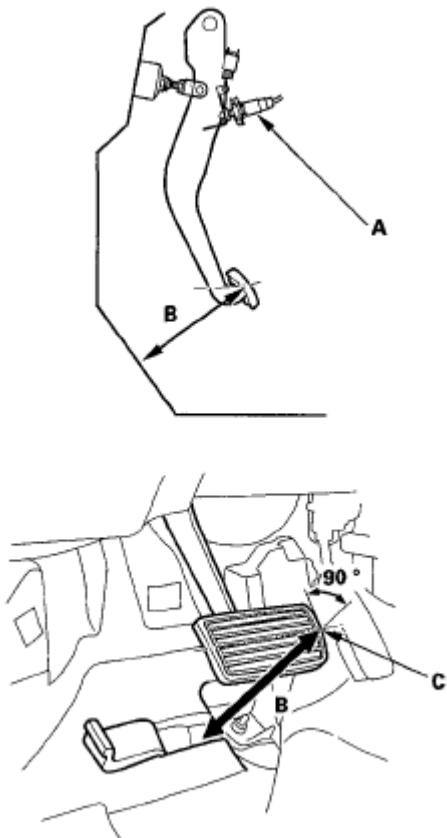


Fig. 3: Adjusting Pedal Height

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pull back the carpet and find the cutout in the insulator. Lift up the insulator cutout and measure the pedal height (B) at the center of the pedal pad (C) to the floor.

Standard pedal height (with carpet removed):

M/T model: 178 mm (7 in.)

A/T model: 180 mm (7 3/32 in.)

3. Loosen the pushrod locknut (A), and screw the pushrod (B) in or out with pliers until the standard pedal height from the floor is reached. After adjustment, tighten the locknut firmly. Do not adjust the pedal height with the pushrod pressed.

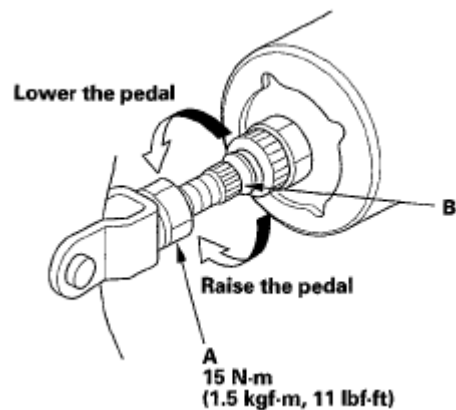


Fig. 4: Loosening Pushrod Locknut And Screwing Pushrod With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Lift up on the brake pedal by hand. Push in the brake pedal position switch until its plunger is fully pressed (threaded end (A) touching the pad (B) on the pedal arm). Turn the switch 45° clockwise to lock it. The gap between the brake pedal position switch and the pad is automatically adjusted to 0.7 mm (0.03 in.) by locking the switch. Make sure the brake lights go off when the pedal is released.

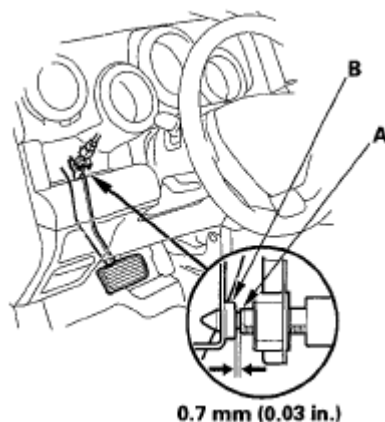


Fig. 5: Pushing Brake Pedal Position Switch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the brake pedal free play.

PEDAL FREE PLAY

1. With the engine off, inspect the play (A) at the brake pedal pad (B) by pushing the brake pedal by hand. If the brake pedal, free play is out of specification, adjust the brake pedal position switch (C). If the brake pedal free play is insufficient, it may result in brake drag.

Freeplay: 1-5 mm (1/16-3/16 in.)

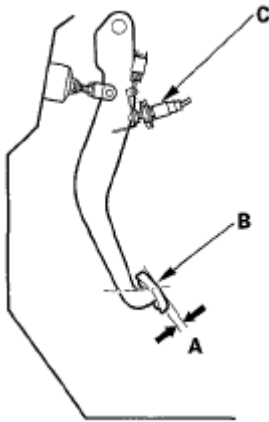


Fig. 6: Identifying Pedal Free Play

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE INSPECTION AND ADJUSTMENT

INSPECTION

1. Pull the parking brake lever (A) with 196 N (20 kgf, 44 lbf) of force to fully apply the parking brake. The parking brake lever should be locked within the specified number of clicks (B).

Lever locked clicks:

Except SC model: 4 to 7

SC model: 8 to 10

NOTE: The illustration shows except SC model.

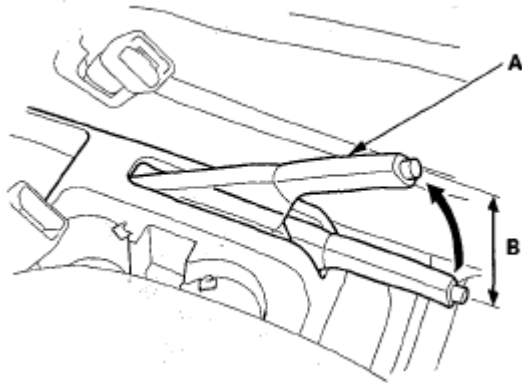


Fig. 7: Identifying Parking Brake Lever With Lever Locked Clicks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Adjust the parking brake if the lever clicks are not within the specification.

NOTE: Minor parking brake adjustments (1 to 2 clicks) can be made with the adjusting nut. If a larger adjustment is required, follow the major adjustment procedure using the adjuster at the parking brake drum.

After installing new parking brake shoes and/or new brake disc/drum, make sure you drive the vehicle for "break-in" (see **PARKING BRAKE SHOE LINING BREAK-IN**).

MINOR ADJUSTMENT

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Release the parking brake lever fully.
3. Except SC model: Remove the center console (see **LX, EX MODELS**). SC model: Remove the lid from the center console.
4. Pull the parking brake lever 1 click.
5. Tighten the parking brake adjusting nut (A) until the parking brakes drag slightly when the rear wheels are turned.

Except SC model

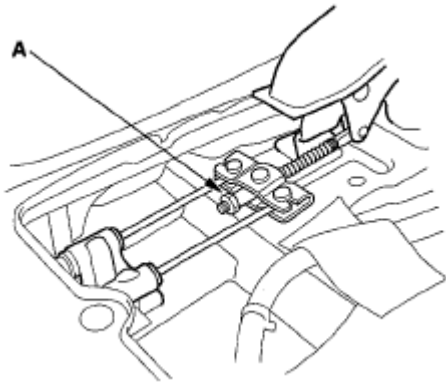


Fig. 8: Identifying Parking Brake Adjusting Nut - Except SC Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SC model

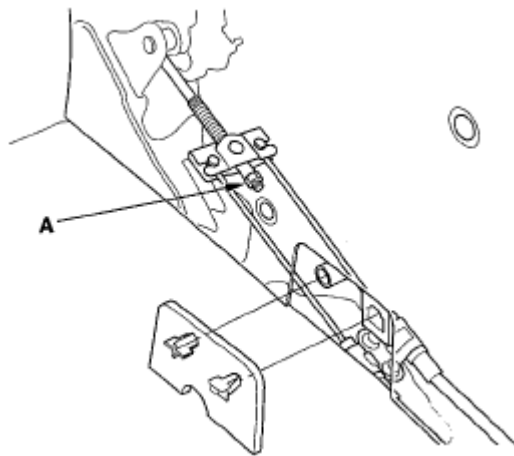


Fig. 9: Identifying Parking Brake Adjusting Nut - SC Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Release the parking brake lever fully, and check that the parking brakes do not drag when the rear wheels are turned. Readjust if necessary.
7. Make sure the parking brakes are fully applied when the parking brake lever is pulled in all the way.
8. Except SC model: Install the center console (see **LX, EX MODELS**). SC model: Install the lid to the center console.

MAJOR ADJUSTMENT (TO BE DONE WHEN REPLACING PARKING BRAKE SHOES AND AFTER LINING SURFACE BREAK-IN)

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Release the parking brake lever fully.
3. Except SC model: Remove the center console (see **LX, EX MODELS**). SC model: Remove the lid from

the center console.

4. Back off the parking brake adjusting nut (A) in the equalizer.

Except SC model

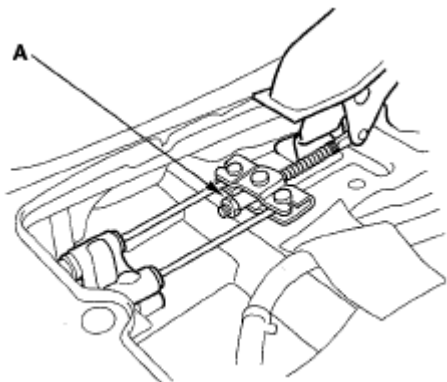


Fig. 10: Identifying Parking Brake Adjusting Nut - Except SC Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SC model

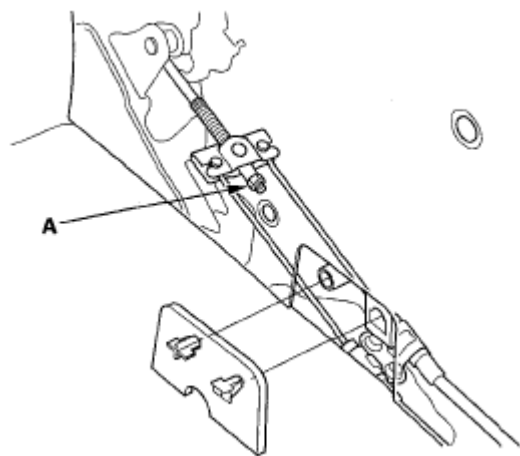


Fig. 11: Identifying Parking Brake Adjusting Nut - SC Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the rear wheels.
6. Remove the access plug (A).

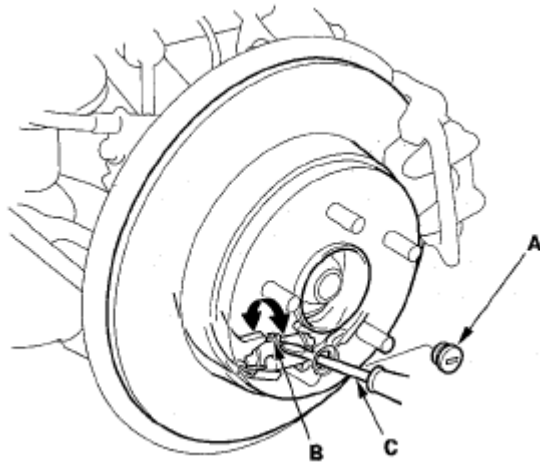


Fig. 12: Turning Ratchet Teeth On Adjuster Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ratchet teeth on the adjuster nut (B) with a flat-tip screwdriver (C) until the shoes lock against the parking brake drum. Then back off the adjuster 8 clicks, and install the access plug.
8. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.
9. Do the minor adjustment procedure.
10. Except SC model: Install the center console (see **LX, EX MODELS**). SC model: Install the lid to the center console.

BRAKE SYSTEM BLEEDING

NOTE:

- Do not reuse the drained fluid. Use only clean 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 no dirt or other foreign matter is allowed to contaminate the brake fluid.
- 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.
- The reservoir connected to the master cylinder must be at the MAX (upper) level mark at the start of the bleeding procedure and checked after bleeding each brake system. Add fluid as required.

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

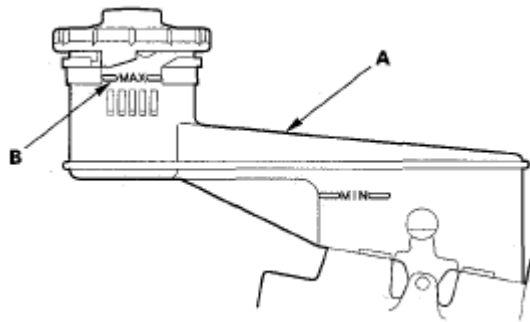


Fig. 13: Identifying Brake Fluid Level In Reservoir With Max (Upper) Level Line
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Have someone slowly pump the brake pedal several times, then apply steady pressure.
3. Start the bleeding at the driver's side of the front brake system.

NOTE: **Bleed the calipers or the wheel cylinders in the sequence shown.**

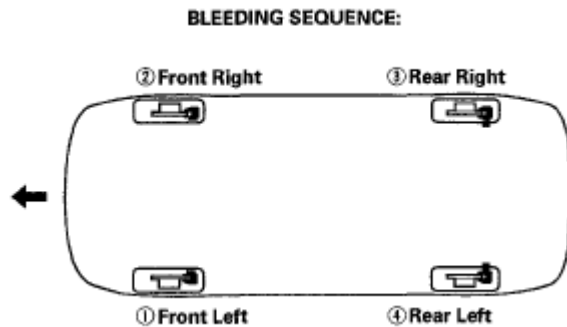


Fig. 14: Identifying Wheel Cylinders Bleeding Sequence
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Attach a length of clear drain tube (A) to the bleed screw (B), then, loosen the bleed screw to allow air to escape from the system. Then tighten the bleed screw securely.

Front

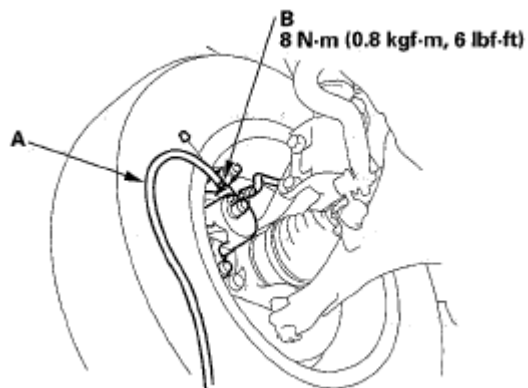


Fig. 15: Attaching Clear Drain Tube To Bleed Screw - Front With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

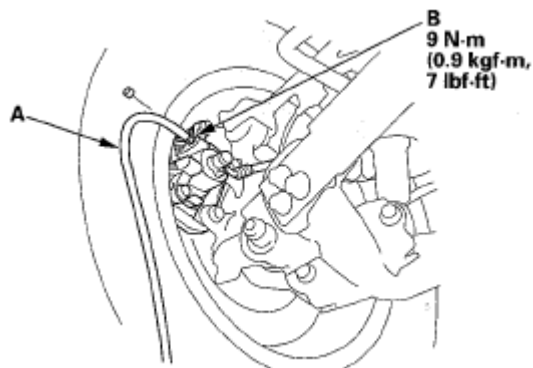


Fig. 16: Attaching Clear Drain Tube To Bleed Screw - Rear With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Refill the master cylinder reservoir to the MAX (upper) level line.
6. Repeat the procedure for each brake circuit until there are no air bubbles are in the fluid.

BRAKE SYSTEM INDICATOR CIRCUIT DIAGRAM

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

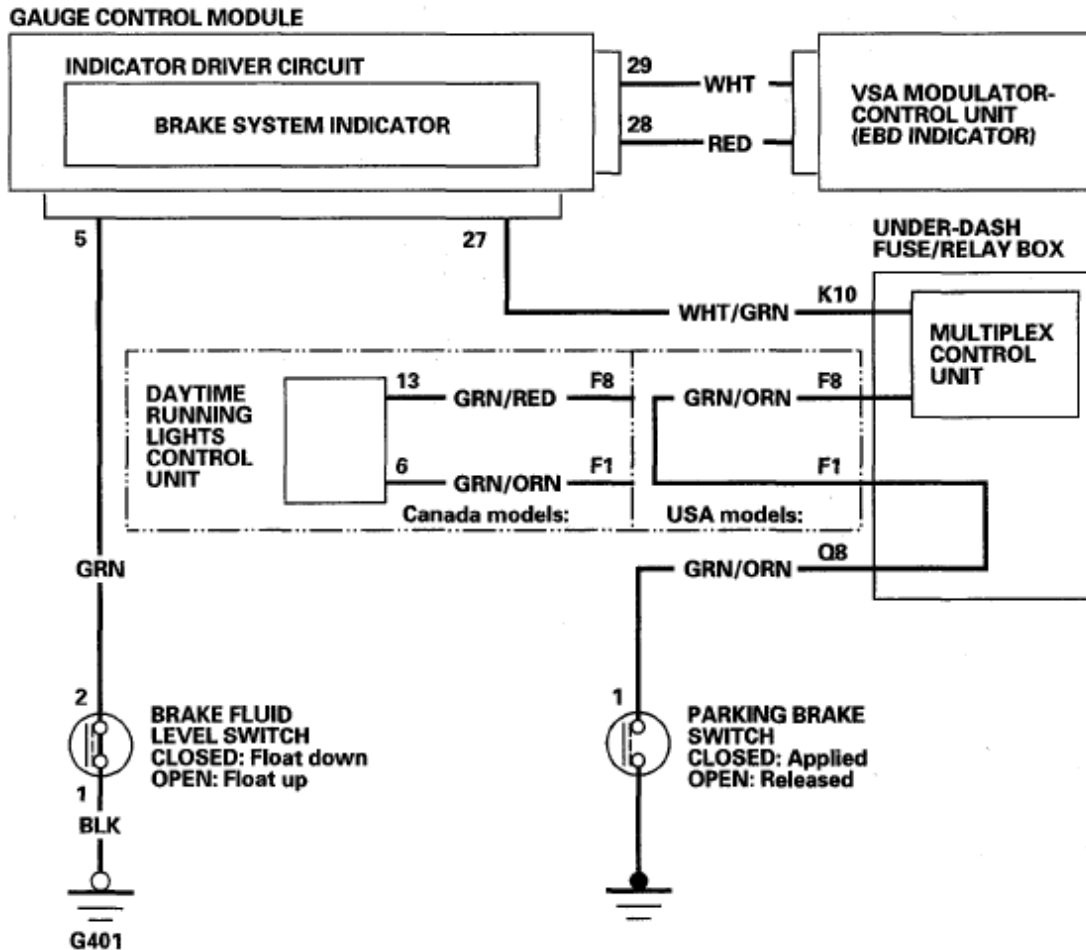


Fig. 17: Brake System Indicator Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE SWITCH TEST

NOTE: If both the ABS/VSA indicator and the brake system indicator come on at the same time, check the VSA system first (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Remove the center console: Except SC model (see **LX, EX MODELS**), SC model (see **CENTER CONSOLE REMOVAL/INSTALLATION**),
2. Disconnect the parking brake switch connector (A) from the parking brake switch (B).

NOTE: The illustration shows except SC model.

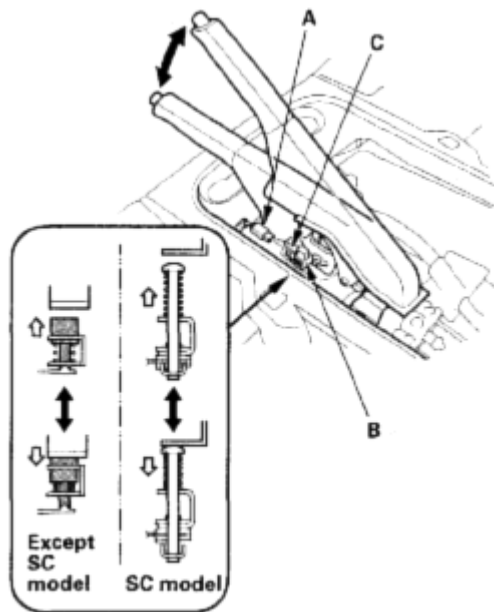


Fig. 18: Identifying Parking Brake Switch Connector And Parking Brake Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the switch terminal (C) and body ground.
 - With the parking brake lever pulled, there should be continuity.
 - With the parking brake lever released, there should be no continuity.

NOTE: If the parking brake switch and the fluid level switch are OK, but the brake system indicator does not function, do the gauge control module test (see SELF-DIAGNOSTIC FUNCTION).

4. Connect the parking brake switch connector to the parking brake switch.
5. Install the center console: Except SC model (see LX, EX MODELS), SC model (see CENTER CONSOLE REMOVAL/INSTALLATION).

BRAKE FLUID LEVEL SWITCH TEST

Check for continuity between the terminals (1) and (2) with the float in the down position and in the up position.

- NOTE:**
- Remove the brake fluid completely from the reservoir. With the float down, there should be continuity.
 - Fill the reservoir with brake fluid to the MAX (upper) level (A). With the float up, there should be no continuity.
 - If both the ABS/VSA indicator and the brake system indicator come on at same time, check the VSA system first (see GENERAL).

TROUBLESHOOTING INFORMATION).

- If the parking brake switch and fluid level switch are OK, but brake system indicator does not function, do the gauge control module test (see **SELF-DIAGNOSTIC FUNCTION**).

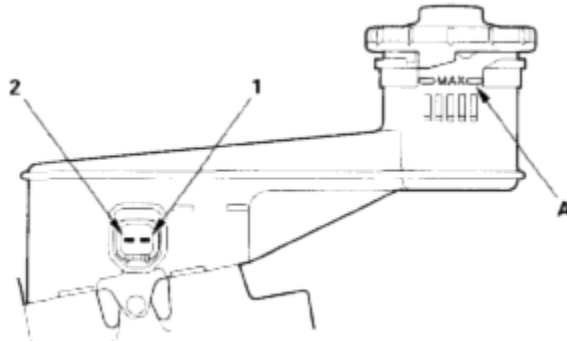


Fig. 19: Identifying Brake Fluid MAX (Upper) Level With Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT BRAKE PAD INSPECTION AND REPLACEMENT

Special Tools Required

Brake caliper piston compressor 07AAE-SEPA101

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

INSPECTION

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Check the thickness (A) of the inner pad (B) and outer pad (C). Do not include the thickness of the backing plate.

Brake pad thickness:

Standard: 10.6-11.2 mm (0.42-0.44 in.)

Service limit: 1.6 mm (0.06 in.)

Inner pad

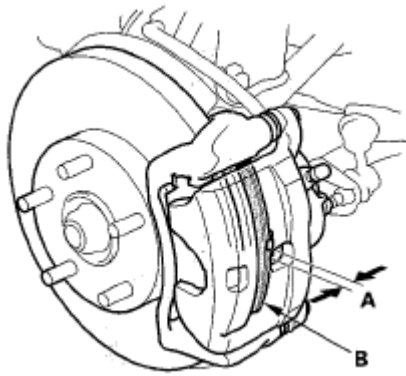


Fig. 20: Identifying Brake Pad Thickness - Inner Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Outer pad

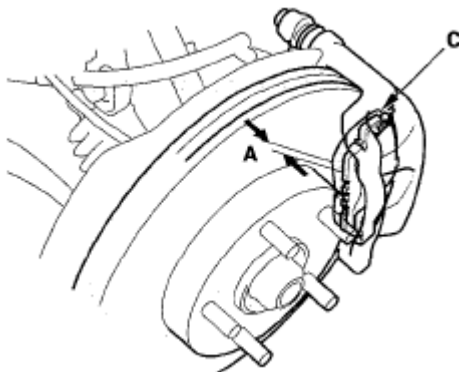


Fig. 21: Identifying Brake Pad Thickness - Outer Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the brake pad thickness is less than the service limit, replace the front brake pads as a set.
5. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheels.

REPLACEMENT

1. Remove some brake fluid from the master cylinder.
2. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
3. Remove the front wheels.
4. Remove the flange bolt (A), and pivot the caliper (B) up out of the way. Check the hose and pin boots for damage and deterioration.

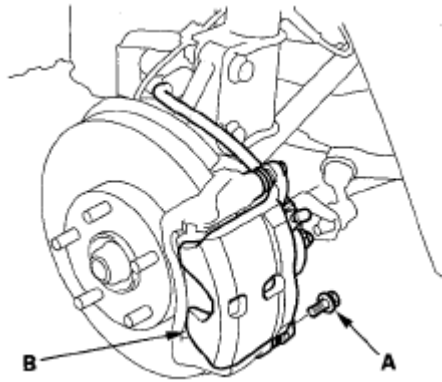


Fig. 22: Identifying Flange Bolt And Caliper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the pad springs (A) from the brake pads.

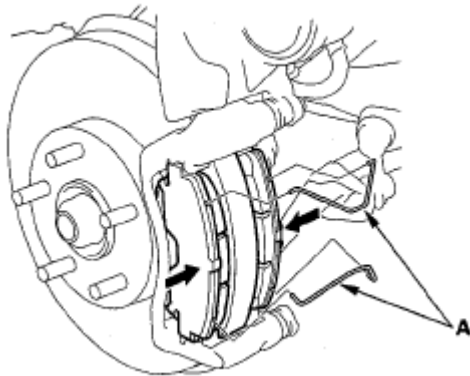


Fig. 23: Identifying Pad Springs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the pad shims (A) and brake pads (B).

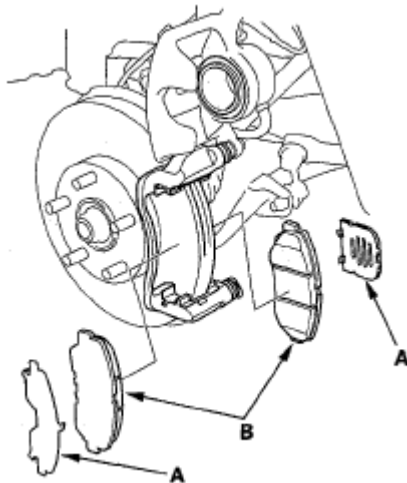


Fig. 24: Identifying Pad Shims And Brake Pads
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the pad retainers (A).

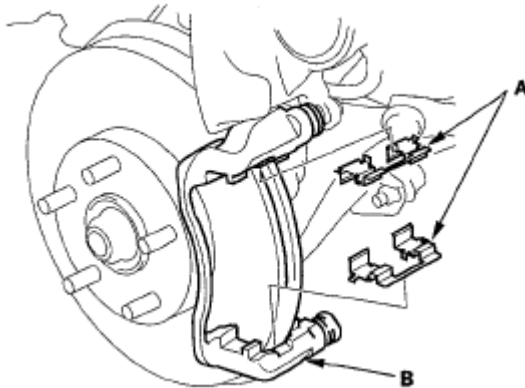


Fig. 25: Identifying Pad Retainers
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks.
9. Inspect the brake disc, and check for damage and cracks (see **FRONT BRAKE DISC INSPECTION**).
10. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the retainers on their mating surfaces against the caliper bracket.
11. Install the pad retainers. Wipe excess assembly paste off the retainers. Keep the assembly paste off the brake discs and brake pads.
12. Mount the brake caliper piston compressor tool (A) on the caliper body (B).

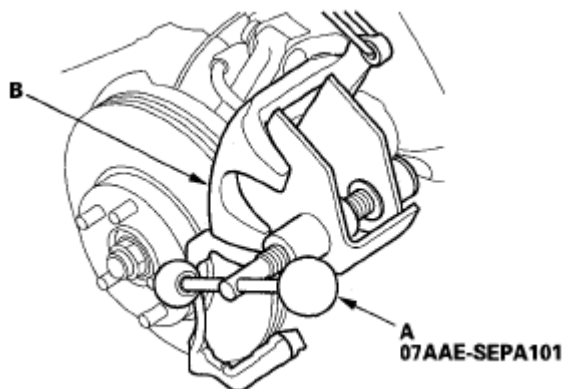


Fig. 26: Identifying Brake Caliper Piston Compressor Tool On Caliper Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Press in the piston with the brake caliper piston compressor so the caliper will fit over the brake pads. Make sure the piston boot is in position to prevent damaging it when pivoting the caliper down.

NOTE: Be careful when pressing in the piston; brake fluid might overflow from the master cylinder's reservoir. If brake fluid gets on any painted surface, wash it off immediately with water.

14. Remove the brake caliper piston compressor tool.
15. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B) and the other areas indicated by the arrows. Wipe excess assembly paste off the pad shims and brake pads. Contaminated brake discs or brake pads reduces stopping ability. Keep grease and assembly paste off the brake discs and brake pads.

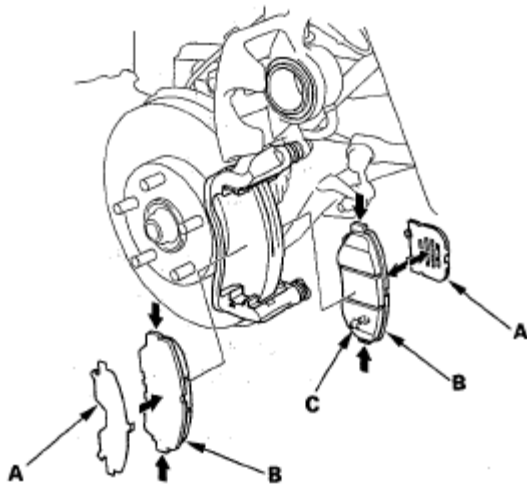


Fig. 27: Identifying Shims, Brake Pads And Wear Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the bottom inside. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a momentary loss of braking efficiency.
17. Pivot the caliper down into position. Install the flange bolt (A), and tighten it to the specified torque.

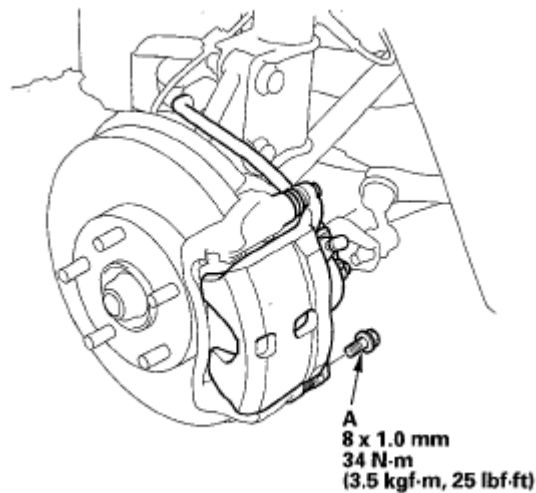


Fig. 28: Identifying Flange Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheels.
19. Press the brake pedal several times to make sure the brakes work.

NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

20. Add brake fluid as needed.
21. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then check for leaks (see **BRAKE HOSE AND LINE INSPECTION**).

FRONT BRAKE DISC INSPECTION

RUNOUT

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Remove the brake pads (see **REPLACEMENT**).
4. Inspect the brake disc surface for damage and cracks. Clean the brake disc thoroughly, and remove all rust.
5. Install suitable flat washers (A) and wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc securely against the hub.

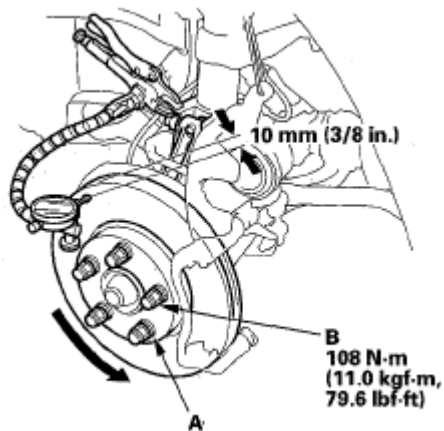


Fig. 29: Checking Brake Disc Runout With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Set up the dial gauge against the brake disc as shown, and measure the runout at 10 mm (3/8 in.) from the outer edge of the brake disc.

Brake disc runout: Service limit: 0.04 mm (0.0016 in.)

- If the brake disc is beyond the service limit, refinish the brake disc with a commercially available on-car brake lathe.

Max. refinishing limit: 21.0 mm (0.83 in.)

NOTE:

- If the brake disc is beyond the service limit for refinishing, replace it (see **FRONT BRAKE DISC REPLACEMENT**).
- A new brake disc should be refinished if its runout is greater than 0.04 mm (0.0016 in.).

THICKNESS AND PARALLELISM

- Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
- Remove the front wheels.
- Remove the brake pads (see **REPLACEMENT**).
- Using a micrometer, measure the brake disc thickness at eight points, about 45° apart and 10 mm (3/8 in.) in from the outer edge of the brake disc. Replace the brake disc if the smallest measurement is less than the max. refinishing limit.

Brake disc thickness:

Standard: 22.9-23.1 mm (0.90-0.91 in.)

Max. refinishing limit: 21.0 mm (0.83 in.)

Brake disc parallelism: 0.015 mm (0.0006 in.) max.

NOTE: This is the maximum allowable difference between the thickness measurements.

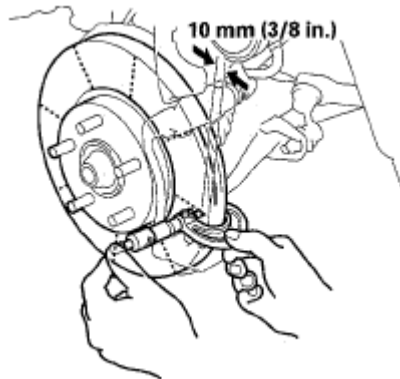


Fig. 30: Checking Brake Disc Thickness

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the brake disc is beyond the service limit for parallelism, refinish the brake disc with a commercially available on-car brake lathe.

NOTE: If the brake disc is beyond the service limit for refinishing, replace it (see FRONT BRAKE DISC REPLACEMENT).

FRONT BRAKE DISC REPLACEMENT

NOTE: Keep any grease off the brake disc and brake pads.

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the front wheel.
3. Remove the brake hose bracket mounting bolt (A).

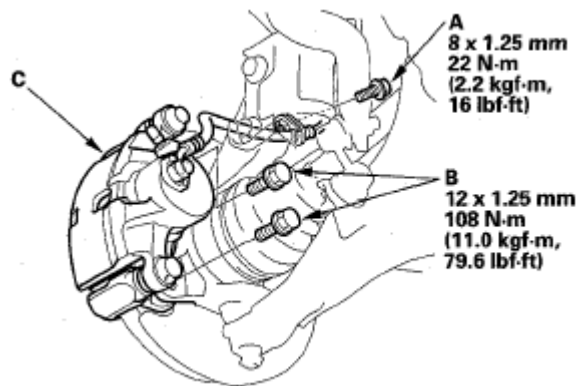


Fig. 31: Identifying Brake Hose Bracket Mounting Bolt, Brake Caliper Bracket Mounting Bolts And Caliper Assembly With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.
5. Remove the brake disc flat screws (A).

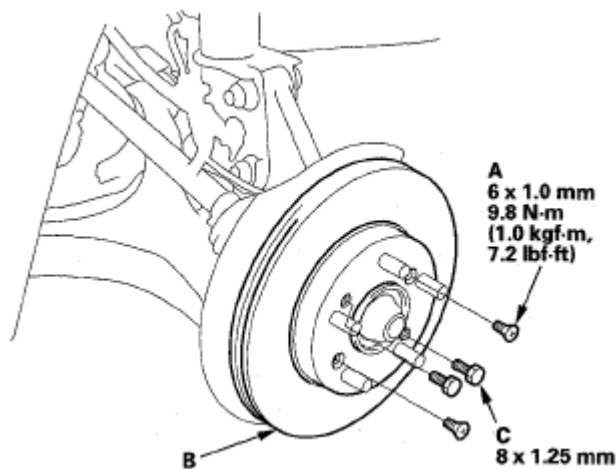


Fig. 32: Identifying Brake Disc Flat Screws And Brake Caliper Bracket Mounting Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brake disc (B) from the hub.

NOTE: If the brake disc is stuck to the hub, screw two 8 x 1.25 mm bolts (C) into the brake disc to push it away from the hub. Turn each bolt 90 degrees to prevent the brake disc from binding.

7. Install the brake disc in the reverse order of removal.

NOTE: Before installing the brake disc, clean the mating surfaces of the hub and the inside of the brake disc.

8. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheel.

FRONT BRAKE CALIPER OVERHAUL

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:

NOTE: Make sure that the caliper pins are installed correctly. Upper caliper pin A and lower caliper pin B are different. If these caliper pins are installed in the wrong location, it will cause vibration, uneven or rapid pad wear, and possibly uneven tire wear.

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- To prevent dripping brake fluid, cover disconnected hose joints with rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only clean 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 as they may not be compatible.
- Coat the pistons, piston seal grooves, and caliper bores with clean brake fluid.
- Replace all rubber parts with new ones whenever disassembled.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

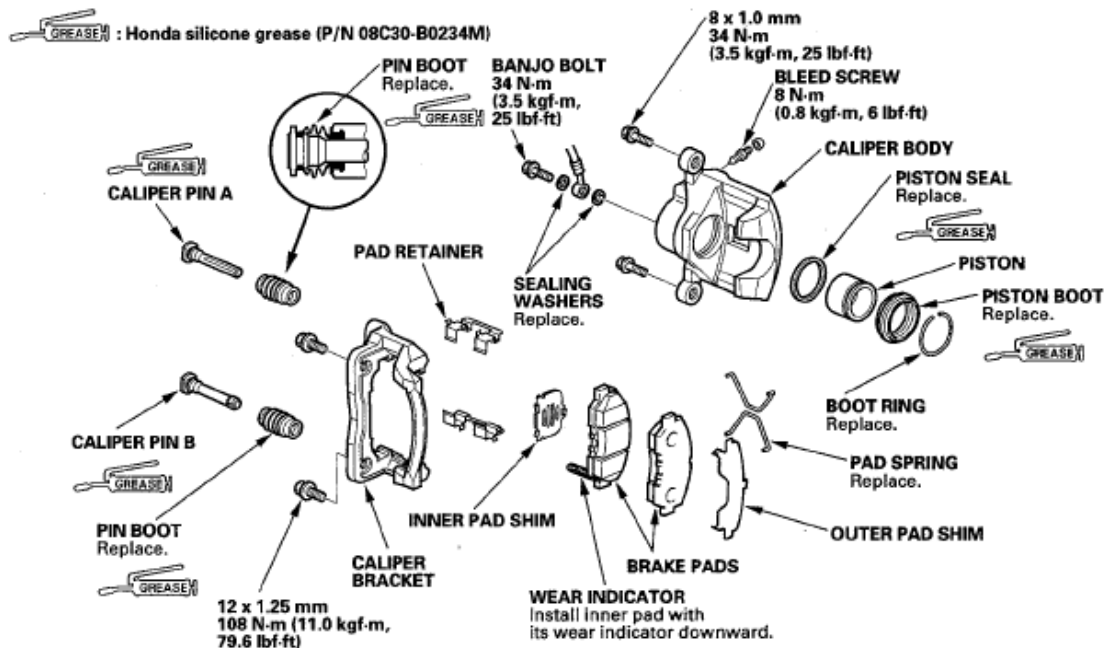


Fig. 33: Exploded View Of Front Brake Caliper With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MASTER CYLINDER REPLACEMENT

NOTE:

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- Be careful not to damage or deform the brake lines during removal and installation.
- To prevent the brake fluid from flowing, plug and cover the hose ends and joints with a shop towel or equivalent.

1. Release the engine wire harness clips on the strut brace (A), and remove the strut brace.

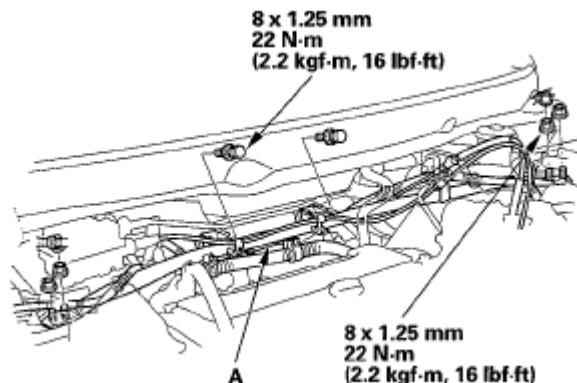


Fig. 34: Identifying Strut Brace With Engine Wire Harness Clips With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. M/T model: Remove the clutch reservoir bracket from the vehicle, and move it aside. Do not disconnect the clutch hose from the reservoir.
3. Remove the reservoir cap and brake fluid from the master cylinder reservoir with a syringe.
4. Remove the brake fluid level switch connector (A).

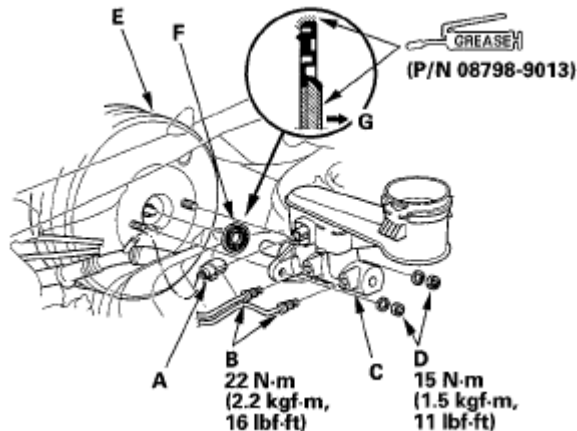


Fig. 35: Identifying Brake Fluid Level Switch Connector, Brake Lines, Master Cylinder And Master Cylinder Mounting Nuts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the brake lines (B) from the master cylinder (C). To prevent spills, cover the hose joints with rags or shop towels.
6. Remove the master cylinder mounting nuts (D) and washers.
7. Remove the master cylinder from the brake booster (E). Be careful not to bend or damage the brake lines when removing the master cylinder.
8. Remove the rod seal (F) from the master cylinder.
9. Install the master cylinder in the reverse order of removal, and note these items:
 - Replace all the rubber parts with new ones whenever the master cylinder is removed.
 - Check the pushrod clearance before installing the master cylinder, and adjust it if necessary (see **MASTER CYLINDER INSPECTION**).
 - Use a new rod seal on reassembly.
 - Coat the inner bore lip and outer circumference of the new rod seal with the Shin-Etsu silicone grease (P/N 08798-9013).
 - Install the rod seal onto the master cylinder with its grooved side (G) toward the master cylinder.
 - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).
10. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
11. Spin the wheels to check for brake drag.

MASTER CYLINDER INSPECTION

1. Inspect and note these items:

- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Do not try to disassemble the master cylinder assembly. Replace the master cylinder assembly with a new part if necessary.
- Do not allow dirt or foreign matter to contaminate the brake fluid.

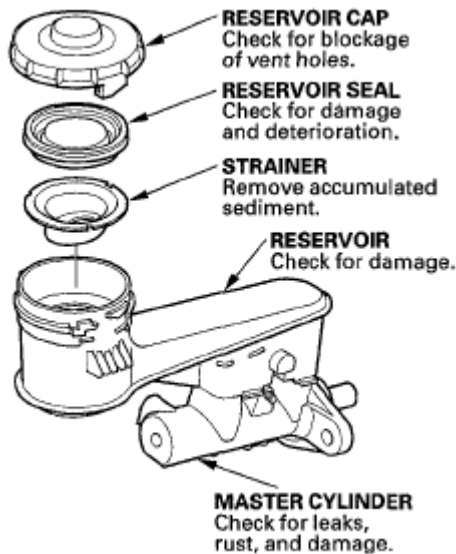


Fig. 36: Identifying Reservoir Cap, Reservoir Seal, Strainer, Reservoir And Master Cylinder
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE BOOSTER PUSHROD CLEARANCE ADJUSTMENT

Special Tools Required

Pushrod adjustment gauge 07JAG-SD40100

NOTE: Brake booster pushrod-to-piston clearance must be checked and adjustments made, if necessary, before installing the master cylinder.

1. Set the pushrod adjustment gauge (A) on the master cylinder body (B), push in the center shaft (C) until the top of it contacts the end of the secondary piston (D) by turning the adjusting nut (E).

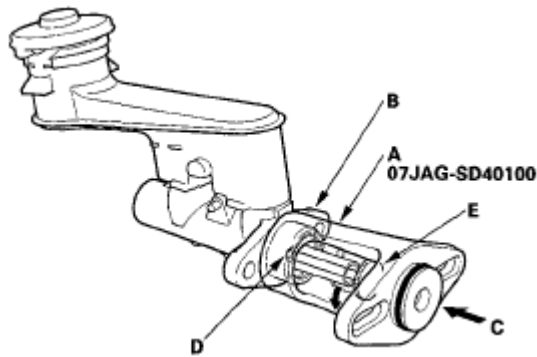


Fig. 37: Pushing Center Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Without disturbing the center shaft's position, install the pushrod adjustment gauge (A) backwards on the booster.

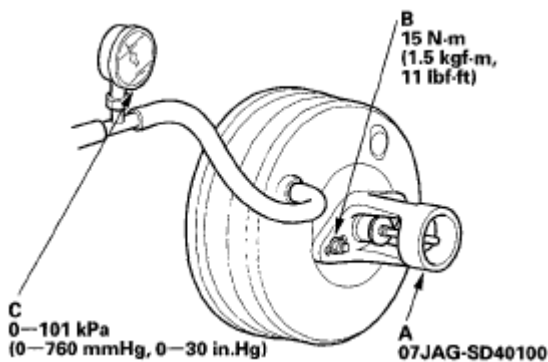


Fig. 38: Installing Pushrod Adjustment Gauge On Booster With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Install the master cylinder nuts (B), and tighten them to the specified torque.
- Connect the booster in-line with a vacuum gauge (C) 0-101 kPa (0-760 mmHg, 0-30 in.Hg) to the booster's engine vacuum supply, and maintain an engine speed that will deliver 66 kPa (500 mmHg, 20 in.Hg) vacuum.
- With a feeler gauge (A), measure the clearance between the gauge body and the adjusting nut (B) as shown.

If the clearance between the gauge body and the adjusting nut is 0.4 mm (0.02 in.), the pushrod-to-piston clearance is 0 mm. However, if the clearance between the gauge body and the adjusting nut is 0 mm, the push rod-to-piston clearance is 0.4 mm (0.02 in.) or more. Therefore it must be adjusted and rechecked.

Clearance: 0-0.4 mm (0-0.02 in.)

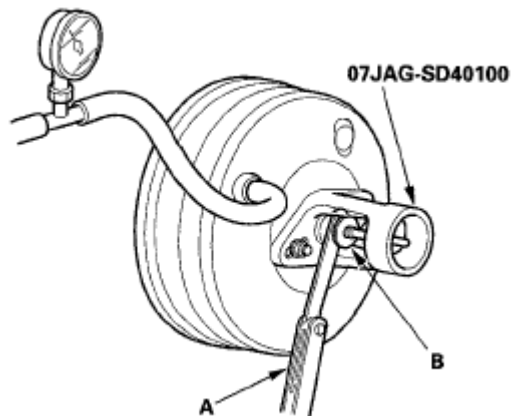


Fig. 39: Measuring Clearance Between Gauge Body And Adjusting Nut
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the clearance is incorrect, loosen the star locknut (A), and turn the adjuster (B) in or out to adjust.
 - Adjust the clearance while the specified vacuum is applied to the booster.
 - Hold the yoke (C) while adjusting.

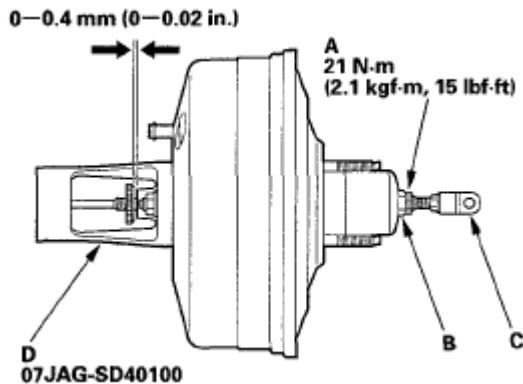


Fig. 40: Adjusting Clearance With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Tighten the star locknut securely.
8. Remove the pushrod adjustment gauge (D).
9. Check the pushrod length (A) as shown if the booster is removed. If the length is incorrect, loosen the pushrod locknut (B), and turn the yoke (C) in or out to adjust.

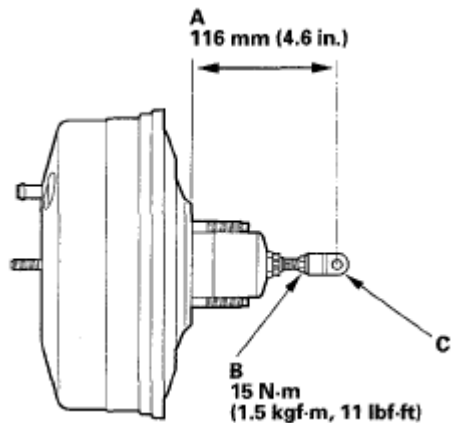


Fig. 41: Identifying Pushrod Length, Pushrod Locknut And Yoke With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the master cylinder (see MASTER CYLINDER REPLACEMENT).

BRAKE BOOSTER TEST

FUNCTIONAL TEST

1. With the engine off, press the brake pedal several times to deplete the vacuum reservoir, then press the brake pedal hard, and hold it for 15 seconds. If the brake pedal sinks, either the master cylinder is bypassing internally, or the brake system is leaking. Inspect the brake hoses and lines (see BRAKE HOSE AND LINE INSPECTION).
2. Start the engine with the brake pedal pressed. If the brake pedal sinks slightly, the vacuum booster is operating normally. If the brake pedal height does not vary, do the brake system test (see BRAKE SYSTEM INSPECTION AND TEST).

LEAK TEST

1. Press the brake pedal with the engine running, then stop the engine. The brake pedal height should not vary while pressed for 30 seconds. If the pedal height rises, go to step 6. If it does not rise, go to step 2.
2. Start the engine and let it idle for 30 seconds. Turn the ignition switch off, and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise. Does the pedal rise on each consecutive application? If it rises the booster is OK. If it does not go to step 3.
3. Disconnect the brake booster vacuum hose (A) at the booster. The check valve is built into the hose.

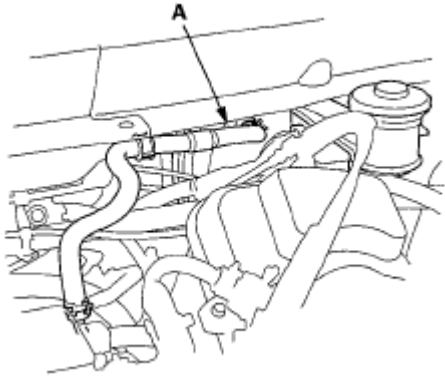


Fig. 42: Identifying Brake Booster Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Start the engine, and let it idle. There should be vacuum available. If no vacuum is available, the check valve is not working properly. Replace the brake booster vacuum hose and check valve, and retest. If vacuum is found, go to step 5.
5. With the engine off, reconnect the vacuum hose to the brake booster.
6. Start the engine, and then pinch the brake booster vacuum hose between the check valve and the booster.
7. Turn the ignition switch off, and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise.
 - If the pedal position does not vary inspect the seal between the master cylinder and booster. If the seal is OK, replace the brake booster.
 - If the pedal position varies, replace the brake booster vacuum hose/check valve assembly.

BRAKE BOOSTER REPLACEMENT

1. Remove the master cylinder (see **MASTER CYLINDER REPLACEMENT**).
2. Remove the air cleaner assembly (A).

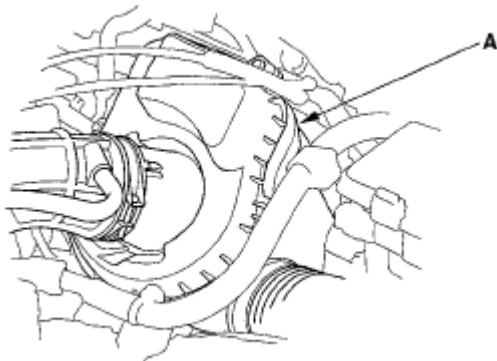


Fig. 43: Identifying Air Cleaner Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the brake booster vacuum hose (A) from the brake booster.

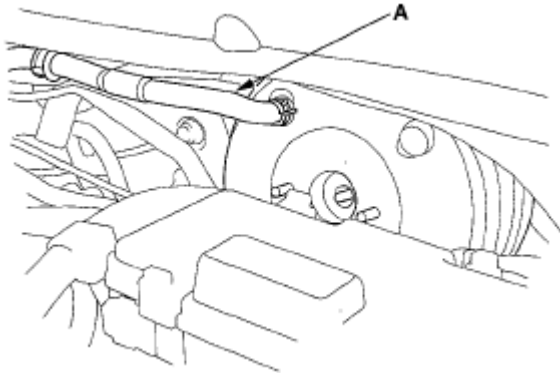


Fig. 44: Identifying Brake Booster Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the lock pin (A) and the joint pin (B), and disconnect the yoke from the brake pedal.

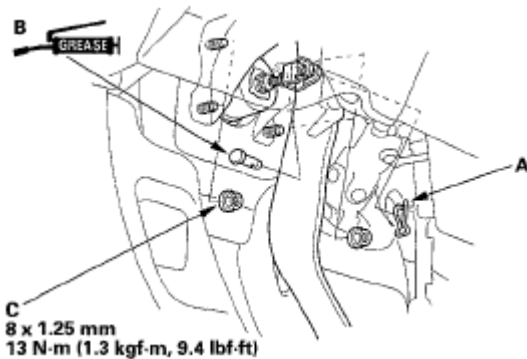


Fig. 45: Identifying Lock Pin, Joint Pin And Brake Booster Mounting Nuts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the brake booster mounting nuts (C).
6. Remove the brake booster (A) from the engine compartment.

NOTE:

- Be careful not to damage the booster surfaces and threads of the booster stud bolts.
- Be careful not to bend or damage the brake lines.

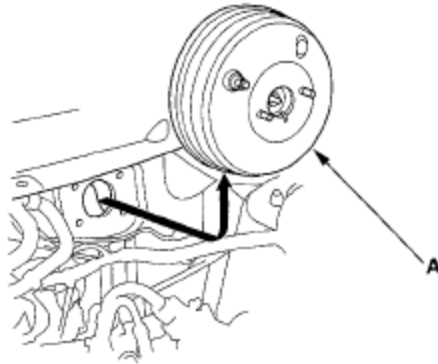


Fig. 46: Removing Brake Booster From Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the brake booster in the reverse order of removal, and note these items:
 - Adjust the pushrod clearance before installing the brake booster (see **MASTER CYLINDER INSPECTION**).
 - Install the master cylinder after installing the brake booster (see **MASTER CYLINDER REPLACEMENT**).
 - Replace the master cylinder rod seal.
 - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).
 - Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).

REAR BRAKE PAD INSPECTION AND REPLACEMENT

Special Tools Required

Brake caliper piston compressor 07AAE-SEPA101

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

INSPECTION

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Check the thickness (A) of the inner pad (B) and outer pad (C). Do not include the thickness of the

backing plate.

Brake pad thickness:

Standard: 8.6-9.7 mm (0.34-0.38 in.)

Service limit: 1.6 mm (0.06 in.)

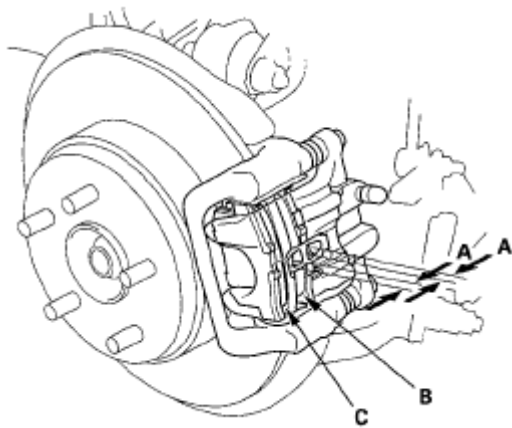


Fig. 47: Checking Brake Pad Thickness

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the brake pad thickness is less than the service limit, replace the rear brake pads as a set.
5. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.

REPLACEMENT

1. Remove some brake fluid from the master cylinder.
2. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
3. Remove the rear wheels.
4. Remove the flange bolts (A) while holding the caliper pin (B) with a wrench. Be careful not to damage the pin boot, and remove the caliper (C). Check the hose and pin boots for damage and deterioration.

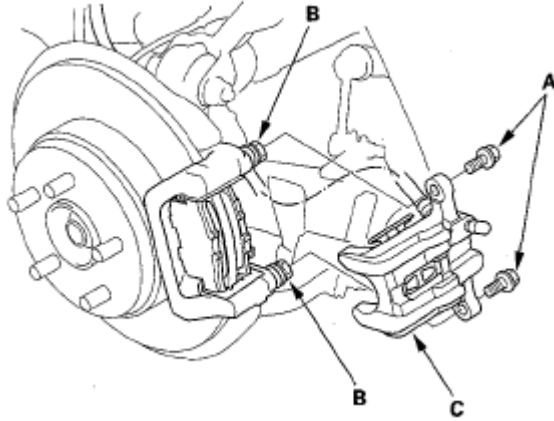


Fig. 48: Identifying Flange Bolts, Caliper Pin And Caliper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the pad shim (A) and brake pads (B).

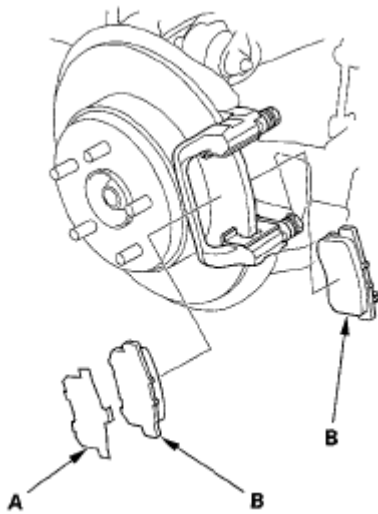


Fig. 49: Identifying Pad Shim And Brake Pads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the pad retainers (A).

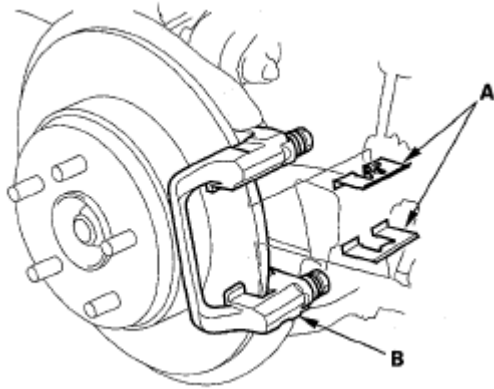


Fig. 50: Identifying Pad Retainers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks.
8. Inspect the brake disc/drum, and check for damage and cracks (see **REAR BRAKE DISC INSPECTION**).
9. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the retainers on their mating surfaces against the caliper bracket.
10. Install the pad retainers. Wipe excess assembly paste off the retainers. Keep any assembly paste off the discs and pads.
11. Mount the brake caliper piston compressor tool (A) on the caliper body (B).

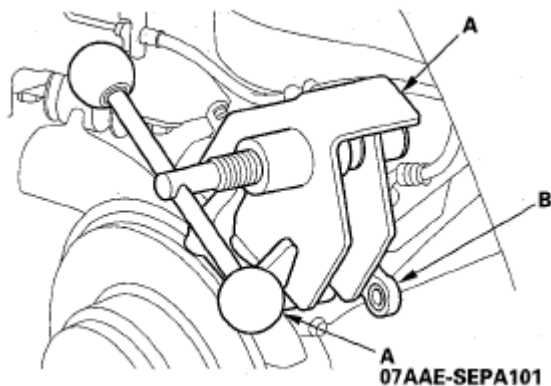


Fig. 51: Identifying Brake Caliper Piston Compressor Tool On Caliper Body

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Press in the piston with the brake caliper piston compressor so the caliper will fit over the brake pads. Make sure the piston boot is in position to prevent damaging it when installing the caliper.

NOTE: Be careful when pressing in the piston; brake fluid might overflow from the master cylinder's reservoir. If brake fluid gets on any painted surface, wash it off immediately with water.

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

13. Remove the brake caliper piston compressor tool.
14. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B) and the other areas indicated by the arrows. Wipe excess assembly paste off the pad shims and brake pads. Contaminated brake discs or brake pads reduce stopping ability. Keep grease and assembly paste off the brake discs and brake pads.

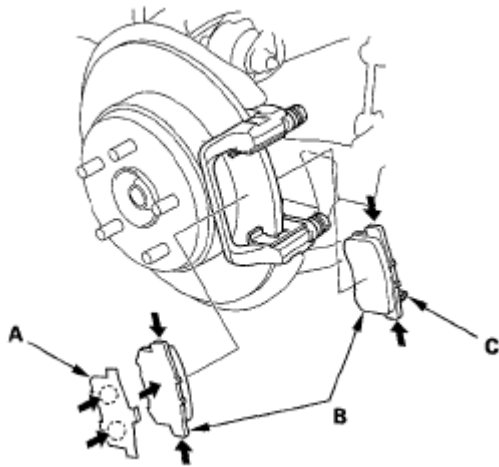


Fig. 52: Identifying Shims, Brake Pads And Wear Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the bottom inside. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a momentary loss of braking efficiency.
16. Install the caliper and the flange bolts (A), and tighten them to the specified torque while holding the caliper pin (B) with a wrench being careful not to damage the pin boots.

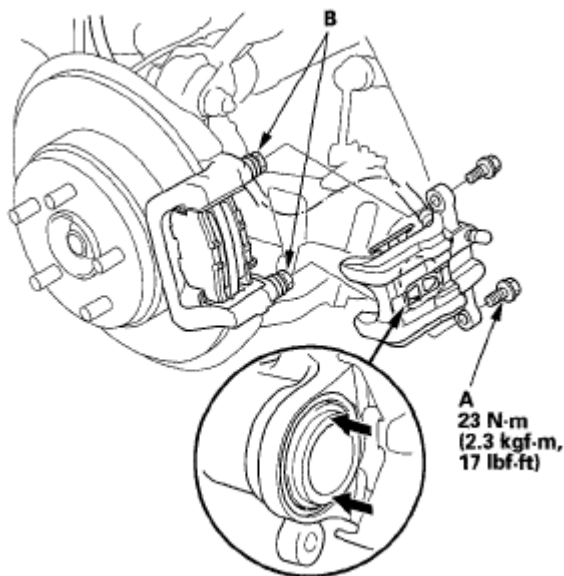


Fig. 53: Identifying Flange Bolts And Caliper Pin With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.
18. Press the brake pedal several times to make sure the brakes work.

NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

19. Add brake fluid as needed.
20. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then check for leaks (see **BRAKE HOSE AND LINE INSPECTION**).

REAR BRAKE DISC INSPECTION

RUNOUT

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Remove the brake pads (see **REAR BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Inspect the brake disc/drum surface for damage and cracks. Clean the brake disc/drum thoroughly, and remove all rust.
5. Install suitable flat washers (A) and wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc/drum securely against the hub.

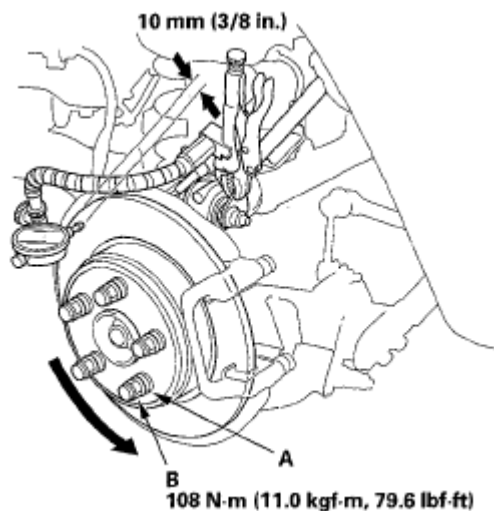


Fig. 54: Checking Rear Brake Disc Runout With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-2008 BRAKES Conventional Brake Components - Element

6. Set up the dial gauge against the brake disc/drum as shown, and measure the runout at 10 mm (3/8 in.) from the outer edge of the brake disc/drum.

Brake disc/drum runout: Service limit: 0.04 mm (0.0016 in.)

7. If the brake disc/drum is beyond the service limit, refinish the brake disc/drum with a commercially available on-car brake lathe.

Max. refinishing limit: 7.5 mm (0.30 in.)

NOTE:

- If the brake disc/drum is beyond the service limit for refinishing, replace it (see REAR BRAKE DISC REPLACEMENT).
- A new brake disc/drum should be refinished if its runout is greater than 0.04 mm (0.0016 in.).

THICKNESS AND PARALLELISM

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the rear wheels.
3. Remove the brake pads (see REAR BRAKE PAD INSPECTION AND REPLACEMENT).
4. Using a micrometer, measure the brake disc/drum thickness at eight points, about 45° apart and 10 mm (3/8 in.) in from the outer edge of the brake disc/drum. Replace the brake disc/drum if the smallest measurement is less than the max. refinishing limit.

Brake disc/drum thickness:

Standard: 8.9-9.1 mm (0.35-0.36 in.)

Max. refinishing limit: 7.5 mm (0.30 in.)

Brake disc/drum parallelism:

0.015 mm (0.0006 in.) max.

NOTE:

This is the maximum allowable difference between the thickness measurements.

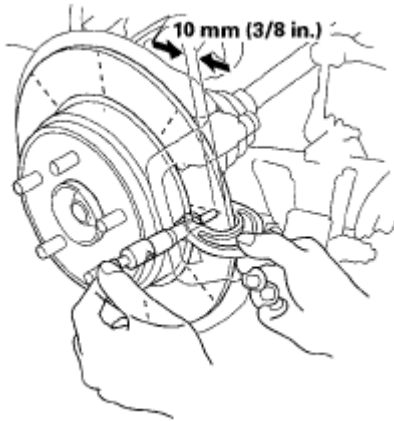


Fig. 55: Checking Brake Disc/Drum And Parallelism
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the brake disc/drum is beyond the service limit for parallelism, refinish the brake disc/drum with a commercially available on-car brake lathe.

NOTE: If the brake disc/drum is beyond the service limit for refinishing, replace it (see REAR BRAKE DISC REPLACEMENT).

REAR BRAKE DISC REPLACEMENT

NOTE: Keep any grease off the brake disc/drum and brake pads.

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the rear wheel.
3. Remove the brake hose bracket mounting bolt (A).

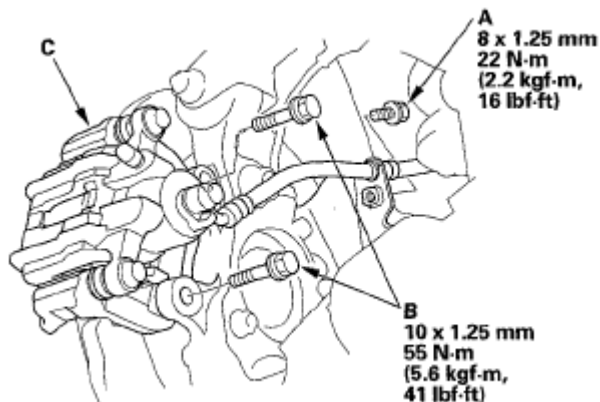


Fig. 56: Identifying Brake Hose Bracket Mounting Bolt, Brake Caliper Bracket Mounting Bolts And Caliper Assembly With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.
5. Release the parking brake.
6. Remove the brake disc/drum flat screws (A).

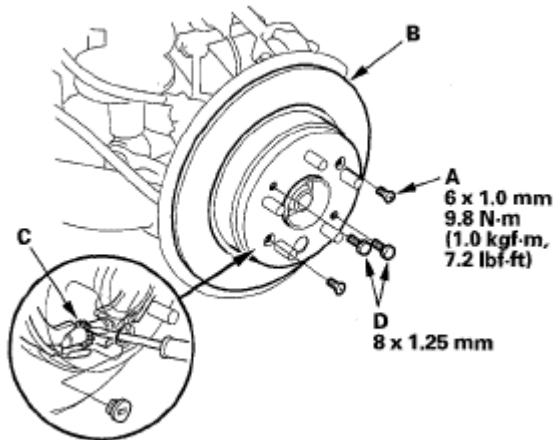


Fig. 57: Identifying Brake Disc/Drum With Brake Disc/Drum Flat Screws With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the brake disc/drum (B) from the rear hub.

NOTE:

- It may be necessary to back-off the parking brake adjuster nut (C) to remove the brake disc/drum from the rear hub (see step 7).
- If the brake disc/drum has stuck to the rear hub, screw two 8 x 1.25 mm bolts (D) into the brake disc/drum to push it away from the rear hub. Turn each bolt 90 degrees to prevent the brake disc/drum from binding.
- After installation, check the parking brake, and adjust it necessary (see PEDAL FREE PLAY).

8. Install the brake disc/drum in the reverse order of removal.

NOTE:

Before installing the brake disc/drum, clean the mating surfaces of the rear hub and the inside of the brake disc/drum.

9. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheel.

REAR BRAKE CALIPER OVERHAUL

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition,

could be hazardous to your health.

- **Avoid breathing dust particles.**
- **Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.**

Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- To prevent dripping brake fluid, cover disconnected hose joints with rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only clean 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 as they may not be compatible.
- Coat the pistons, piston seal grooves, and caliper bores with clean brake fluid.
- Replace all rubber parts with new ones whenever disassembled.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

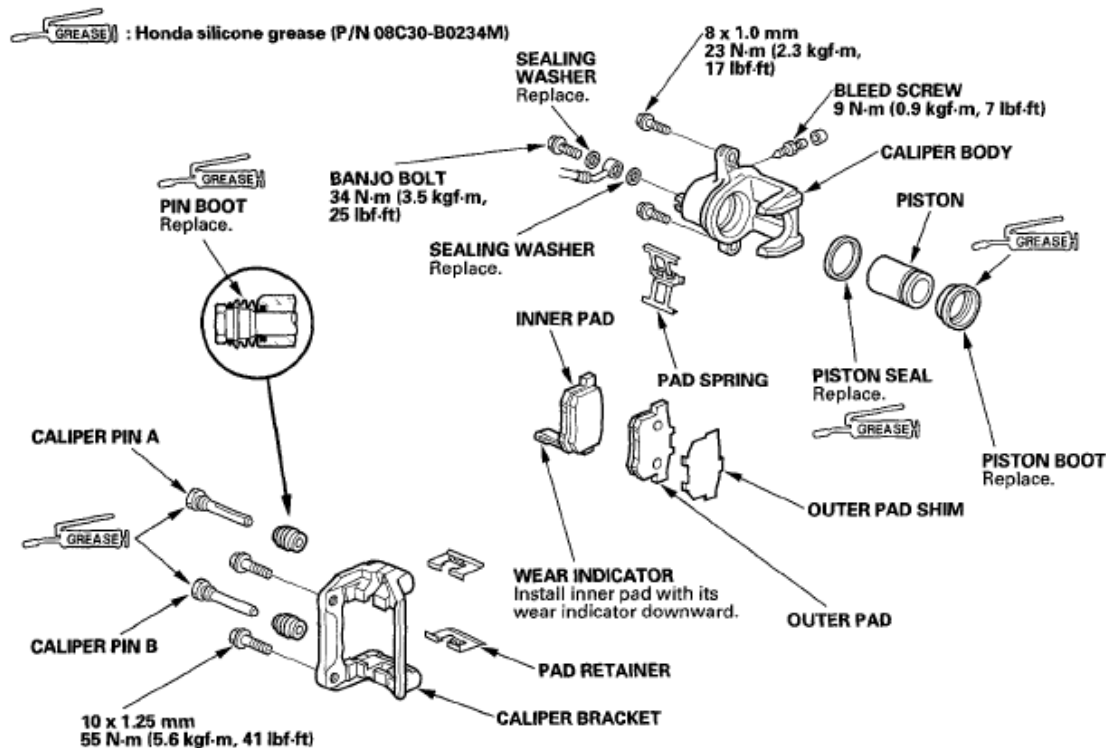


Fig. 58: Exploded View Of Rear Brake Caliper With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE INSPECTION

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Release the parking brake, and remove the rear brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

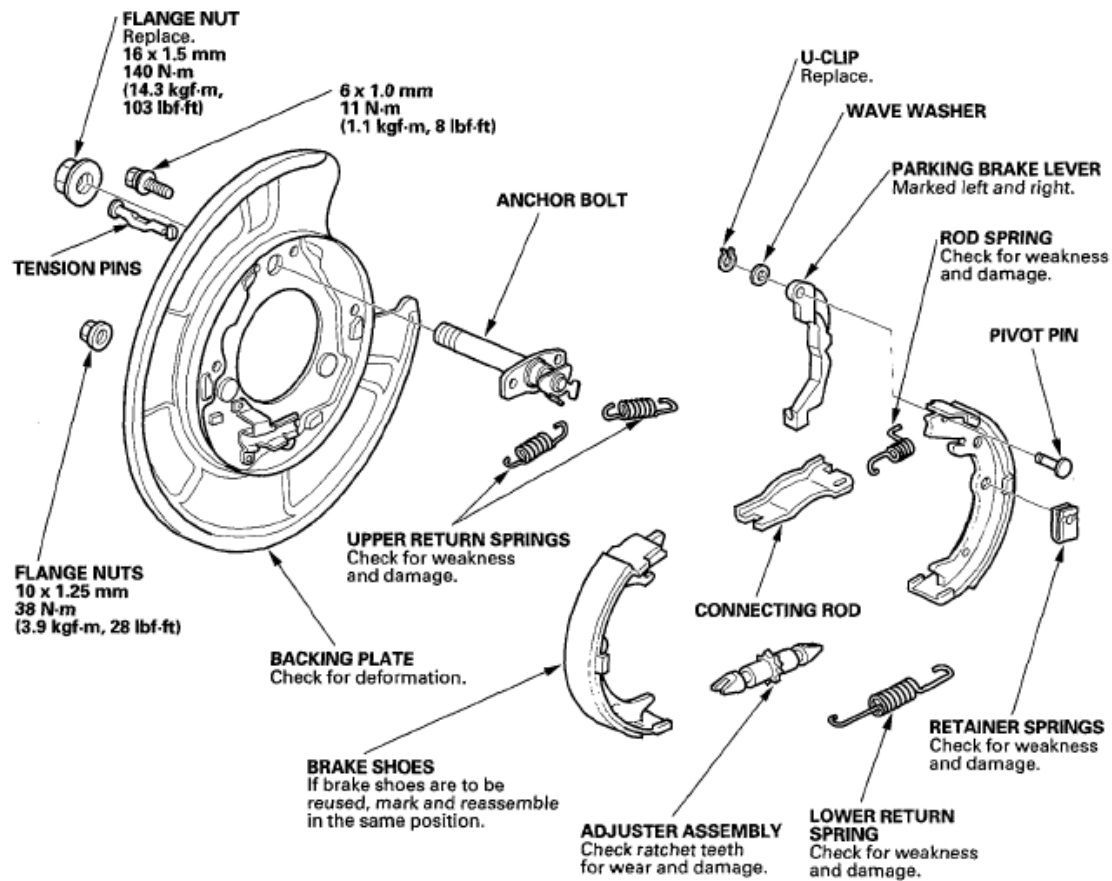


Fig. 59: Exploded View Of Parking Brake With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the parking brake linings (A) for cracking, glazing, wear, and contamination.

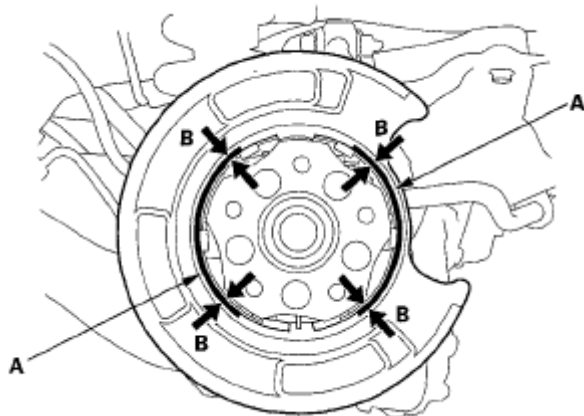


Fig. 60: Checking Parking Brake Linings For Cracking, Glazing, Wear, And Contamination
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the parking brake lining thickness (B). Measurement does not include brake shoe thickness.

Parking brake lining thickness:**Standard: 2.5 mm (0.098 in.)****Service limit: 1.0 mm (0.04 in.)**

6. If the parking brake lining thickness is less than the service limit, replace all of the parking brake shoes as a set (see **PARKING BRAKE SHOE REPLACEMENT**).
7. Check the bearings in the wheel bearing unit for smooth operation. If it requires servicing, replace the wheel bearing unit (see **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).
8. Measure the inside diameter of the parking brake drum with inside vernier calipers.

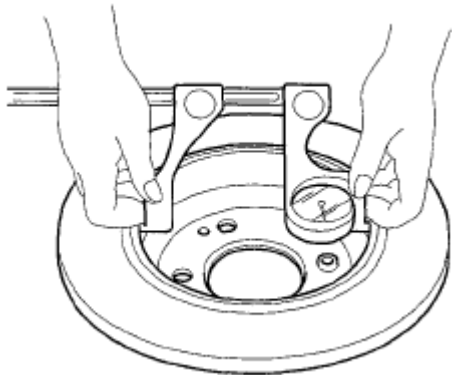
Parking brake drum inside diameter:**Standard: 169.9-170.0 mm (6.689-6.693 in.)****Service limit: 171.0 mm (6.732 in.)**

Fig. 61: Measuring Inside Diameter Of Parking Brake Drum With Inside Vernier Calipers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the inside diameter of the parking brake drum is more than service limit, replace the brake disc/drum.
10. Check the parking brake drum for scoring, grooves, and cracks.
11. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.

PARKING BRAKE SHOE REPLACEMENT

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

DISASSEMBLY

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Release the parking brake, and remove the rear brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).
4. Disconnect and remove the upper return springs (A).

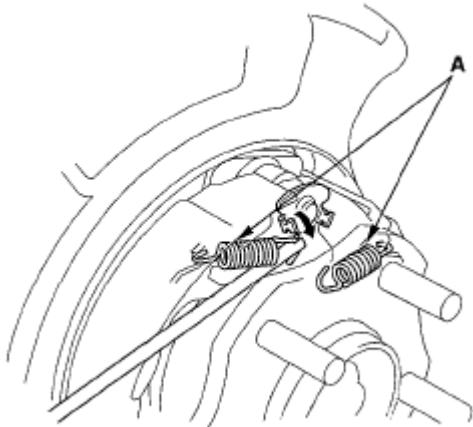


Fig. 62: Disconnecting Upper Return Springs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the tension pins (A) by pushing the respective retainer spring (B) and turning the pin.

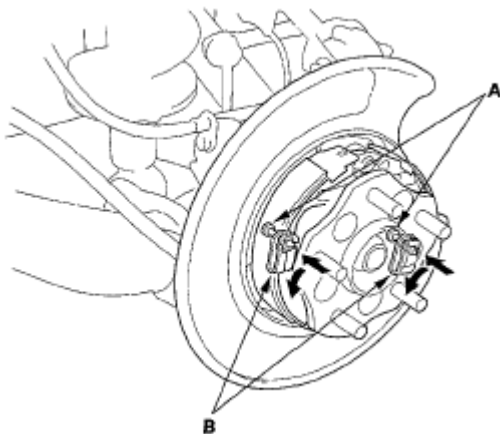


Fig. 63: Removing Tension Pins By Pushing Respective Retainer Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the rod spring (A), and remove the connecting rod (B).

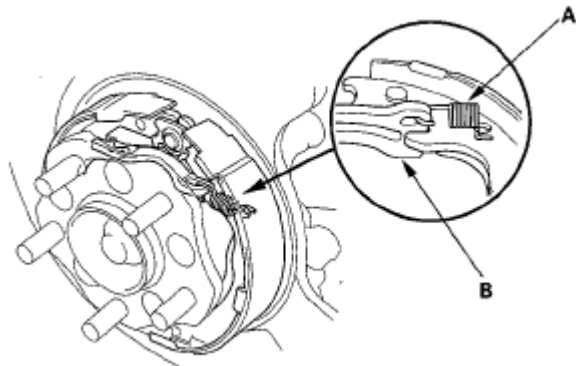


Fig. 64: Identifying Rod Spring And Connecting Rod
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Lower the parking brake shoe assembly.
8. Remove the forward brake shoe (A) and the adjuster assembly (B) by removing the lower return spring (C).

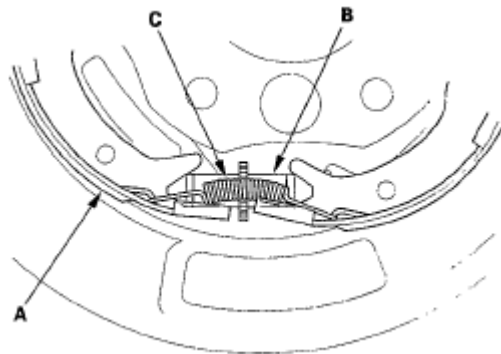


Fig. 65: Identifying Forward Brake Shoe, Adjuster Assembly And Lower Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the rearward brake shoe by disconnecting the parking brake cable (A) from the parking brake lever (B).

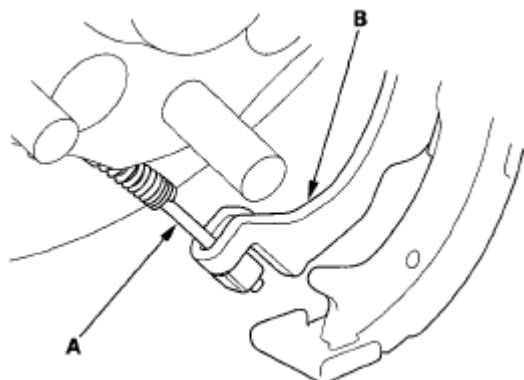


Fig. 66: Identifying Parking Brake Cable And Parking Brake Lever
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the U-clip (A), wave washer (B), parking brake lever (C), and pivot pin (D) from the brake shoe (E).

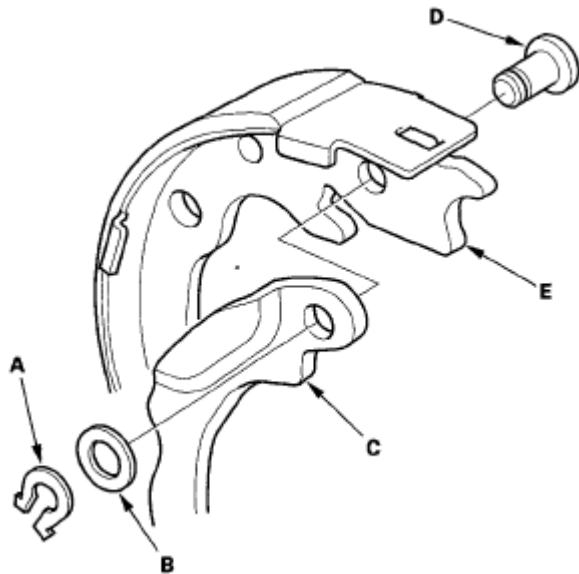


Fig. 67: Identifying U-Clip, Wave Washer, Parking Brake Lever, Pivot Pin And Brake Shoe
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

1. Apply a thin coat of Molycote 44MA grease to the sliding surface of the pivot pin (A), and insert the pin into the rearward brake shoe (B) from the outside.

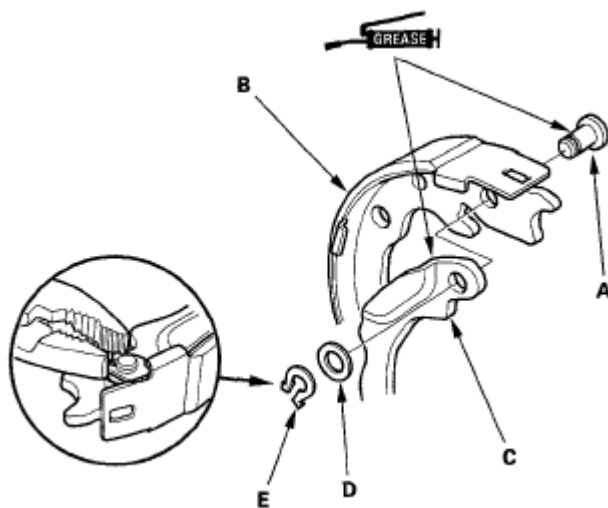


Fig. 68: Identifying Pivot Pin And Rearward Brake Shoe

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parking brake lever (C) and wave washer (D) on the pivot pin, and secure with a new U-clip (E).
 - Install the wave washer with its convex side facing out.
 - Pinch the U-clip securely to prevent the pivot pin from coming out of the brake shoe.
3. Connect the parking brake cable (A) to the parking brake lever (B). Apply silicone grease to the cable contact surface (C) on the backing plate.

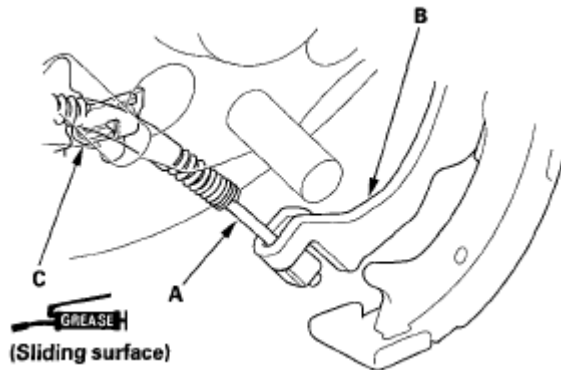
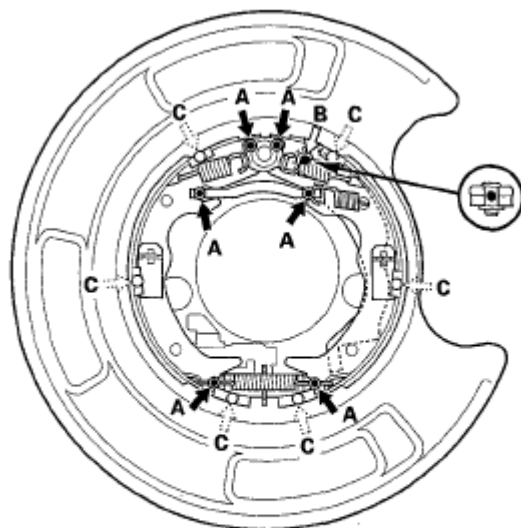


Fig. 69: Identifying Parking Brake Cable, Parking Brake Lever And Cable Contact Surface
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply a thin coat of Molycote 44MA grease to the shoe ends and connecting rod ends (A), sliding surfaces (B), and opposite edges of the parking brake shoe (C) as shown. Wipe off any excess. Keep grease off the brake linings.



Greasing symbols:

- ➔● Brake shoe ends and connecting rod ends
- ⊖○ Opposite edge of the shoe
- ⇄● Sliding surface

Fig. 70: Applying Molycote Grease To Shoe Ends And Connecting Rod Ends, Sliding Surfaces And Edges Of Parking Brake Shoe

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Clean the threaded portions of the clevis A, and coat the threads of the clevis with grease. Clean the sliding surface of the clevis B, and coat the sliding surface with multipurpose grease. Install the clevis A and B on the adjuster nut (C), and shorten the clevis A by turning the adjuster.

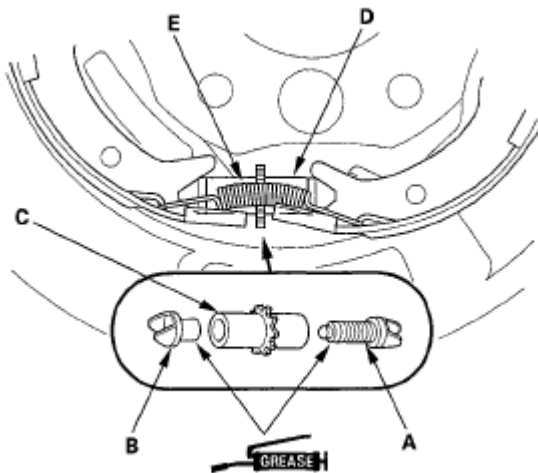


Fig. 71: Cleaning Threaded Portions Of Clevis

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Install the brake shoe adjuster assembly (D), and hook the lower return spring (E) on the parking brake shoes.
- Hook the rod spring (A) to the connecting rod (B) first with the spring end (C) pointing downward. Then hook the rod spring to the parking brake shoe, and install the connecting rod on the parking brake shoes.

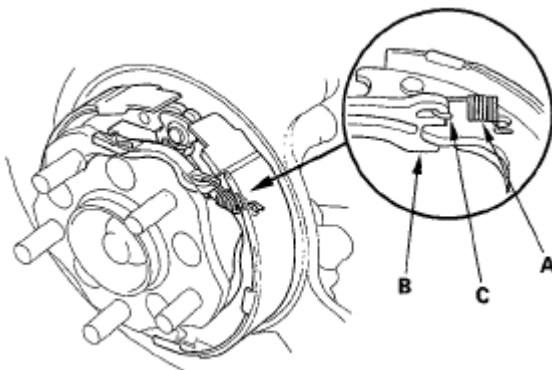


Fig. 72: Identifying Rod Spring, Connecting Rod And Spring End

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Install the tension pins (A) and retainer springs (B). Make sure the tension pin does not contact the parking brake lever.

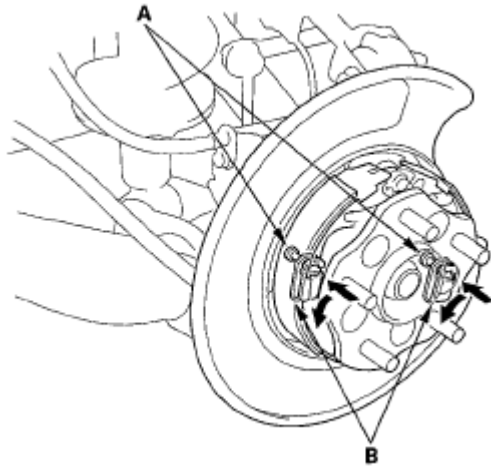


Fig. 73: Installing Tension Pins And Retainer Springs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the upper return springs (A).

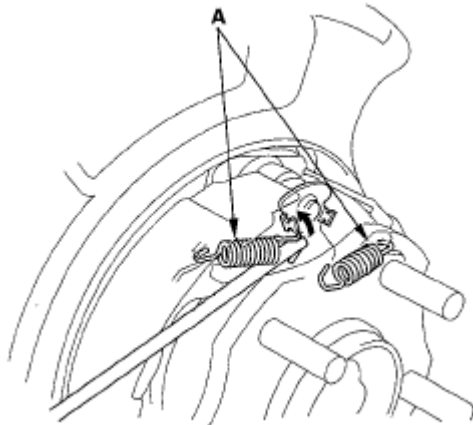


Fig. 74: Installing Upper Return Springs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the rear brake disc/drum and rear brake caliper bracket in the reverse order of removal.
11. Do the major adjustment for the parking brake (see **MAJOR ADJUSTMENT (TO BE DONE WHEN REPLACING PARKING BRAKE SHOES AND AFTER LINING SURFACE BREAK-IN)**).

PARKING BRAKE SHOE LINING BREAK-IN

WARNING: Do this operation in a safe area.

NOTE:

- Do the brake linings surface brake-in when replacing shoes with new

linings and/or new rear brake disc/drum.

- Check the number of parking brake lever clicks. Adjust the parking brake before lining surface brake-in (see PEDAL FREE PLAY).

1. Park the vehicle on a firm, level surface.
2. Release the parking brake lever.
3. Pull the parking brake lever 2 to 4 clicks.
4. Drive the vehicle for 1/4 mile (400 m) at about 31 mph (50 km/h).
5. Stop the vehicle, and release the parking brake lever for 5-10 minutes to allow the brake disc/drum to cool.
6. Repeat steps 3 through 5 three more times.
7. Check the parking brake lever adjustment (see PEDAL FREE PLAY).

BRAKE PEDAL REPLACEMENT

1. Disconnect the brake pedal position switch connector (A).

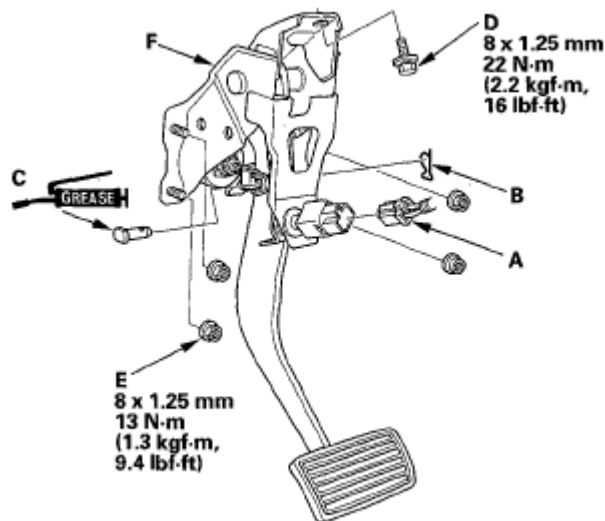


Fig. 75: Identifying Brake Pedal Position Switch Connector, Lock Pin, Joint Pin And Brake Pedal Bracket Mounting Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the lock pin (B) and joint pin (C).
3. Remove the brake pedal bracket mounting bolt (D) and brake booster mounting nuts (E).
4. Remove the brake pedal with bracket (F).
5. Install in the reverse order of removal.
6. Do the brake pedal and brake pedal position switch adjustment (see BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT).

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

BRAKE HOSE AND LINE INSPECTION

1. Inspect the brake hoses for damage, deterioration, leaks, interference, and twisting.
2. Check the brake lines for damage, rusting, and leaks. Also check for bent brake lines.
3. Check for leaks at hose and line joints and connections, and retighten if necessary.
4. Check the master cylinder and VSA modulator-control unit (if equipped) for damage and leaks.

| Connection Point | Component | Connected to | Specified Torque Value | Note |
|------------------|----------------------------|------------------------|-------------------------------|------------|
| A | Front brake caliper | Brake hose | 34 N·m (3.5 kgf·m, 25 lbf·ft) | Banjo bolt |
| | | Bleed screw | 8 N·m (0.8 kgf·m, 6 lbf·ft) | |
| B | Rear brake caliper | Brake hose | 34 N·m (3.5 kgf·m, 25 lbf·ft) | Banjo bolt |
| | | Bleed screw | 9 N·m (0.9 kgf·m, 7 lbf·ft) | |
| C | Brake hose | Brake line | 15 N·m (1.5 kgf·m, 11 lbf·ft) | Flare nut |
| D | Master cylinder | Brake line | 22 N·m (2.2 kgf·m, 16 lbf·ft) | Flare nut |
| E | VSA modulator-control unit | Brake line (12 mm nut) | 22 N·m (2.2 kgf·m, 16 lbf·ft) | Flare nut |
| | | Brake line (10 mm nut) | 15 N·m (1.5 kgf·m, 11 lbf·ft) | Flare nut |

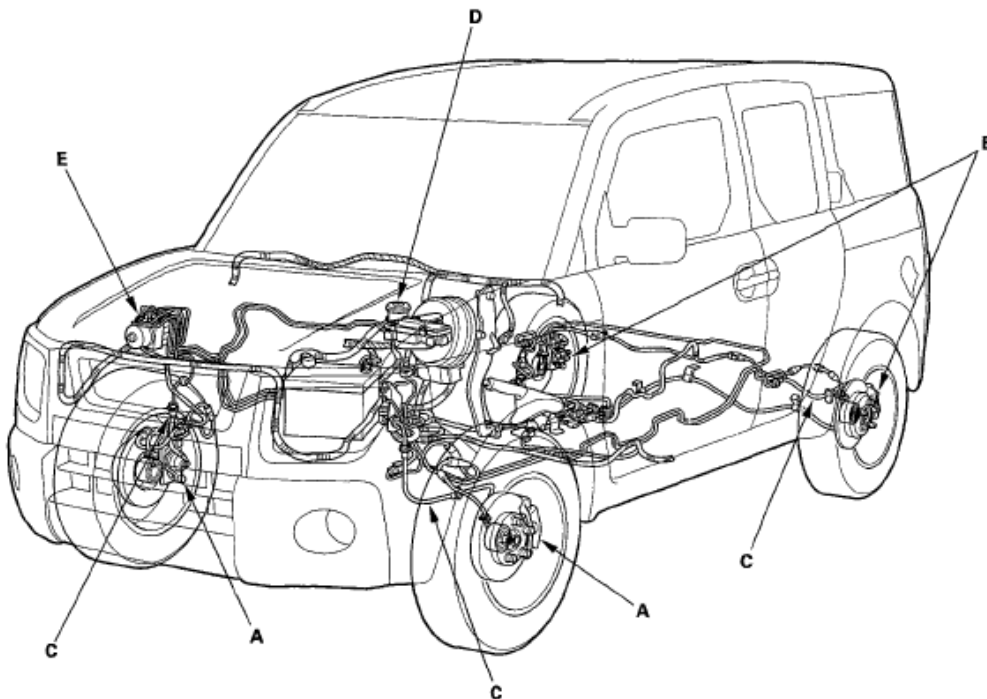


Fig. 76: Identifying Brake Hose And Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE HOSE REPLACEMENT

NOTE:

- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones whenever specified to do so.

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- To prevent the brake fluid from flowing, plug and cover the hose ends and joints with a shop towel or equivalent material.

1. Remove the wheel.
2. Disconnect the brake hose (A) from the brake line (B) using a 10 mm flare-nut wrench (C).

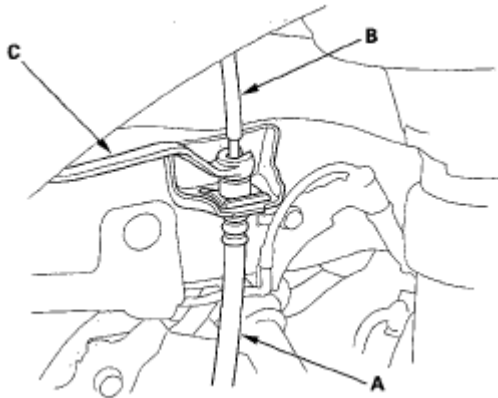


Fig. 77: Disconnecting Brake Hose From Brake Line Using Flare-Nut Wrench
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the flange bolt (A), and remove the brake hose brackets from the damper.

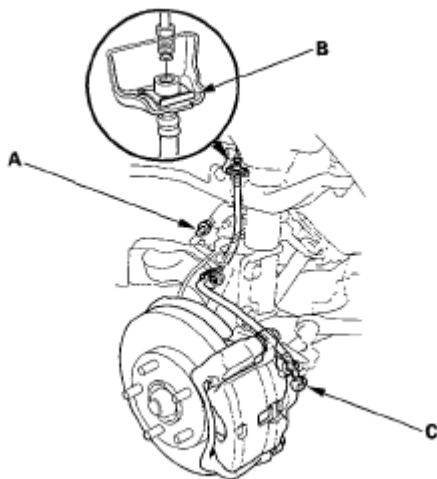


Fig. 78: Removing Flange Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the hose clip (B).
5. Remove the banjo bolt (C), and remove the brake hose from the caliper.
6. Install the brake hose bracket (A) on the damper with the flange bolt (B) first, then connect the brake hose

to the caliper with the banjo bolt (C) and new sealing washers (D).

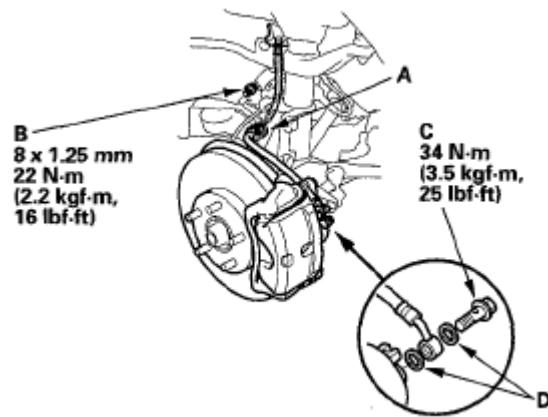


Fig. 79: Identifying Brake Hose Bracket, Flange Bolt, Banjo Bolt And Sealing Washers With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the brake hose onto the brake hose bracket on the body with a new hose clip (A).

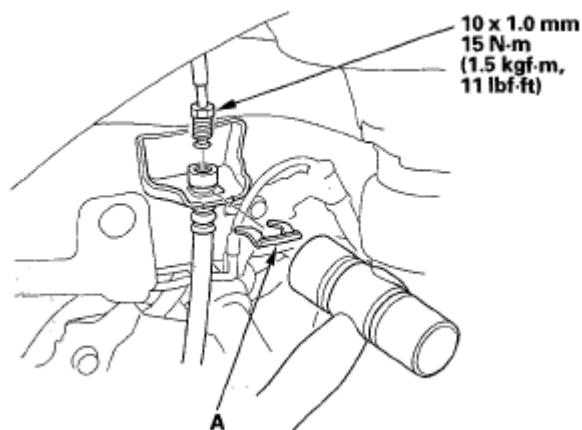


Fig. 80: Identifying Hose Clip With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the brake line to the brake hose.
9. After installing the brake hose, bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
10. Do the following checks:
 - Check the brake hose and line joint for leaks, and tighten if necessary.
 - Check the brake hoses for interference and twisting.
11. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the wheel.

PARKING BRAKE CABLE REPLACEMENT

2007 Honda Element EX

2007-2008 BRAKES Conventional Brake Components - Element

EXPLODED VIEW

Except SC model

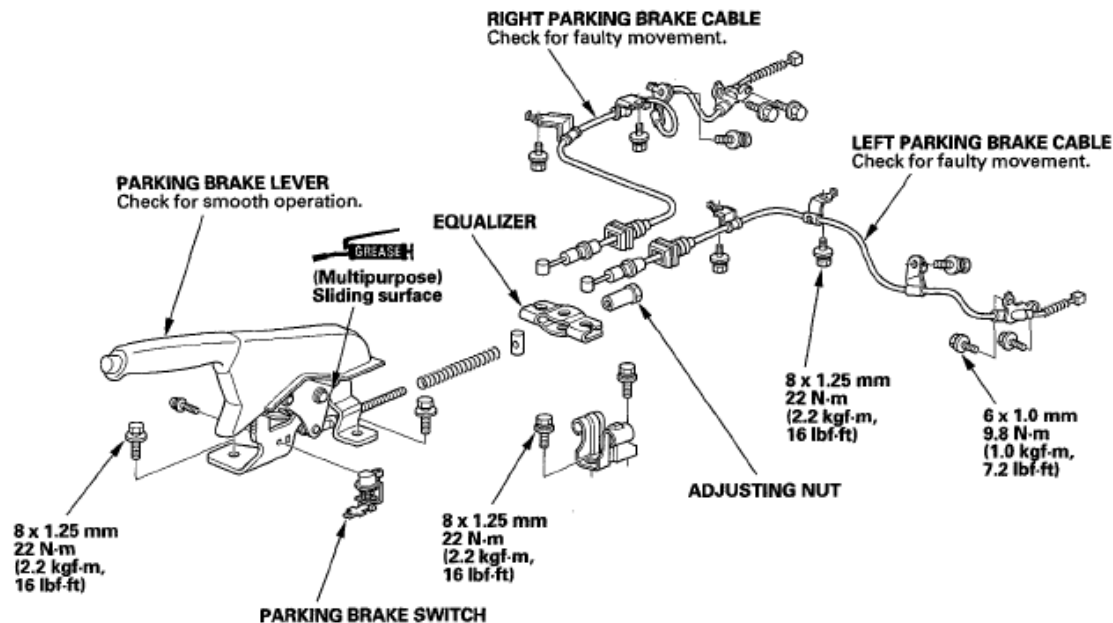


Fig. 81: Exploded View Of Parking Brake Cable - Except SC Model With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXPLODED VIEW

SC model

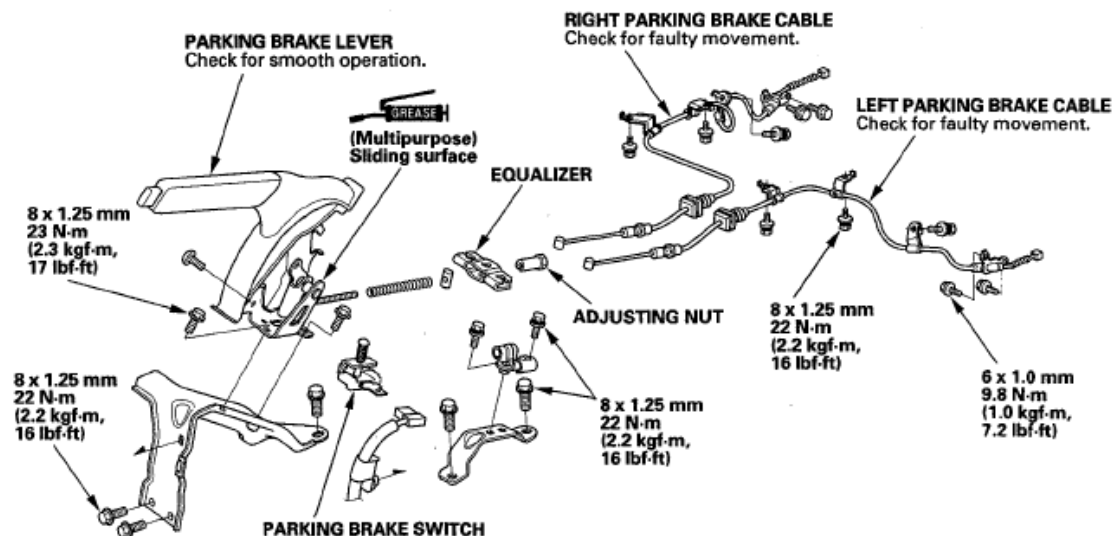


Fig. 82: Exploded View Of Parking Brake Cable - SC Model With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- The parking brake cables must not be bent or distorted. This will lead to stiff operation and premature failure.
- Refer to the EXPLODED VIEW as needed during this procedure.

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the rear wheels.
3. Release the parking brake lever fully.
4. Except SC model: Remove the center console (see LX, EX MODELS). SC model: Remove the lid from the center console.
5. Loosen the parking brake cable adjusting nut (A) in the equalizer, and disconnect the parking brake cable ends (B) from the equalizer.

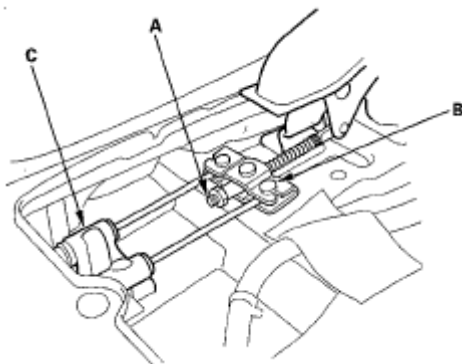
Except SC model

Fig. 83: Identifying Parking Brake Cable Adjusting Nut, Parking Brake Cable Ends And Parking Brake Cable Ends - Except SC Model

Courtesy of AMERICAN HONDA MOTOR CO., INC.

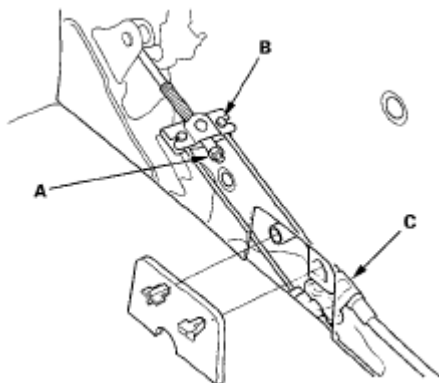
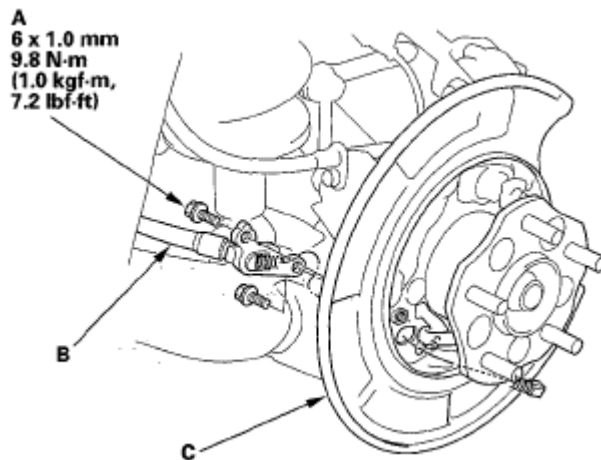
SC model

Fig. 84: Identifying Parking Brake Cable Adjusting Nut, Parking Brake Cable Ends And Parking

Brake Cable Ends - SC Model

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the cable guide base (C).
7. Remove the rear brake shoe, and disconnect the parking brake cable from the parking brake lever (see **PARKING BRAKE SHOE REPLACEMENT**).
8. Remove the flange bolts (A) and parking brake cable (B) from the backing plate (C).

**Fig. 85: Identifying Flange Bolts, Parking Brake Cable And Backing Plate With Torque Specification**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Reinstall the parking brake cable in the reverse order of removal, and note these items:
 - Be careful not to bend or distort the cable.
 - Connect the parking brake cable to the parking brake lever, and install the brake shoes and disc/drum (see **PARKING BRAKE SHOE REPLACEMENT**).
 - Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.
 - Do the parking brake adjustment (see **PEDAL FREE PLAY**). Apply the parking brake firmly 10 times then adjust it again.