

Brakes

Conventional Brake Components

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ABS (Anti-lock Brake System)

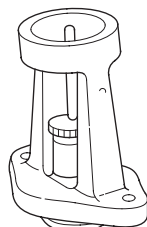
Components	19-29
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Conventional Brake Components

Special Tools

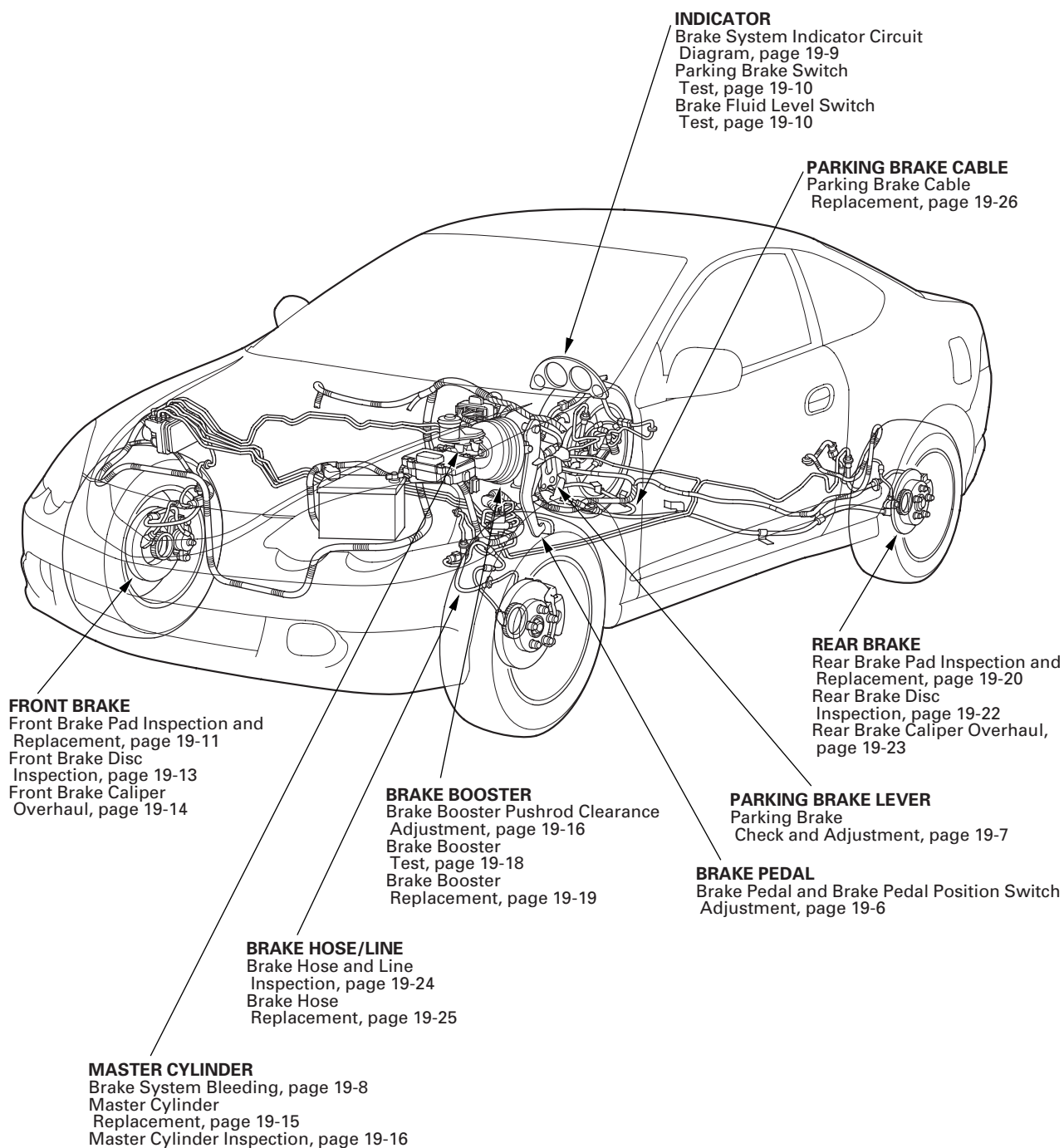
Ref. No.	Tool Number	Description	Qty
①	07JAG-SD40100	Pushrod Adjustment Gauge	1



①



Component Location Index



Conventional Brake Components

Brake System Inspection and Test

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

Component Inspections:

Component	Procedure	Also check for:
Master Cylinder	Look for damage or signs of fluid leakage at: • Reservoir or reservoir grommets • Line joints • Between master cylinder and booster	Bulging seal at reservoir cap. This is a sign of fluid contamination.
Brake Hoses	Look for damage or signs of fluid leakage at: • 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: • Piston seal • Banjo bolt connections • Bleed screw	Seized or sticking caliper pins.
ABS Modulator-Control Unit	Look for damage or signs of fluid leakage at: • Line joints • Modulator-control unit	

Brake System Test

Brake pedal sinks/fades when braking

1. Start the engine, and let it warm up to operating temperature.
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 in Neutral, press and hold the brake pedal lightly (about the same pressure needed to keep an A/T-equipped car from creeping), then release the parking brake.
4. While still holding the brake pedal, hook the end of the tape measure behind it. Then pull the tape up to the steering wheel, noting where the tape measure lines up with the reference mark you made on the masking tape.
5. Apply steady pressure to the brake pedal for 3 minutes.
6. Watch the tape measure.
 - If it moves less than 10 mm (3/8 in.), the master cylinder is OK.
 - If it moves more than 10 mm (3/8 in.), replace the master cylinder.

NOTE: If the brake pedal sinks more than 10 mm (3/8 in.) in 3 minutes, the master cylinder is faulty. A slight change in pedal height when the A/C compressor cycles on and off is normal. (The A/C compressor load changes the vacuum available to the brake booster.)



Symptom Troubleshooting

Rapid brake pad wear, vehicle vibration (after a long drive), or high hard brake pedal

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 the pad wear, high pedal, or vehicle vibration. ■

3. Turn the engine off, pump the brake pedal 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 page 19-19). ■

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 page 19-6). ■

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—Replace the master cylinder (see page 19-15). ■

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—Disassemble and repair the caliper on the wheel(s) with brake drag. ■

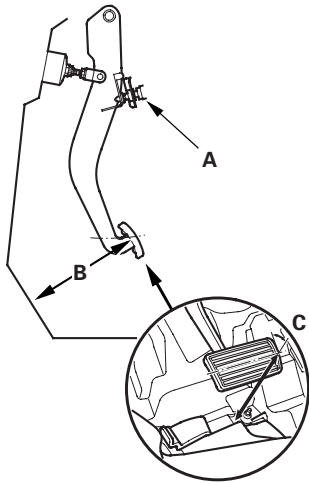
NO—Look for and replace any damaged brake lines. If all brake lines are OK, replace the ABS modulator-control unit. ■

Conventional Brake Components

Brake Pedal and Brake Pedal Position Switch Adjustment

Pedal Height

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



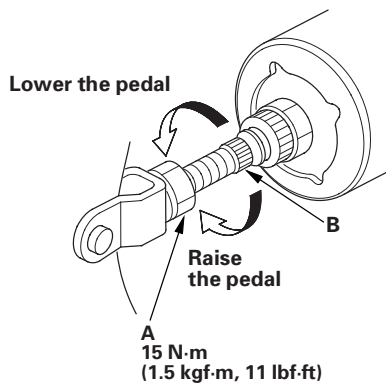
2. Lift up the carpet. At the insulator cutout, measure the pedal height (B) from the middle of the right side of the pedal pad (C).

Standard pedal height (with carpet removed):

M/T: 180 mm (7 1/16 in.)

A/T: 183 mm (7 3/16 in.)

3. Loosen the pushrod locknut (A), and screw the pushrod in or out on the knurled area (B) of the pushrod 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.

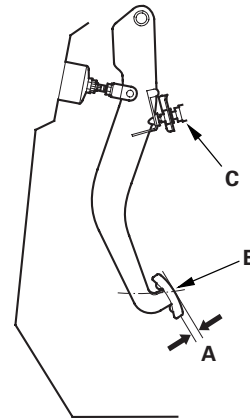


4. Spin the wheels to check for brake drag.

Pedal Free Play

1. With the engine stopped, inspect the pedal free play (A) on the pedal pad (B) by pushing the brake pedal by hand.

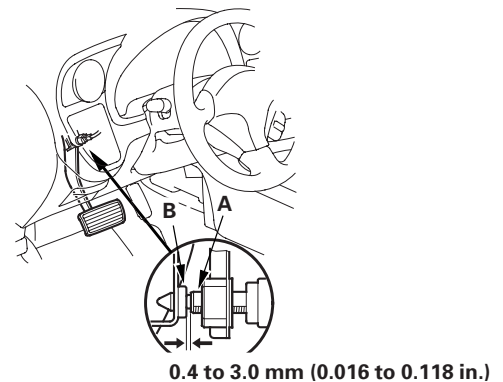
Free play: 1—5 mm (1/16—3/16 in.)



2. If the pedal free play is out of specification, adjust the brake pedal position switch (C). If the pedal free play is insufficient, it may result in brake drag.

Brake Pedal Position Switch Clearance

1. Push in the brake pedal position switch until its plunger is fully pressed (threaded end (A) touching the pad (B) on the pedal arm). Then, turn the brake pedal position switch 45° clockwise to lock it. The gap between the brake pedal position switch and the pad is automatically adjusted to 0.4 to 3.0 mm (0.016 to 0.118 in.) by locking the switch. Make sure the brake lights go off when the pedal is released.



2. Check the brake pedal free play.

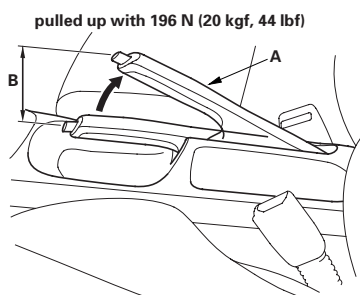


Parking Brake Check and Adjustment

Check

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: 7 to 9

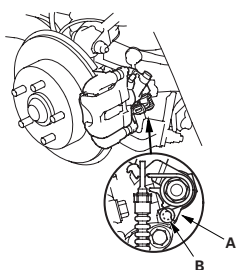


2. Adjust the parking brake if the lever clicks are not within the specification.

Adjustment

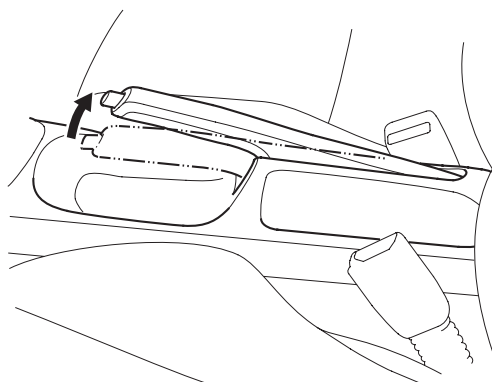
1. Release the parking brake lever fully.
2. Loosen the parking brake adjusting nut, start the engine, and press the brake pedal several times to set the self-adjusting brake before adjusting the parking brake.
3. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see page 1-12).
4. Remove the rear wheels.
5. Make sure the parking brake arm (A) on the rear brake caliper contacts the brake caliper pin (B).

NOTE: The parking brake arm will only contact the brake caliper pin when the parking brake adjusting nut is loosened.

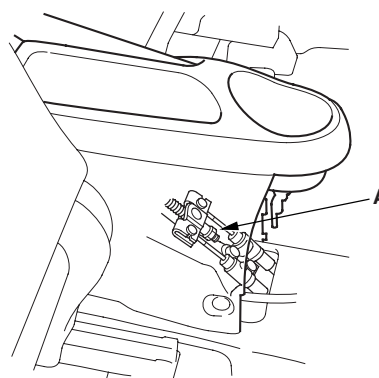


6. Remove the center console rear cover (see page 20-62).

7. Pull the parking brake lever up one click.



8. Tighten the adjusting nut (A) until the parking brakes drag slightly when the rear wheels are turned.



9. Release the parking brake lever fully, and check that the parking brakes do not drag when the rear wheels are turned. Readjust if necessary.
10. Make sure the parking brakes are fully applied when the parking brake lever is pulled up fully.
11. Reinstall the center console rear cover (see page 20-62).

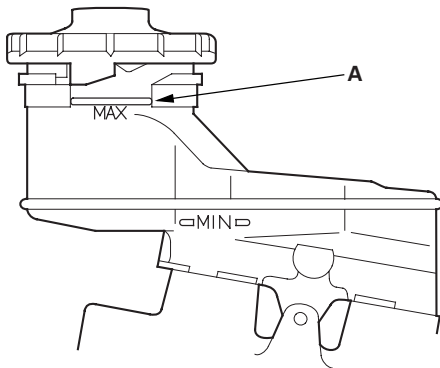
Conventional Brake Components

Brake System Bleeding

NOTE:

- Do not reuse the drained fluid. Use only clean ACURA DOT 3 Brake Fluid from an unopened container. Using a non-Acura 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 on the master cylinder must be at the MAX (upper) level mark at the start of the bleeding procedure and checked after bleeding each brake caliper. Add fluid as required.

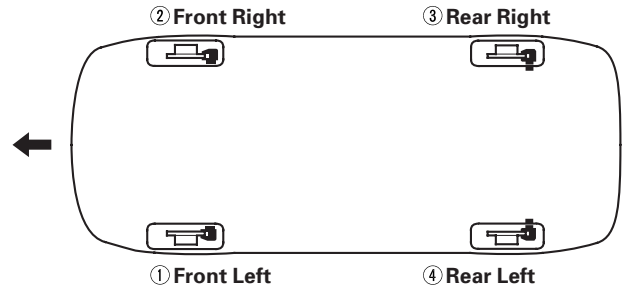
1. Make sure the brake fluid level in the reservoir is at the MAX (upper) level line (A).



2. Slide a piece of clear plastic hose over the first bleed screw, and submerge the other end in a container of new brake fluid.
3. Have someone slowly pump the brake pedal several times, then apply steady pressure.
4. Starting at the left-front, loosen the brake bleed screw to allow air to escape from the system. Then tighten the bleed screw securely.

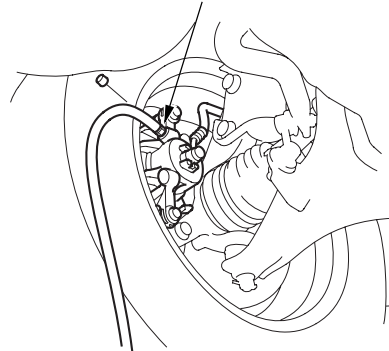
5. Repeat the procedure for each caliper until no air bubbles are in the fluid draining from the caliper. Bleed the caliper in the sequence shown.

BLEEDING SEQUENCE:



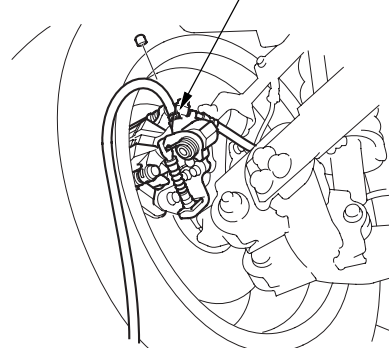
Front

9 N·m (0.9 kgf·m, 7 lbf·ft)



Rear

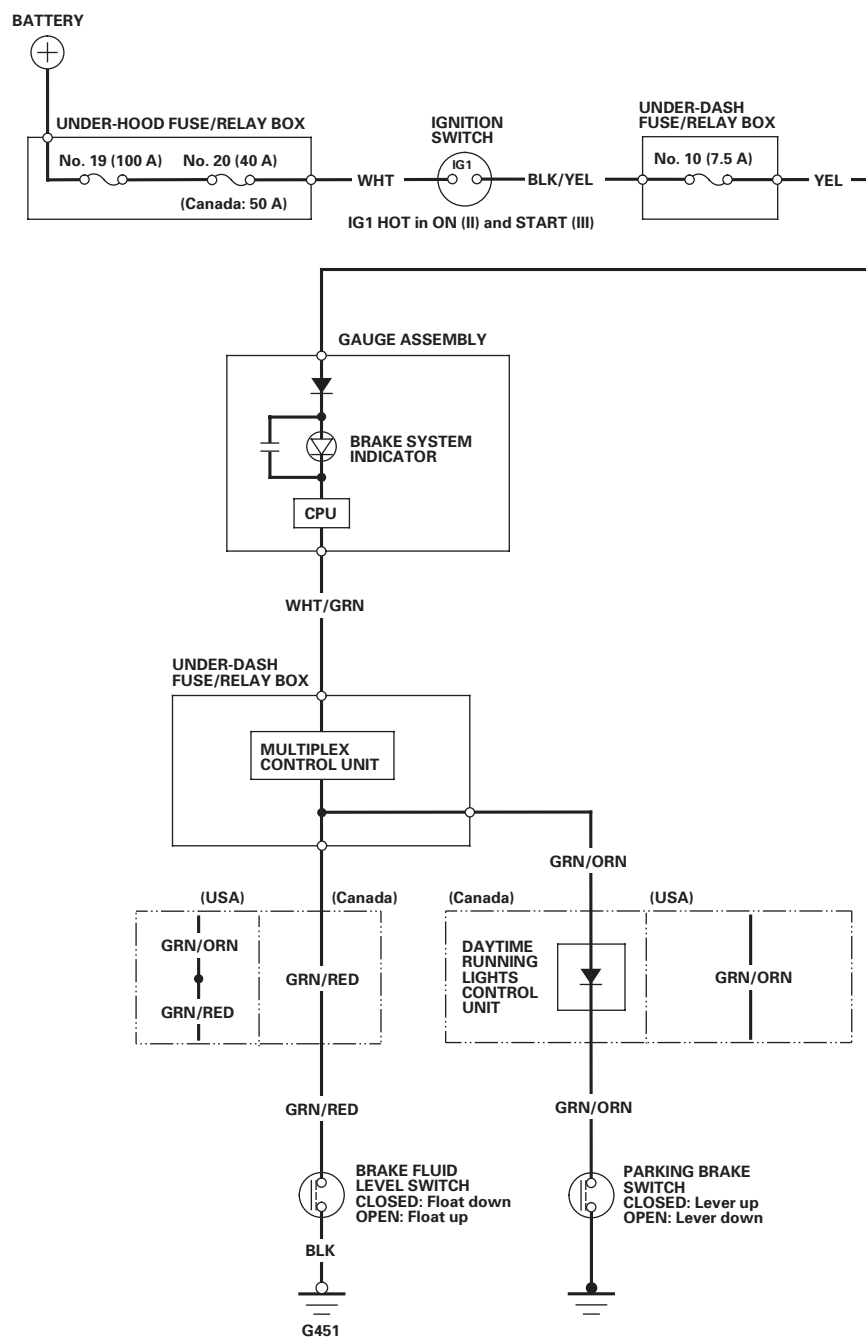
9 N·m (0.9 kgf·m, 7 lbf·ft)



6. Refill the master cylinder reservoir to the MAX (upper) level line.



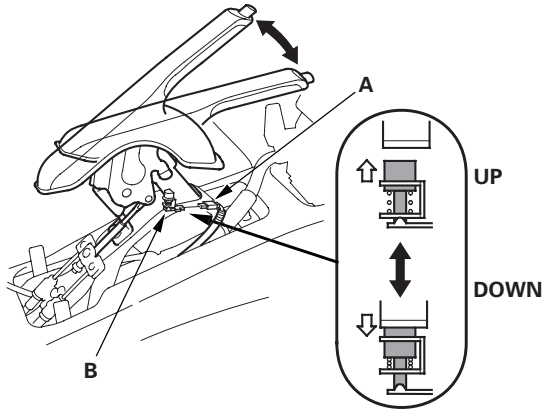
Brake System Indicator Circuit Diagram



Conventional Brake Components

Parking Brake Switch Test

1. Remove the center console (see page 20-59).
2. Disconnect the connector (A) from the switch (B).

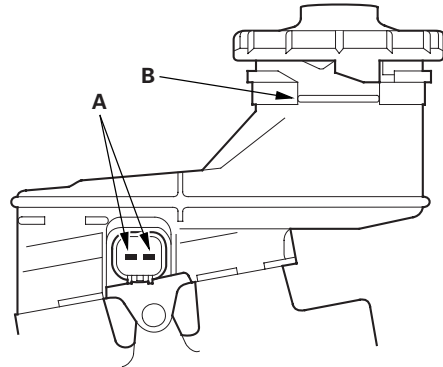


3. Check for continuity between the positive terminal and body ground.
 - With the brake lever up, there should be continuity.
 - With the brake lever down, there should be no continuity.

Brake Fluid Level Switch Test

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

- Remove the brake fluid completely from the reservoir. With the float down, there should be continuity.
- Fill the reservoir with brake fluid to MAX (upper) level (B). With the float up, there should be no continuity.





Front Brake Pad Inspection and 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.

Inspection

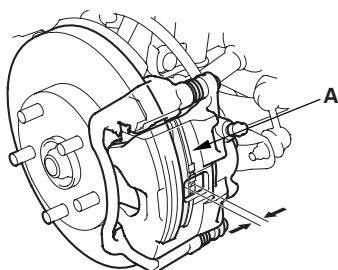
1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see page 1-12).
2. Remove the front wheel.
3. Check the thickness of the inner pad (A) and outer pad (B). Do not include the thickness of the backing plate.

Brake pad thickness:

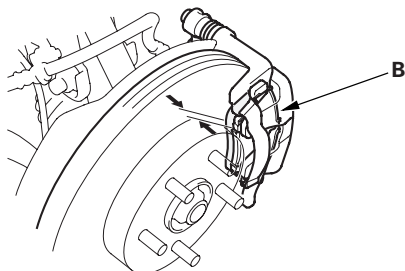
Standard: 9.5—10.5 mm (0.37—0.41 in.)

Service limit: 1.6 mm (0.06 in.)

Inner pad



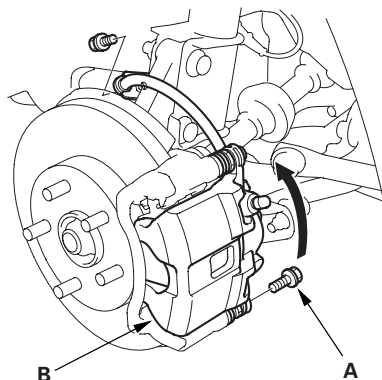
Outer pad



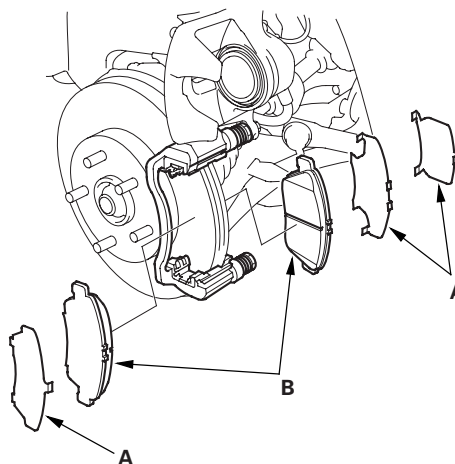
4. If the brake pad thickness is less than the service limit, replace all the brake pads as a set.

Replacement

1. 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.



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

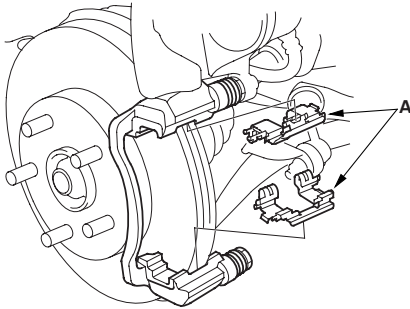


(cont'd)

Conventional Brake Components

Front Brake Pad Inspection and Replacement (cont'd)

3. Remove the pad retainers (A).



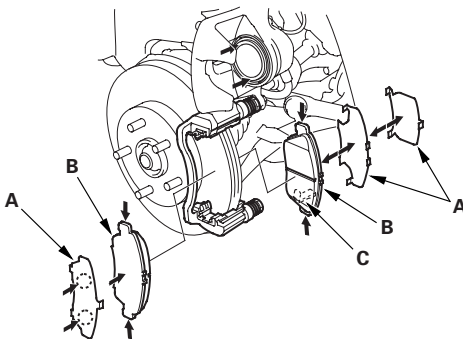
4. Clean the caliper thoroughly; remove any rust, and check for grooves and cracks.

5. Check the brake disc for damage and cracks.

6. Apply a thin coat of Molycote M-77 assembly paste (P/N 08798-9010) to the retainers on their mating surfaces against the caliper bracket.

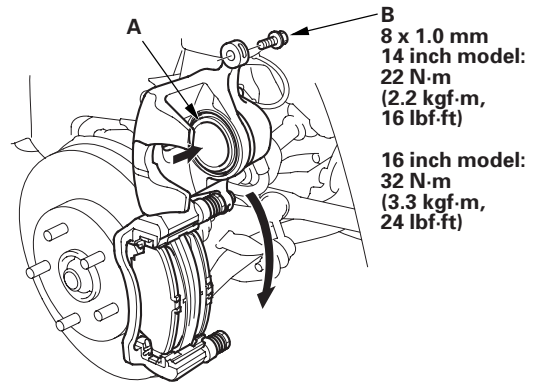
7. Install the pad retainers. Wipe excess assembly paste off the retainers. Contaminated brake discs and pads reduce stopping ability. Keep assembly paste off the brake discs and pads.

8. Apply a thin coat of Molycote M-77 assembly paste to both sides of the pad shims (A), the back of the brake pads (B), and the other areas indicated by the arrows. Wipe excess assembly paste off the shim. Contaminated brake discs and pads reduce stopping ability. Keep assembly paste off the brake discs and pads.



9. Install the brake pads and pad shim correctly. Install the brake pads with the wear indicator (C) on the lower 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.

10. Push in the piston (A) 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.



11. Pivot the caliper down into position. Be careful not to damage the pin boots, install the flange bolt (B), and tighten it to the specified torque.

12. Press the brake pedal several times to make sure the brake works.

NOTE: Engagement of the brake 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.

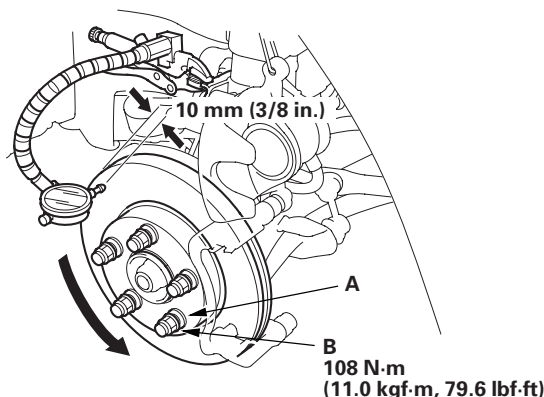
13. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then check for leaks.



Front Brake Disc Inspection

Runout

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see page 1-12).
2. Remove the front wheels.
3. Remove the brake pads (see page 19-11).
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 the wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc securely against the hub.



6. 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: 0.10 mm (0.004 in.)

7. If the brake disc is beyond the service limit, refinish the brake disc with an on-car brake lathe. The Kwik-Lathe produced by Kwik-way Manufacturing Co. and the "Front Brake Disc Lathe" offered by Snap-on Tools Co. are approved for this operation.

Max. refinish limit:

K20A2, K20Z1 engine models: 23.0 mm (0.91 in.)
K20A3 engine model: 19.0 mm (0.75 in.)

NOTE:

- If the brake disc is beyond the service limit for refinishing, replace it (see page 18-11).
- A new brake disc should be refinished if its runout is greater than 0.10 mm (0.004 in.).

Thickness and Parallelism

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see page 1-12).
2. Remove the front wheels.
3. Remove the brake pads (see page 19-11).
4. Using a micrometer, measure 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:

K20A2, K20Z1 engine models:
24.9—25.1 mm (0.98—0.99 in.)

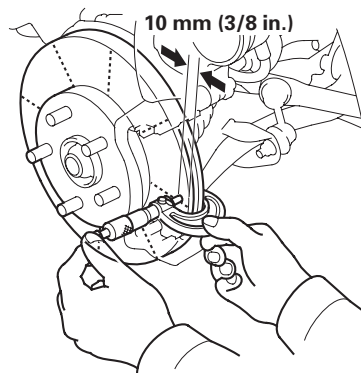
K20A3 engine model:
20.9—21.1 mm (0.82—0.83 in.)

Max. refinishing limit:

K20A2, K20Z1 engine models: 23.0 mm (0.91 in.)
K20A3 engine model: 19.0 mm (0.75 in.)

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

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



5. If the brake disc is beyond the service limit for parallelism, refinish the brake disc with an on-car brake lathe. The Kwik-Lathe produced by Kwik-way Manufacturing Co. and the "Front Brake Disc Lathe" offered by Snap-on Tools Co. are approved for this operation.

NOTE: If the brake disc is beyond the service limit for refinishing, replace it (see page 18-11).

Conventional Brake Components

Front Brake Caliper Overhaul

⚠ CAUTION

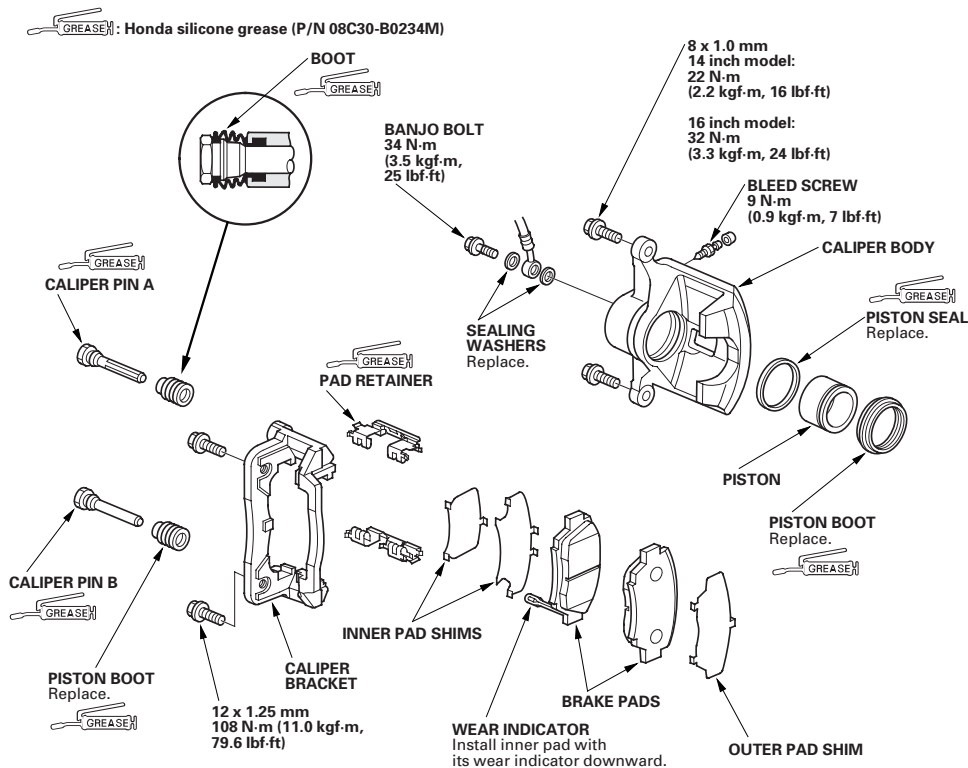
Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- 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. The upper and lower caliper pins are different. If the caliper pins are installed in the wrong location, it will cause uneven tire wear, vibration, and or uneven or rapid pad 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, 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 dust and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.
- Make sure no grease or oil gets on the brake discs or pads.
- When reusing pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only clean ACURA DOT 3 Brake Fluid from an unopened container. Using a non-Acura 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 piston, piston seal groove, and caliper bore 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.

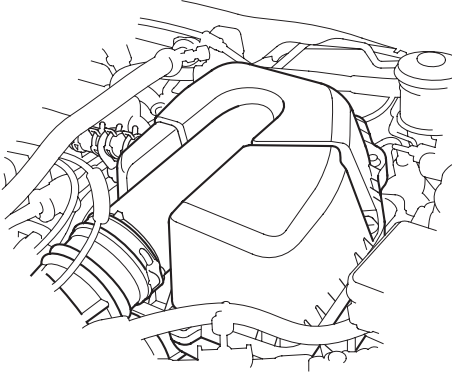




Master Cylinder Replacement

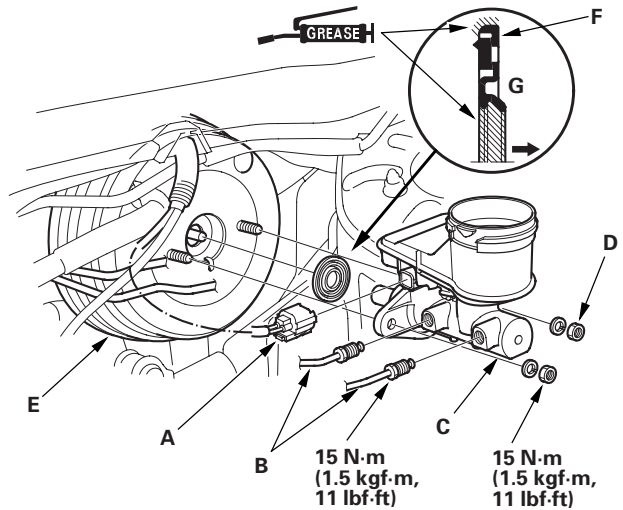
NOTE: Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.

1. Remove the air cleaner.



2. Remove the reservoir cap and brake fluid from the master cylinder reservoir.

3. Remove the brake fluid level sensor connector (A).



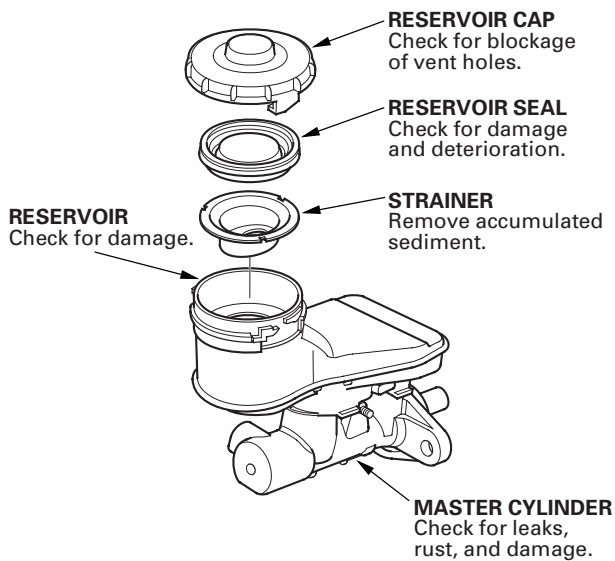
4. Disconnect the brake lines (B) from the master cylinder (C). To prevent spills, cover the hose joints with rags or shop towels.
5. Remove the master cylinder mounting nuts (D) and washers.
6. Remove the master cylinder from the brake booster (E). Be careful not to bend or damage the brake lines when removing the master cylinder.
7. Remove the rod seal (F) from the master cylinder.
8. 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 page 19-16).
 - Use a new rod seal on reassembly.
 - Coat the inner bore lip and outer circumference of the new rod seal with the recommended seal grease in the master cylinder set.
 - 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 page 19-6).
 - Bleed the brake system (see page 19-8).
9. Spin the wheels to check for brake drag.

Conventional Brake Components

Master Cylinder Inspection

NOTE:

- Before reassembling, check that all parts are free of dust 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.
- Bleed the brake system (see page 19-8).



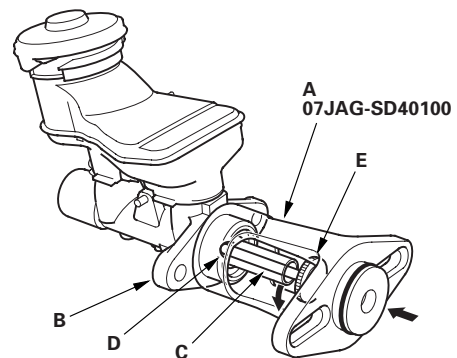
Brake Booster Pushrod Clearance Adjustment

Special Tools Required

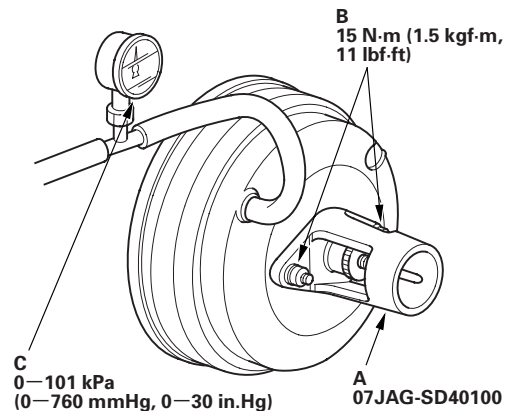
Pushrod adjustment gauge 07JAG-SD40100

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

1. Set the special tool (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).



2. Without disturbing the center shaft's position, install the special tool (A) backwards on the booster.



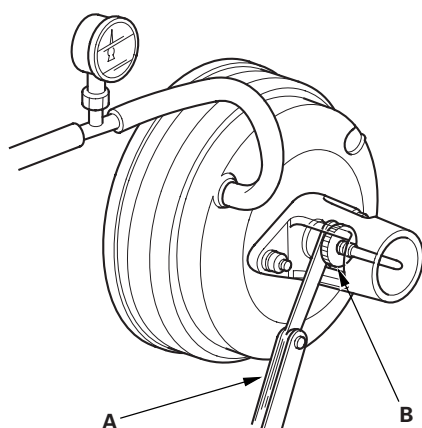
3. Install the master cylinder nuts (B), and tighten them to the specified torque.
4. Connect the booster in-line with a vacuum gauge (C) 0—101 kPa (0—760 mmHg, 0—30 in.Hg) to the booster's engine vacuum supply, and maintain an engine speed that will deliver 66 kPa (500 mmHg, 20 in.Hg) vacuum.



5. With a feeler gauge (A), measure the clearance between the gauge body and the adjusting nut (B) as shown.

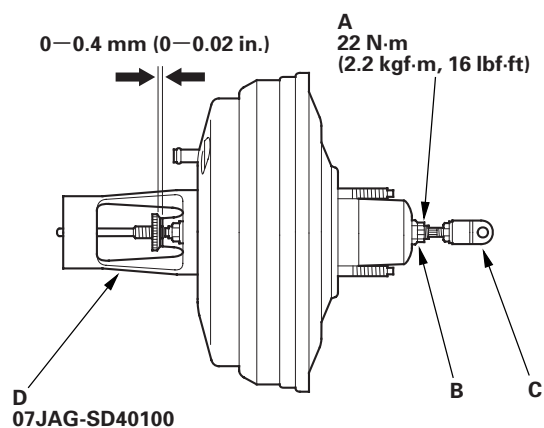
If the clearance between the gauge body and the adjusting nut is 0.4 mm (0.02 in.), the pushrod-to-piston clearance is 0 mm. However, if the clearance between the gauge body and the adjusting nut is 0 mm, the pushrod-to-piston clearance is 0.4 mm (0.02 in.) or more. Therefore, it must be adjusted and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

Clearance: 0—0.4 mm (0—0.02 in.)



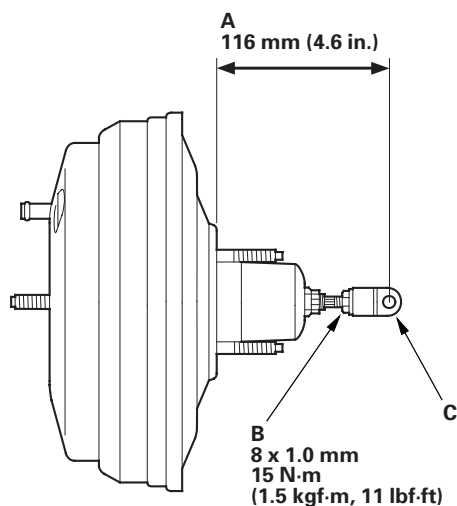
6. If the clearance is incorrect, loosen the star locknut (A), and turn the adjuster (B) in or out to adjust.

- Adjust the clearance while the specified vacuum is applied to the booster.
- Hold the yoke (C) while adjusting.



7. Tighten the star locknut securely.
8. Remove the special tool (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.



10. Install the master cylinder (see page 19-15).

Conventional Brake Components

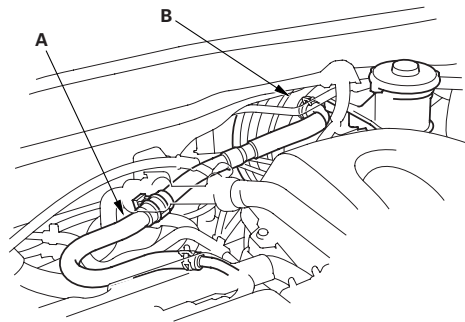
Brake Booster Test

Functional Test

1. With the engine stopped, 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 (master cylinder, lines, modulator-control unit, proportioning control valve, or calipers) is leaking.
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, the booster or check valve is faulty.
3. With the engine running, press the brake pedal lightly, and shift the transmission to the D position. Apply just enough pressure to hold back automatic transmission creep. If the brake pedal sinks more than 10 mm (3/8 in.) in 3 minutes, the master cylinder is faulty. A slight change in brake pedal height when the A/C compressor cycles on and off is normal. (The A/C compressor load changes the vacuum available to the booster.)

Leak Test

1. Press the brake pedal with the engine running, then stop the engine. If the brake pedal height does not vary while pressed for 30 seconds, the vacuum booster is OK. If the pedal height rises go to step 6. If it does not rise go to step 2.
2. Turn the engine off, and wait 30 seconds. Press the brake pedal several times using normal pressure. When the brake pedal is first pressed, it should be low. On consecutive applications, the brake 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 (check valve built-in) (A) at the booster (B) side.

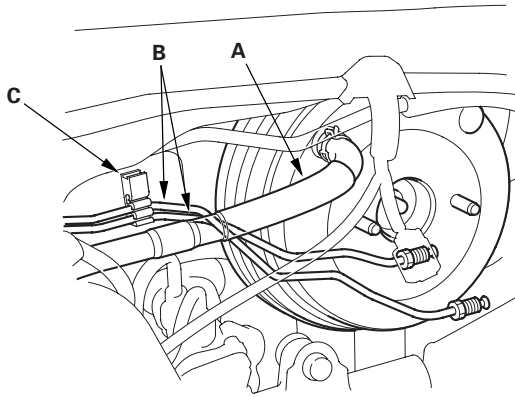


4. Start the engine, and let it idle. There should be vacuum available. If no vacuum is available, the check valve is not working properly. Replace the brake booster vacuum hose and check valve, and retest. If vacuum is found, go to step 5.
5. Reconnect the brake booster vacuum hose to the booster.
6.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

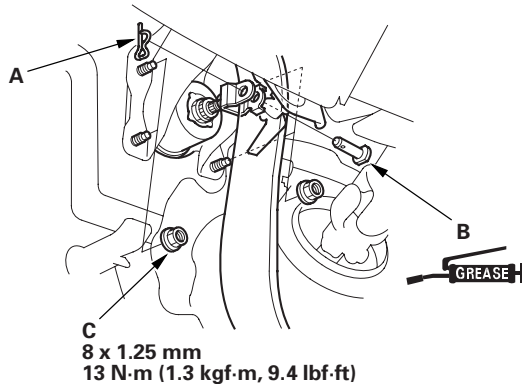


Brake Booster Replacement

1. Remove the master cylinder (see page 19-15).
2. Disconnect the vacuum hose (A) from the brake booster.



3. Remove the master cylinder brake lines (B) from the brake line holder (C).
4. Remove the lock pin (A) and the joint pin (B), then disconnect the yoke from the brake pedal.

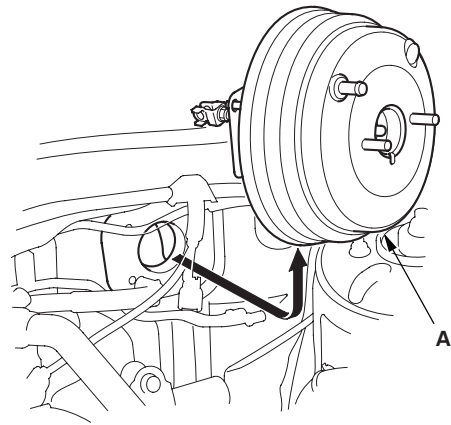


5. Remove the brake booster mounting flange nuts (C).

6. Remove the brake booster (A) from the engine compartment.

NOTICE

- 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.



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 page 19-16).
- Use a new lock pin whenever installing.
- After installing the brake booster and master cylinder, fill the reservoir with new brake fluid, bleed the brake system (see page 19-8), and adjust the brake pedal height and free play (see page 19-6).

Conventional Brake Components

Rear Brake Pad Inspection and 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.

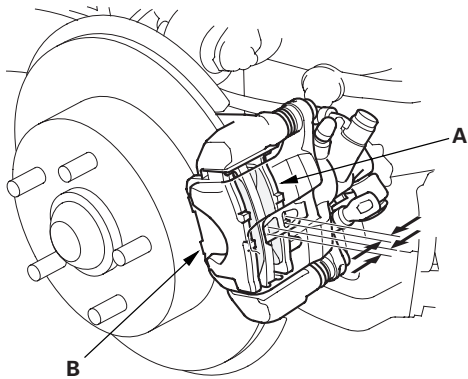
Inspection

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see page 1-12).
2. Remove the rear wheels.
3. Check the thickness of the inner pad (A) and outer pad (B). Do not include the thickness of the backing plate.

Brake pad thickness:

Standard: 8.5—9.5 mm (0.33—0.37 in.)

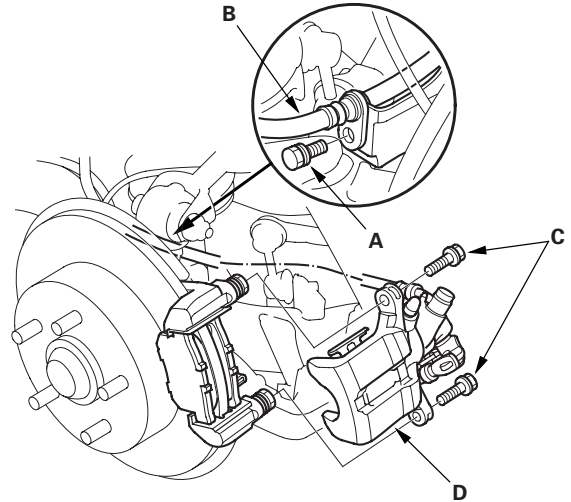
Service limit: 1.6 mm (0.06 in.)



4. If the brake pad thickness is less than the service limit, replace all the pads as a set.

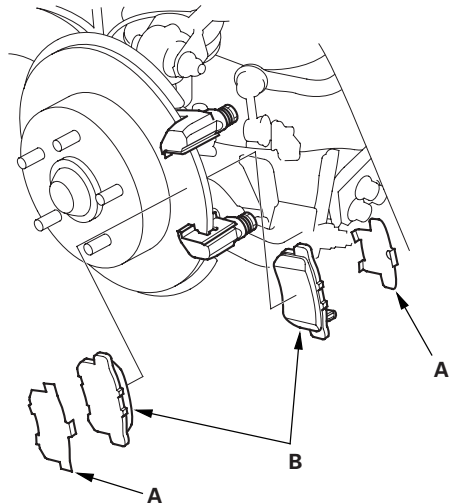
Replacement

1. Remove the bolt (A) and brake hose (B) from the mounting bracket.



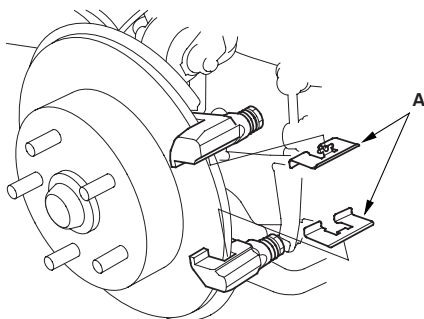
2. Remove the caliper bolts (C), and remove the caliper (D) from the caliper bracket.

3. Remove the pad shims (A) and pads (B).





4. Remove the pad retainers (A).



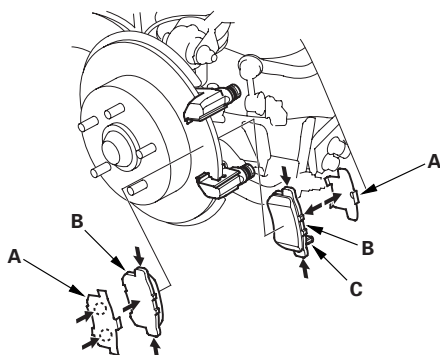
5. Clean the caliper thoroughly; remove any rust, and check for grooves and cracks.

6. Check the brake disc for damage and cracks.

7. Apply a thin coat of Molycote M-77 assembly paste (P/N 08798-9010) to the retainers on their mating surfaces against the caliper bracket.

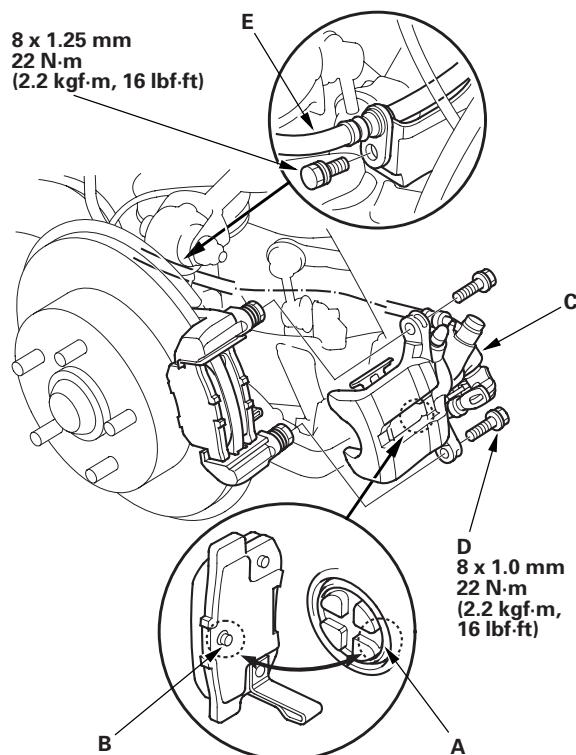
8. Install the pad retainers. Wipe excess assembly paste off the retainers. Contaminated brake discs and pads reduce stopping ability. Keep assembly paste off the discs and pads.

9. Apply a thin coat of Molycote M-77 assembly paste to both sides of the pad shims (A), the back of the brake pads (B), and the other areas indicated by the arrows. Wipe excess assembly paste off the shim. Contaminated brake discs and pads reduce stopping ability. Keep assembly paste off the brake discs and pads.



10. Install the brake pads and pad shims correctly. Install the brake pads with the wear indicator (C) on the lower 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.

11. Rotate the caliper piston clockwise into the cylinder, then align the cutout (A) in the piston with the tab (B) on the inner pad by turning the piston back so the caliper can be installed on the brake pad. Lubricate the boot with rubber grease to avoid twisting the piston boot. If the piston boot is twisted, back it out so it is positioned properly.



12. Install the brake caliper (C) and caliper bolts (D), and tighten the bolts to the specified torque.

13. Install the brake hose (E).

14. Press the brake pedal several times to make sure the brake works, then test-drive the vehicle.

NOTE: Engagement of the brake 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.

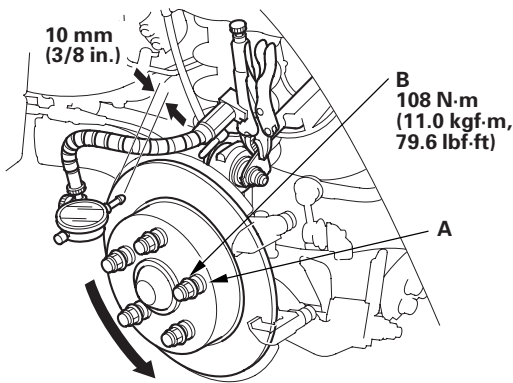
15. After installation, check for leaks at hose and line joints or connections, and retighten if necessary.

Conventional Brake Components

Rear Brake Disc Inspection

Runout

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see page 1-12).
2. Remove the rear wheels.
3. Remove the brake pads (see page 19-20).
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 the wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc securely against the hub.



6. 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: 0.10 mm (0.004 in.)

7. If the brake disc is beyond the service limit, refinish the brake disc with an on-car brake lathe. The Kwik-Lathe produced by Kwik-way Manufacturing Co. and the "Front Brake Disc Lathe" offered by Snap-on Tools Co. are approved for this operation.

Max. refinish limit: 8.0 mm (0.31 in.)

NOTE:

- If the brake disc is beyond the service limit for refinishing, replace it (see page 18-24).
- A new disc should be refinished if its runout is greater than 0.10 mm (0.004 in.).

Thickness and Parallelism

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see page 1-12).
2. Remove the rear wheels.
3. Remove the brake pads (see page 19-20).
4. Using a micrometer, measure 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.

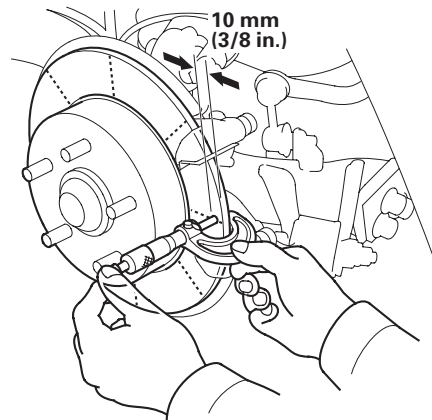
Brake disc thickness:

Standard: 8.9—9.1 mm (0.350—0.358 in.)

Max. refinishing limit: 8.0 mm (0.31 in.)

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

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



5. If the brake disc is beyond the service limit for parallelism, refinish the brake disc with an on-car brake lathe. The Kwik-Lathe produced by Kwik-way Manufacturing Co. and the "Front Brake Disc Lathe" offered by Snap-on Tools Co. are approved for this operation.

NOTE: If the brake disc is beyond the service limit for refinishing, replace it (see page 18-24).



Rear Brake Caliper Overhaul

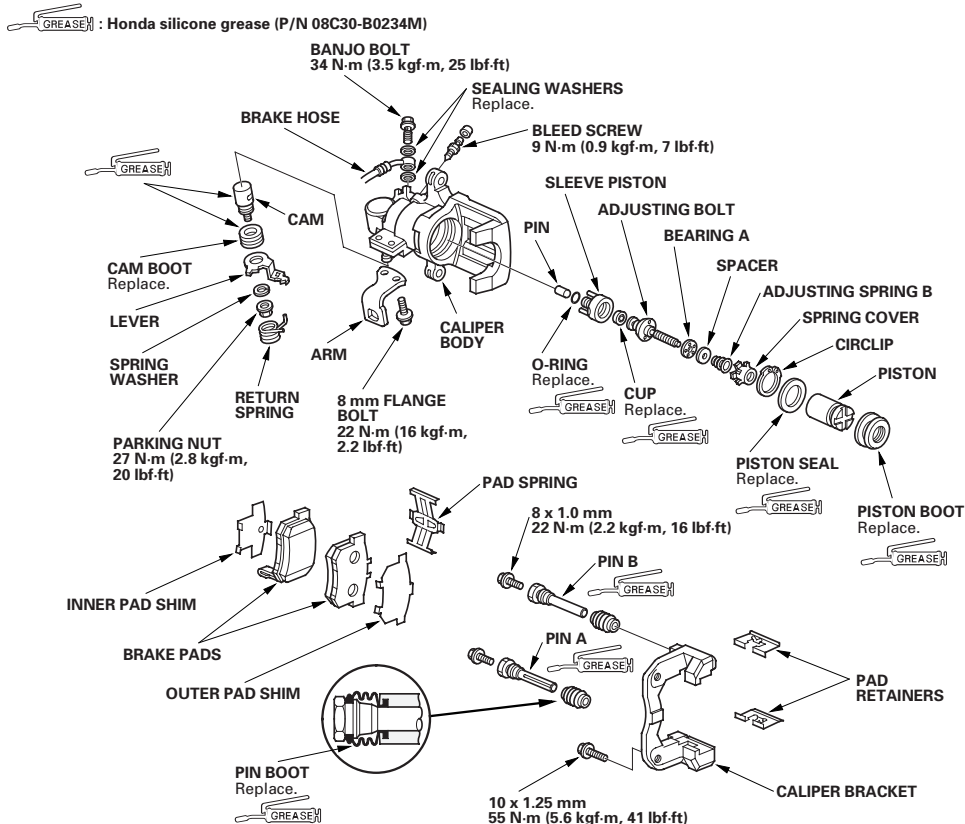
⚠ CAUTION

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 dust and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets into the brake fluid.
- Make sure no grease or oil gets on the brake discs or pads.
- When reusing pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only clean ACURA DOT 3 Brake Fluid from an unopened container. Using a non-Acura 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 piston, piston seal groove, and caliper bore 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.



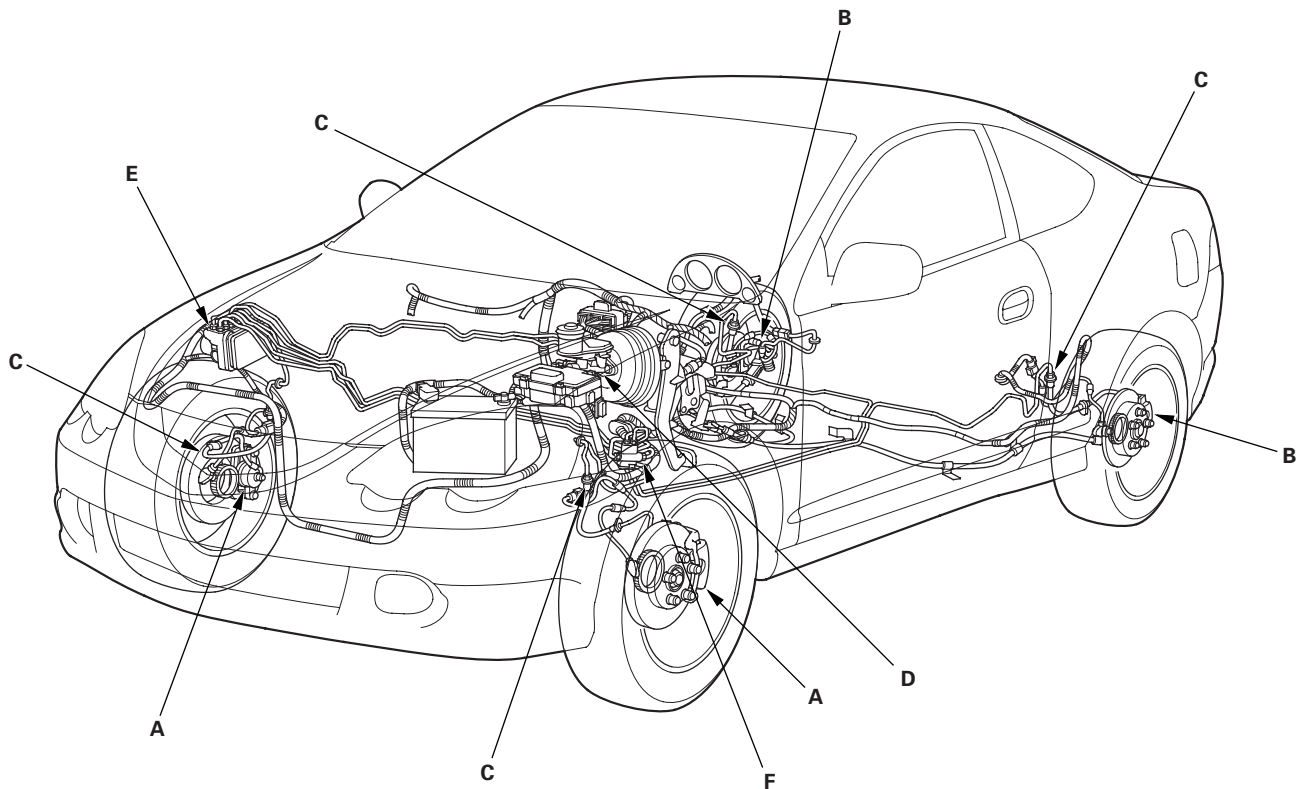
Conventional Brake Components

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 leakage. Also check for bent brake lines.
3. Check for leaks at hose and line joints or connections, and retighten if necessary.
4. Check the master cylinder and ABS modulator-control unit (if equipped) for damage and leakage.

NOTE: Replace the brake hose clip whenever the brake hose is serviced.

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
		Breed screw	9 N·m (0.9 kgf·m, 7 lbf·ft)	
B	Rear brake caliper	Brake hose	34 N·m (3.5 kgf·m, 25 lbf·ft)	Banjo bolt
		Breed 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	15 N·m (1.5 kgf·m, 11 lbf·ft)	Flare nut
E	ABS modulator-control unit	Brake line	15 N·m (1.5 kgf·m, 11 lbf·ft)	Flare nut
F	Proportioning control valve	Brake line	15 N·m (1.5 kgf·m, 11 lbf·ft)	Flare nut



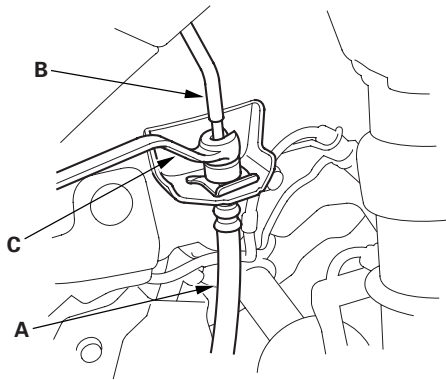


Brake Hose Replacement

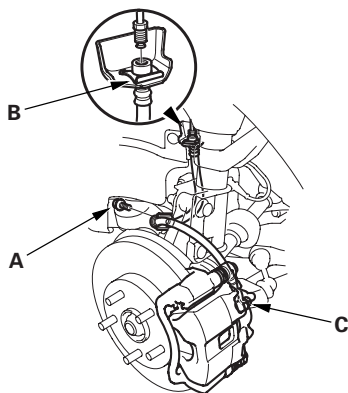
NOTE:

- Before reassembling, check that all parts are free of dust 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 dripping, cover disconnected line joints with rags or shop towels.

1. Replace the brake hose (A) if the hose is twisted, cracked, or if it leaks.

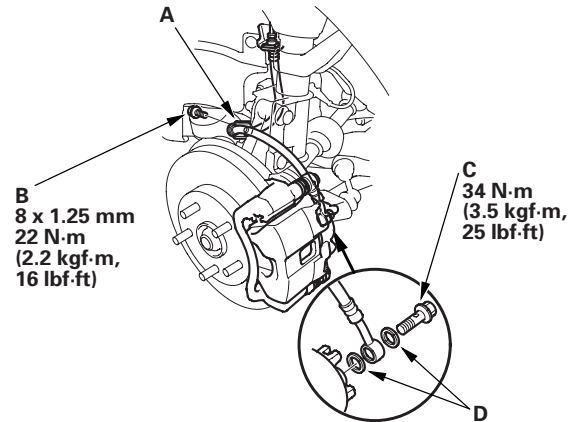


2. Disconnect the brake hose from the brake line (B) using a 10 mm flare nut wrench (C).
3. Remove the flange bolt (A), and remove the brake hose brackets from the damper.

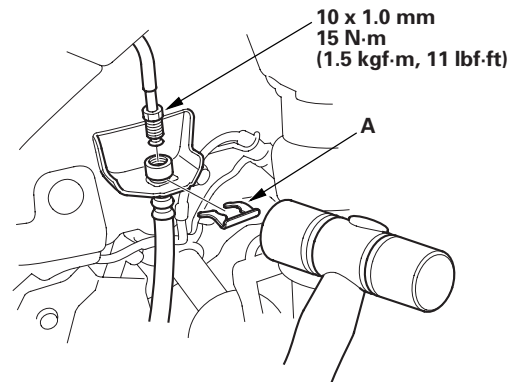


4. Remove and discard the hose clip (B).
5. Remove the banjo bolt (C), and remove the brake hose from the caliper.

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).



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

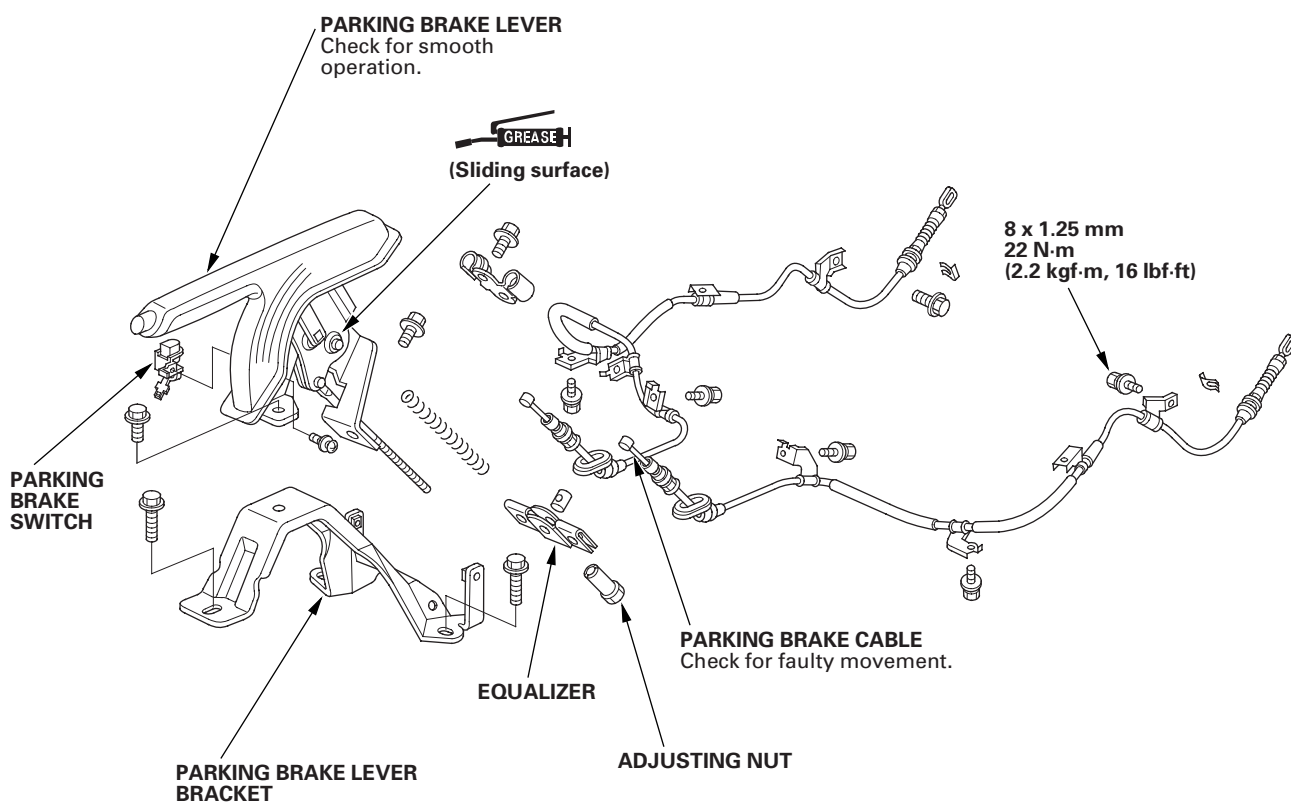


8. Connect the brake line to the brake hose.
9. After installing the brake hose, bleed the brake system (see page 19-8).
10. Do the following checks:
 - Check the brake hose and line joint for leaks, and tighten if necessary.
 - Check the brake hoses for interference and twisting.

Conventional Brake Components

Parking Brake Cable Replacement

Exploded View

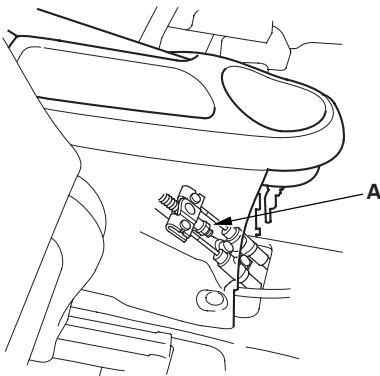




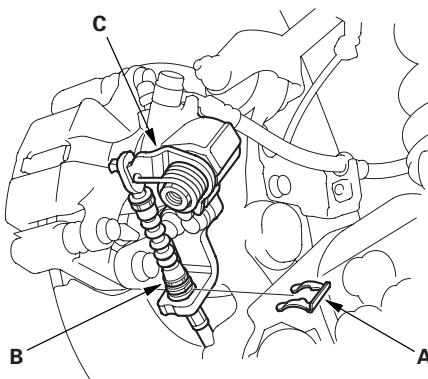
NOTE:

- 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. Release the parking brake lever fully.
2. Remove the center console rear cover (see page 20-62).
3. Loosen the parking brake cable adjusting nut (A).



4. Remove the parking brake cable clip (A) from the brake cable (B).



5. Disconnect the parking brake cable from the lever (C).
6. Remove the parking brake cable mounting hardware, then remove the cable.

7. Install the new cable in the reverse order of removal, and note these items:

- Be careful not to bend or distort the cable.
- Make sure the parking brake cable clip is fully seated on the cable housing.
- Do the parking brake adjustment (see page 19-7).