2000-06 BRAKES

Conventional Brake Components - Insight

SPECIAL TOOLS

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

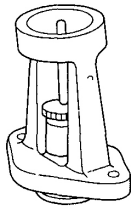

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Fig. 1: Identifying Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

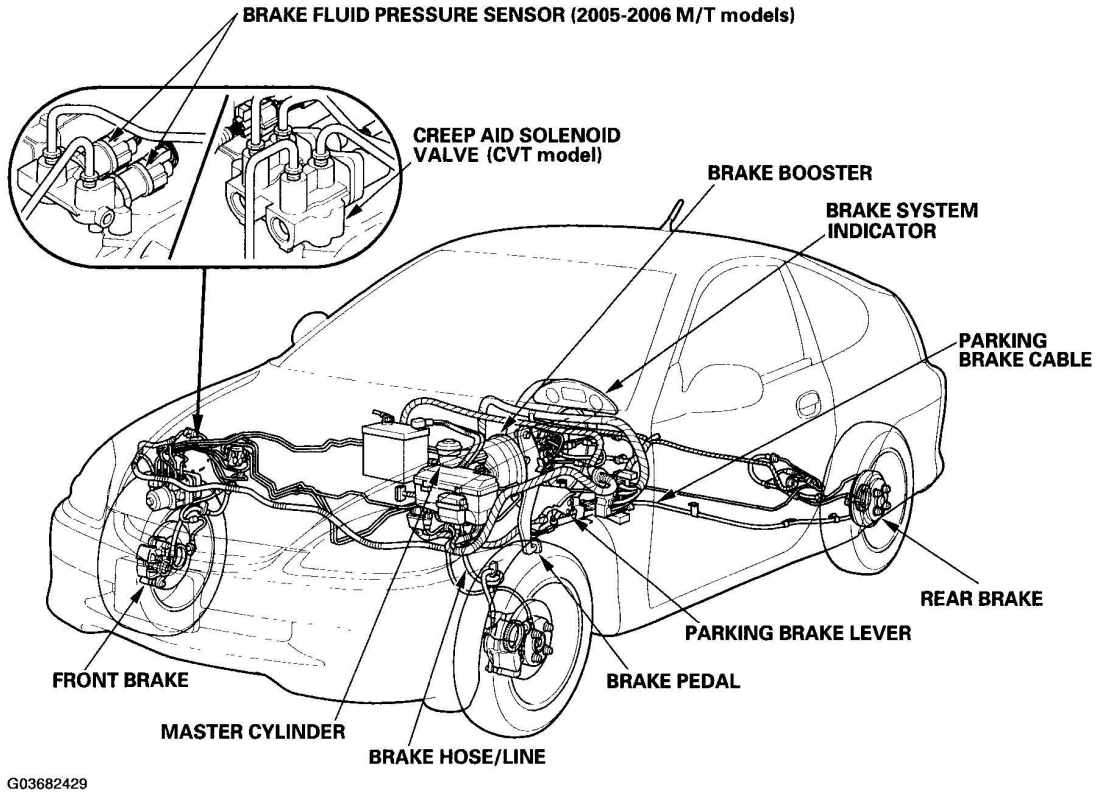

Fig. 2: Identifying Conventional Brake Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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 PROCEDURE

Component	Procedure	Also check for:
Master Cylinder	Look for damage or signs of fluid leakage at: • Reservoir or reservoir grommets	Bulging seal at reservoir cap. This is a sign of fluid contamination.

	• Line joints • Between master cylinder and booster	
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.
Wheel Cylinder	Look for damage or signs of fluid leakage at: • Line joints • Bleed screw	
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 CVT-equipped vehicle 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 drag or 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.

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.

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.

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

   Is there brake drag at any of the wheels?

   YES -Disassemble and repair the caliper or wheel cylinder on the wheel(s) with brake drag.

   NO -Inspect brake hose(s)/line(s).

BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH/IDLE STOP SWITCH ADJUSTMENT

PEDAL HEIGHT

1. Disconnect the brake pedal position switch connector, loosen the brake pedal position switch locknut (A), and back off the switch (B) until it is no longer touching the brake pedal.

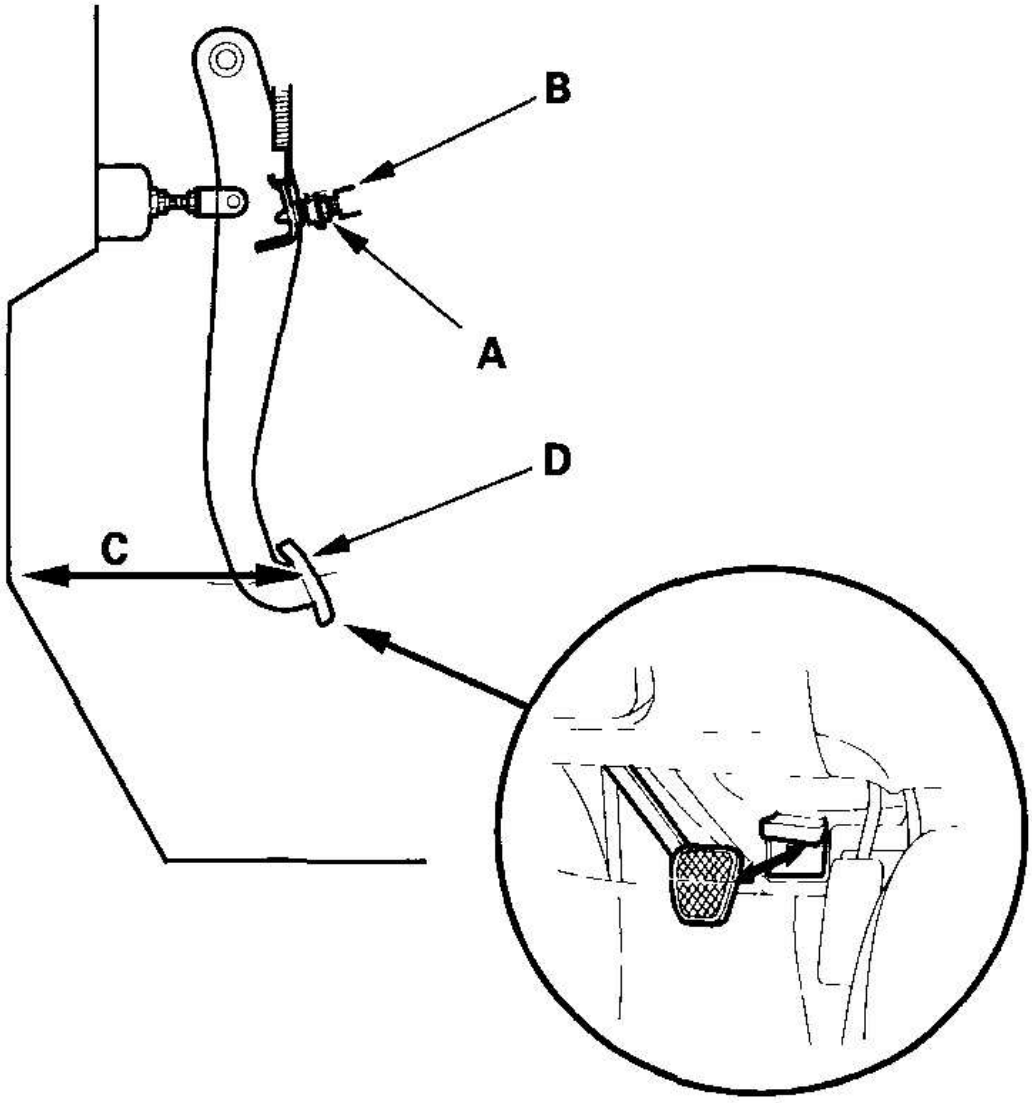

Fig. 3: Loosening Brake Pedal Position Switch Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the idle stop switch connector, and loosen the idle stop switch (CVT).
3. Lift up the carpet. At the insulator cutout, measure the pedal height (C) from the middle of the right side center of the pedal pad (D).

Standard pedal height (with carpet removed): 184 mm (7 1/4 in.)

4. Loosen the pushrod locknut (A), and screw the pushrod (B) in or out with a pair of 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.

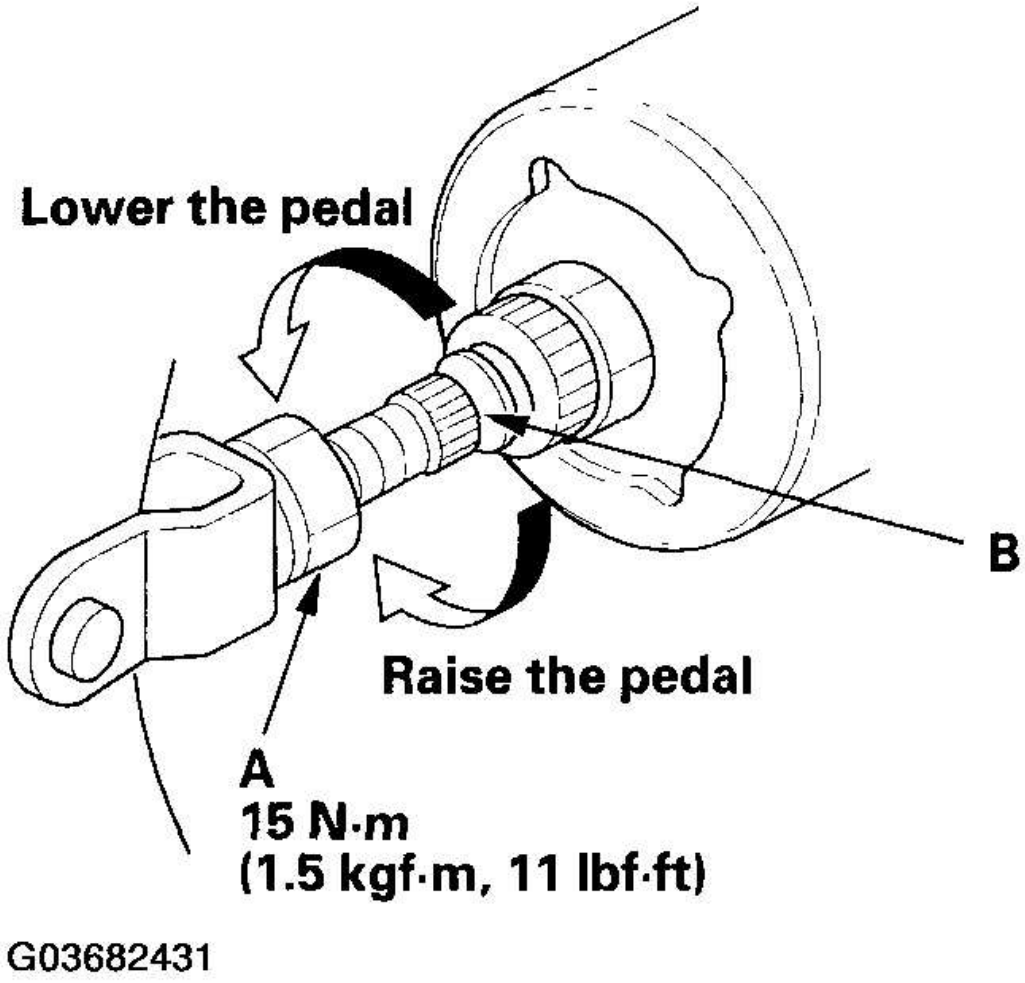

Fig. 4: Loosening Pushrod Locknut And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Screw in the brake pedal position switch (A) until its plunger is fully pressed (threaded end (B) is touching the pad (C) on the pedal arm). Then back off the switch 1/4 turn to make 0.3 mm (0.01 in.) of clearance between the threaded end and the pad.

   Tighten the locknut firmly. Connect the brake pedal position switch connector. Make sure the brake lights go off when the pedal is released.

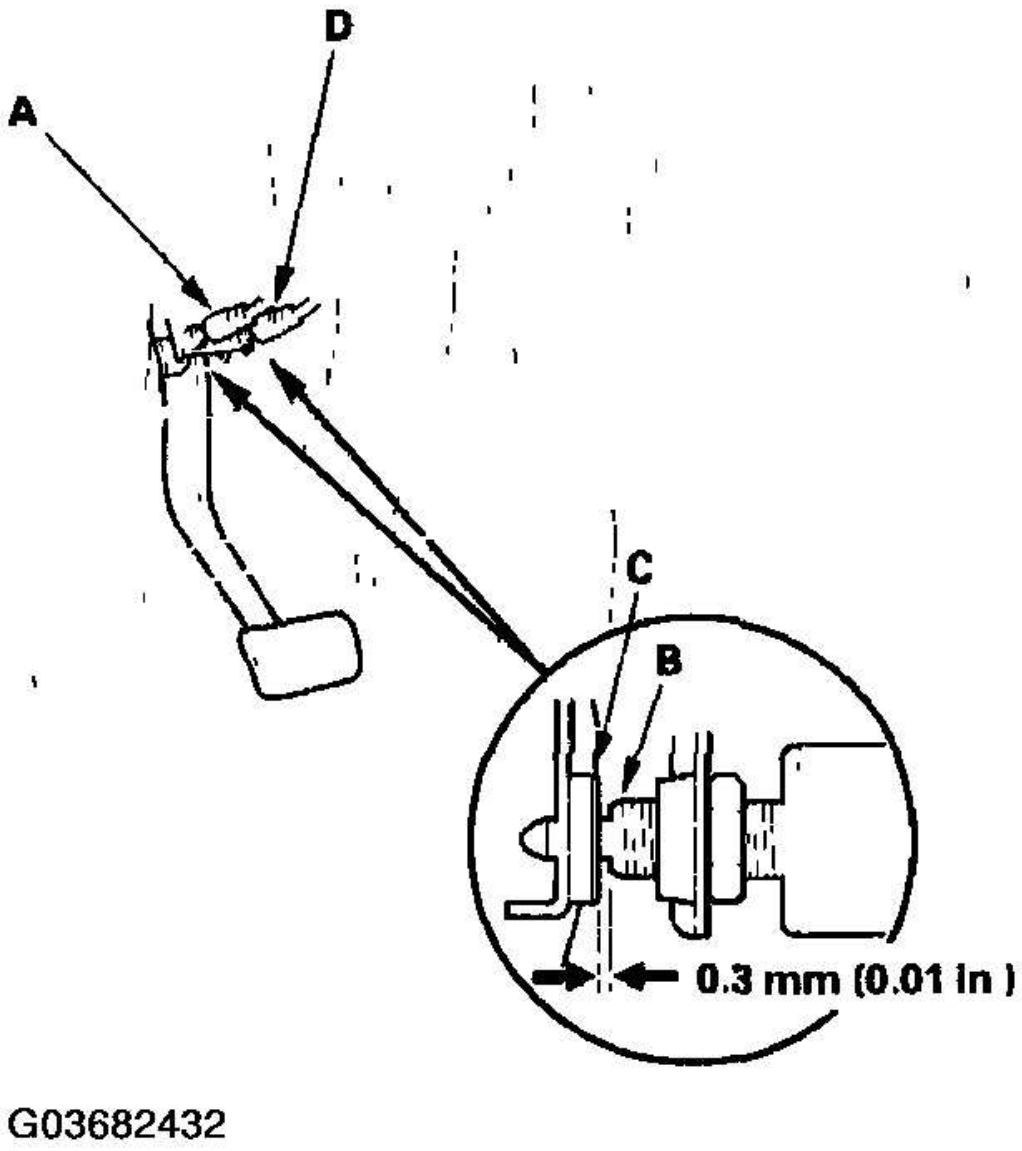

Fig. 5: Screwing In Brake Pedal Position Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. After adjusting the brake pedal position switch, adjust the idle stop switch (D) with the same procedure used in step 5. When finished, start the engine, and make sure the engine Auto Stop functions correctly (CVT).

Note these items during adjustment:

- When either the brake pedal position switch or the idle stop switch needs adjusting, both switches must be adjusted together to keep their functions synchronized. Always adjust the brake pedal position switch first, then adjust the idle stop switch; never adjust the switches independently.
- When the brake pedal is released, the brake pedal position switch is normally open and the idle stop switch is normally closed.

7. Check the brake pedal free play.

PEDAL FREE PLAY

1. With the engine off, inspect the play on the pedal pad by pushing the 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 and idle stop switch (CVT Only). If the pedal free play is insufficient, it may result in brake drag.

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: 4 to 8

   Pulled up with 196 N (20 kgf, 44 lbf)

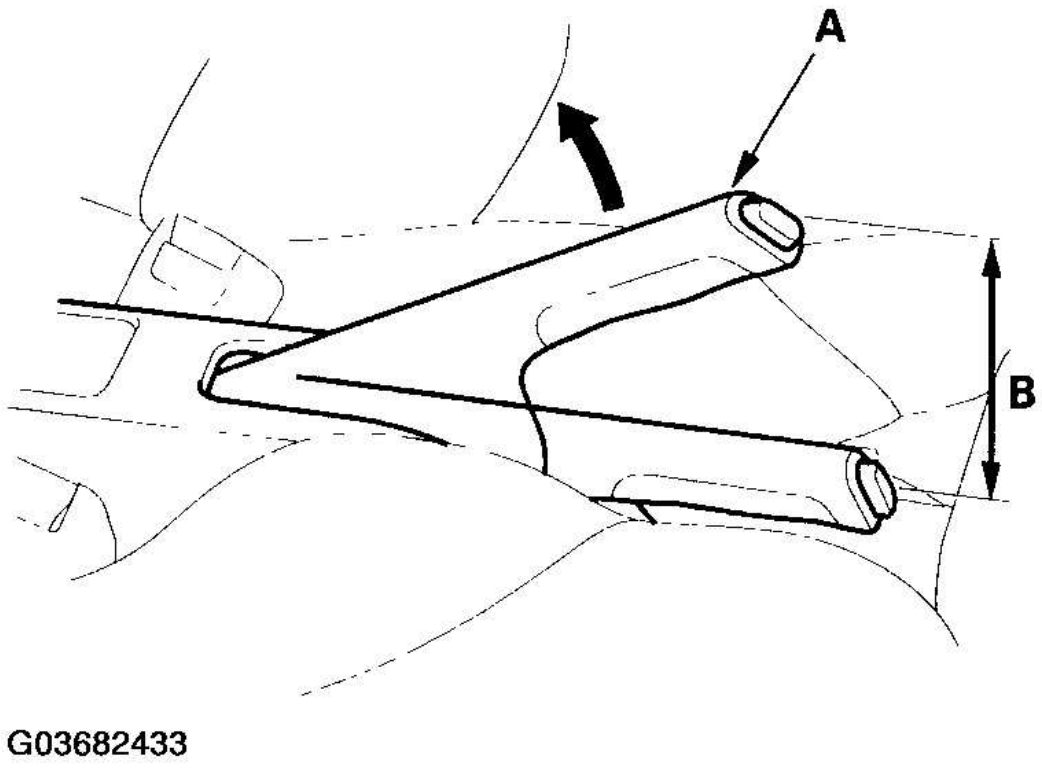

Fig. 6: Pulling Parking Brake Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

ADJUSTMENT

NOTE: After servicing the rear brake shoes, 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.

1. Block the front wheels, then raise the rear of the vehicle, and support it with safety stands in the proper locations (see **SAFETY STANDS**).
2. Remove the rear console (see **REAR CONSOLE REMOVAL/INSTALLATION**).

3. Pull the parking brake lever up 1 click.
4. Tighten the adjusting nut (A) until the parking brakes drag slightly when the rear wheels are turned.

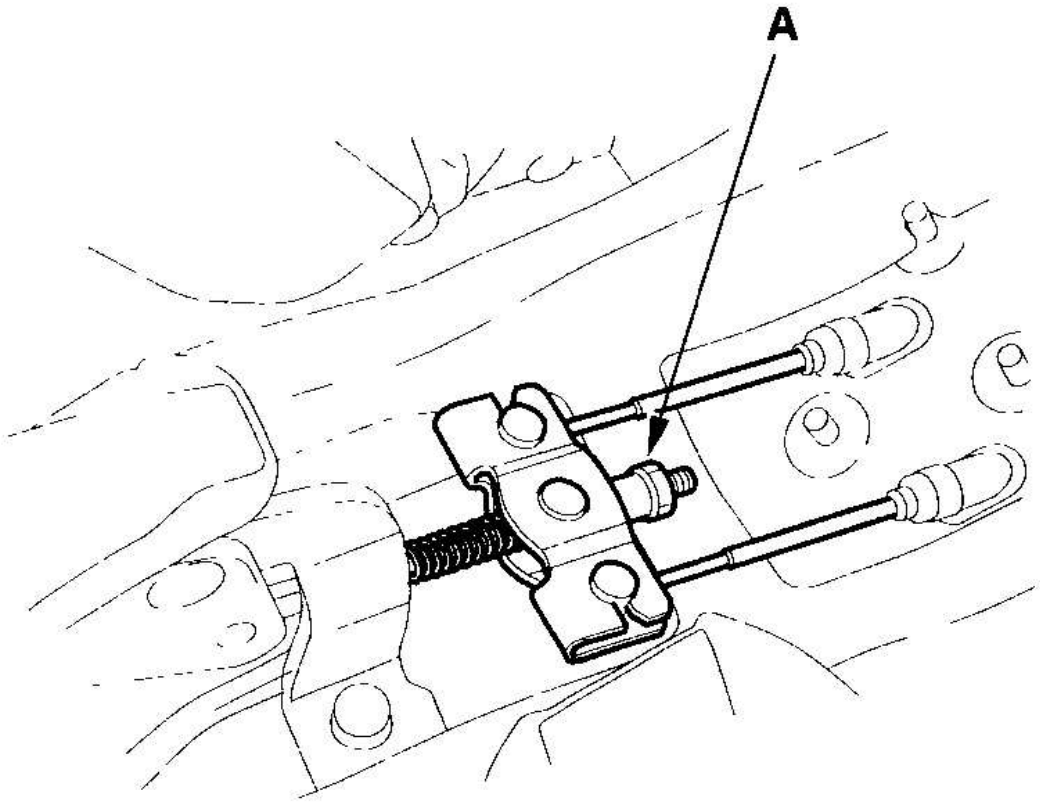

Fig. 7: Tightening Adjusting Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the parking brake lever fully, and check that the parking brakes do not drag when the rear wheels are turned. Readjust if necessary.
6. Make sure the parking brakes are fully applied when the parking brake lever is pulled all the way (4 to 8 clicks).
7. Reinstall the rear console (see **REAR CONSOLE REMOVAL/INSTALLATION**).

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 allow dirt or other foreign matter 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 or wheel cylinder. Add fluid as required.**

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

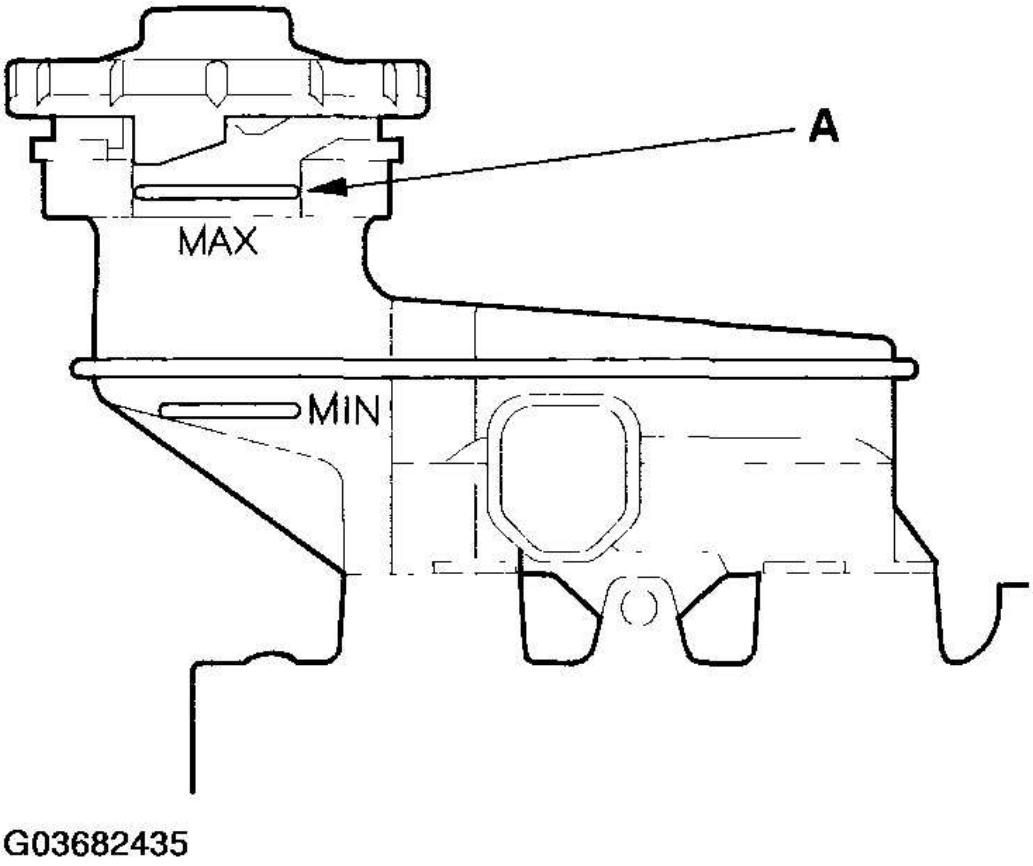

Fig. 8: Identifying Max (Upper) Level Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Have someone slowly pump the brake pedal several times, then apply steady pressure.
3. Starting at the left-front, loosen the brake bleed screw to allow air to escape from the system. Then tighten the bleed screw securely.
4. Repeat the procedure for each wheel in the sequence shown following until air bubbles no longer appear in the fluid.

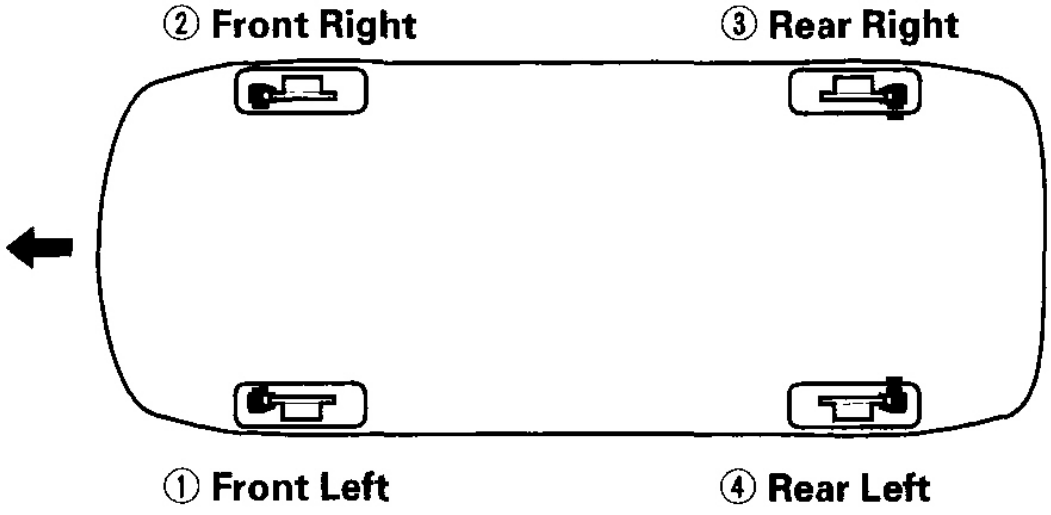

Fig. 9: Identifying Bleeding Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front

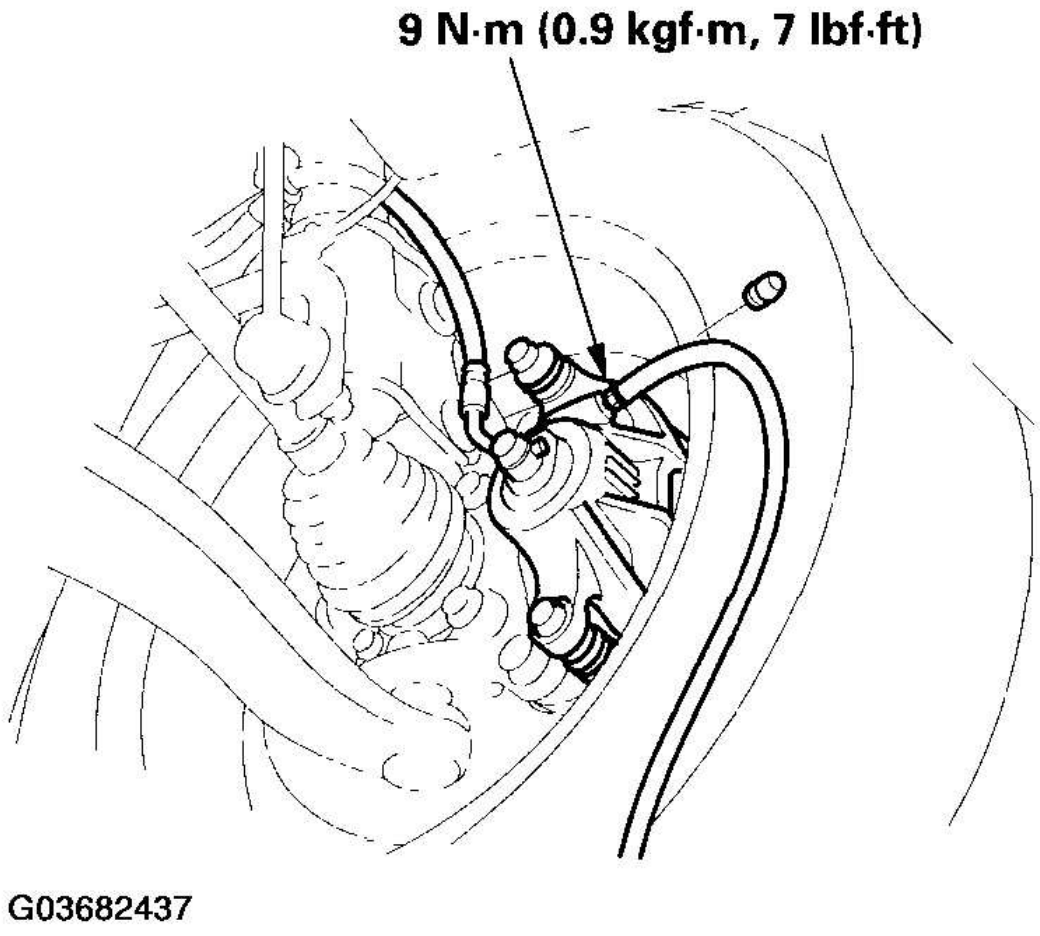

Fig. 10: Identifying Front Bleeding Point And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

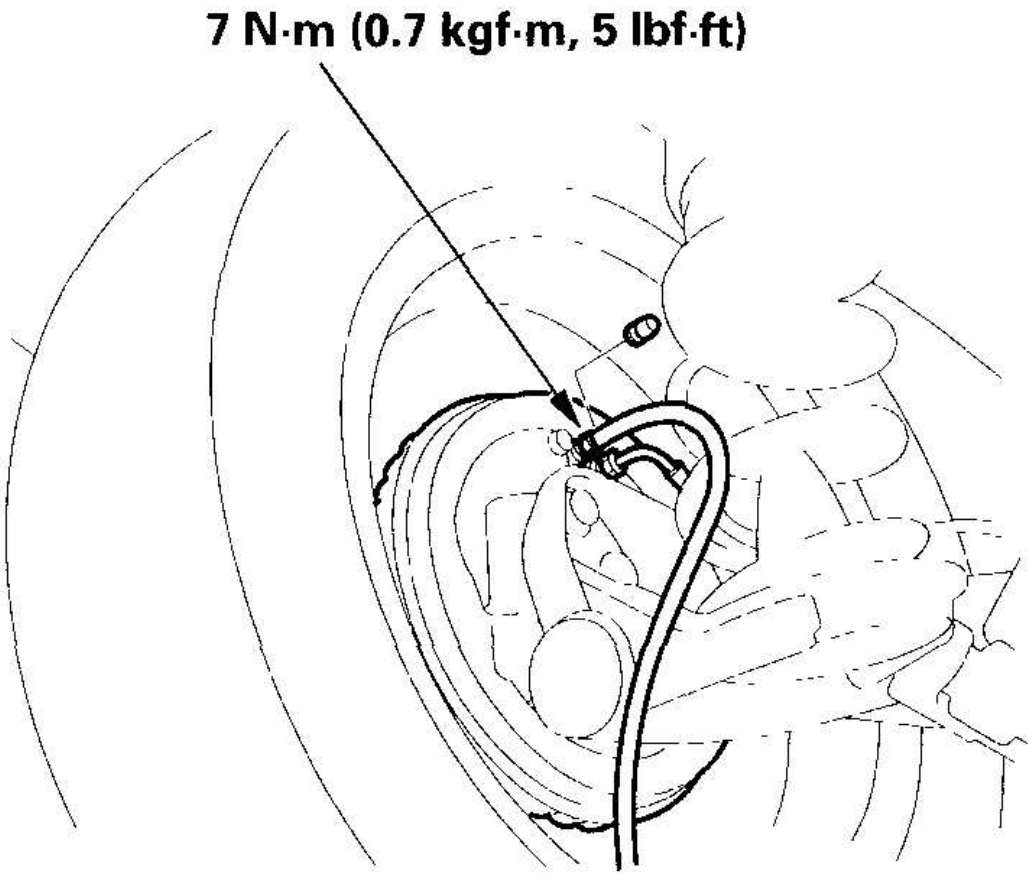

Fig. 11: Identifying Rear Bleeding Point And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

BRAKE SYSTEM INDICATOR CIRCUIT DIAGRAM

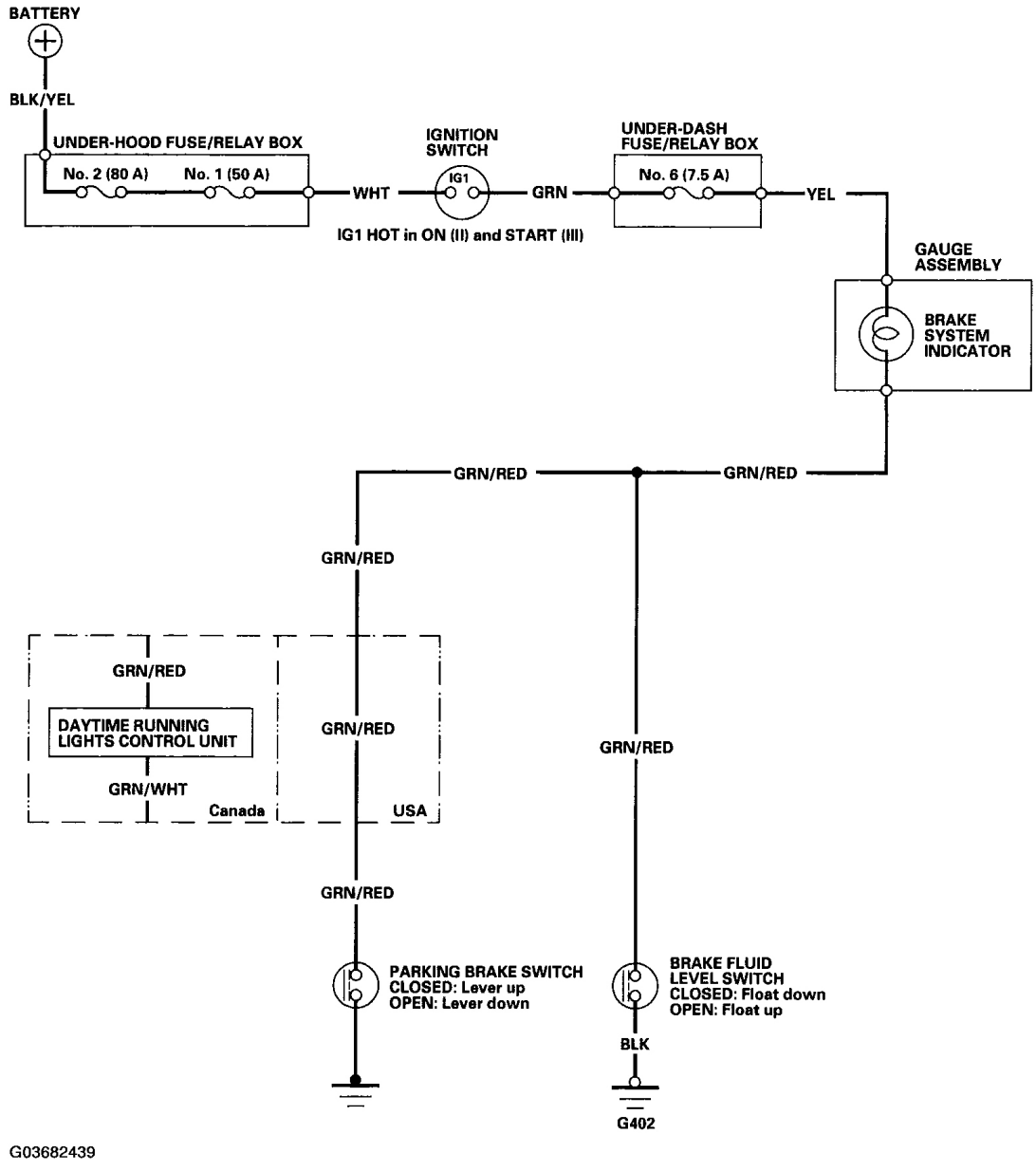

Fig. 12: Identifying Brake System Indicator Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE SWITCH TEST

1. Remove the rear console (see **REAR CONSOLE REMOVAL/INSTALLATION**), and disconnect the connector (A) from the parking brake switch (B).

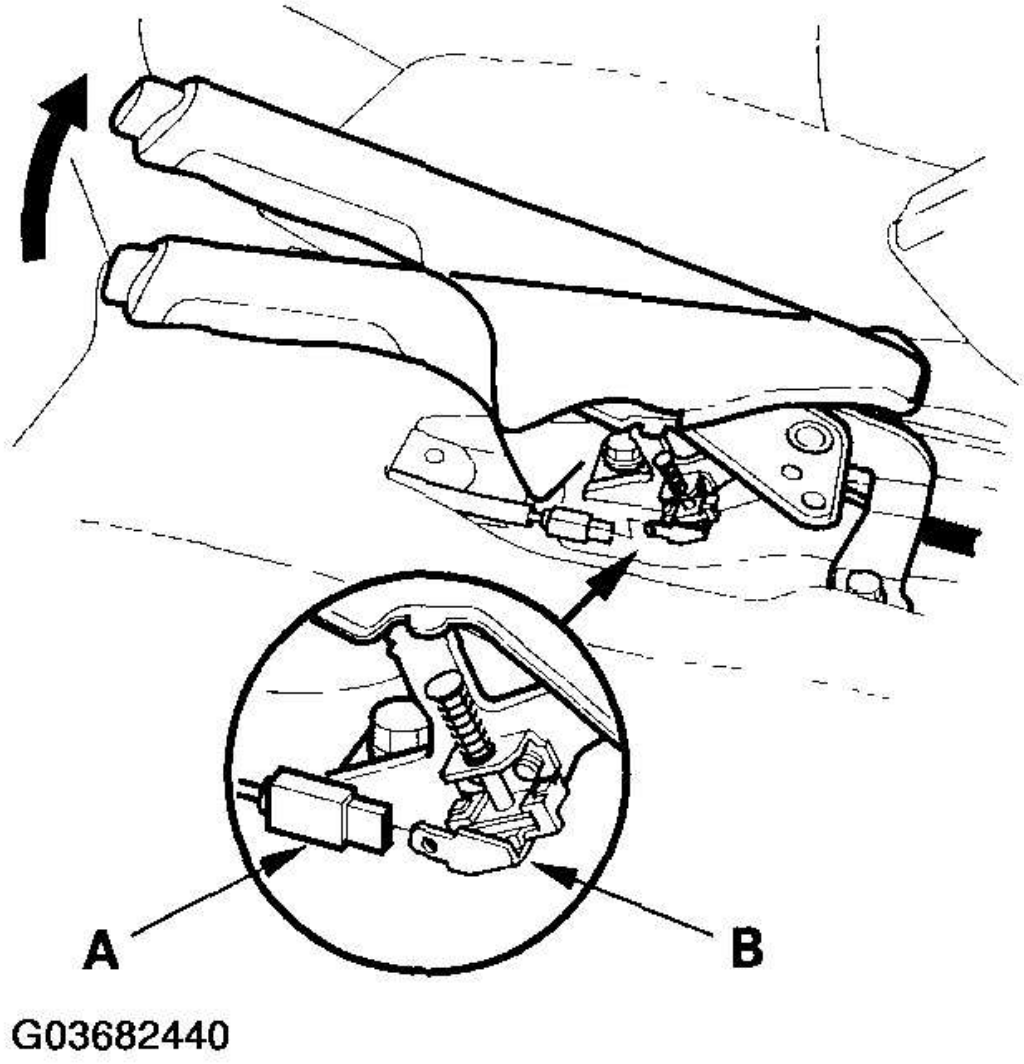

Fig. 13: Disconnecting Connector From Parking Brake Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. 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.

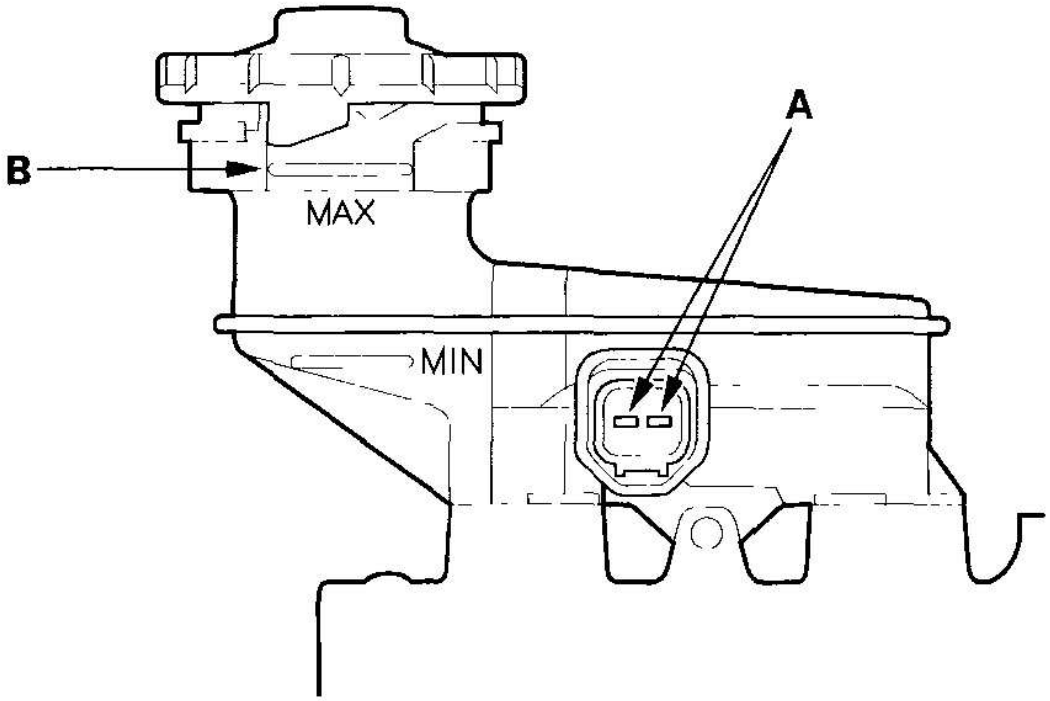

Fig. 14: Checking For Continuity Between Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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 OHSA-approved vacuum cleaner.**

NOTE: To avoid damage, do not strike aluminum parts with a metal hammer. If necessary, tap gently with a plastic-tipped hammer.

NOTE: Bolts and nuts with the * mark are special corrosion-resistant Dacro fasteners. Use the same type if replacement is necessary.

INSPECTION

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **SAFETY STANDS**).
2. Remove the front 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:

CVT model: 9.0-9.7 mm (0.35-0.38 in.)

M/T model: 8.0-8.7 mm (0.31-0.34 in.)

Service limit: 1.6 mm (0.06 in.)

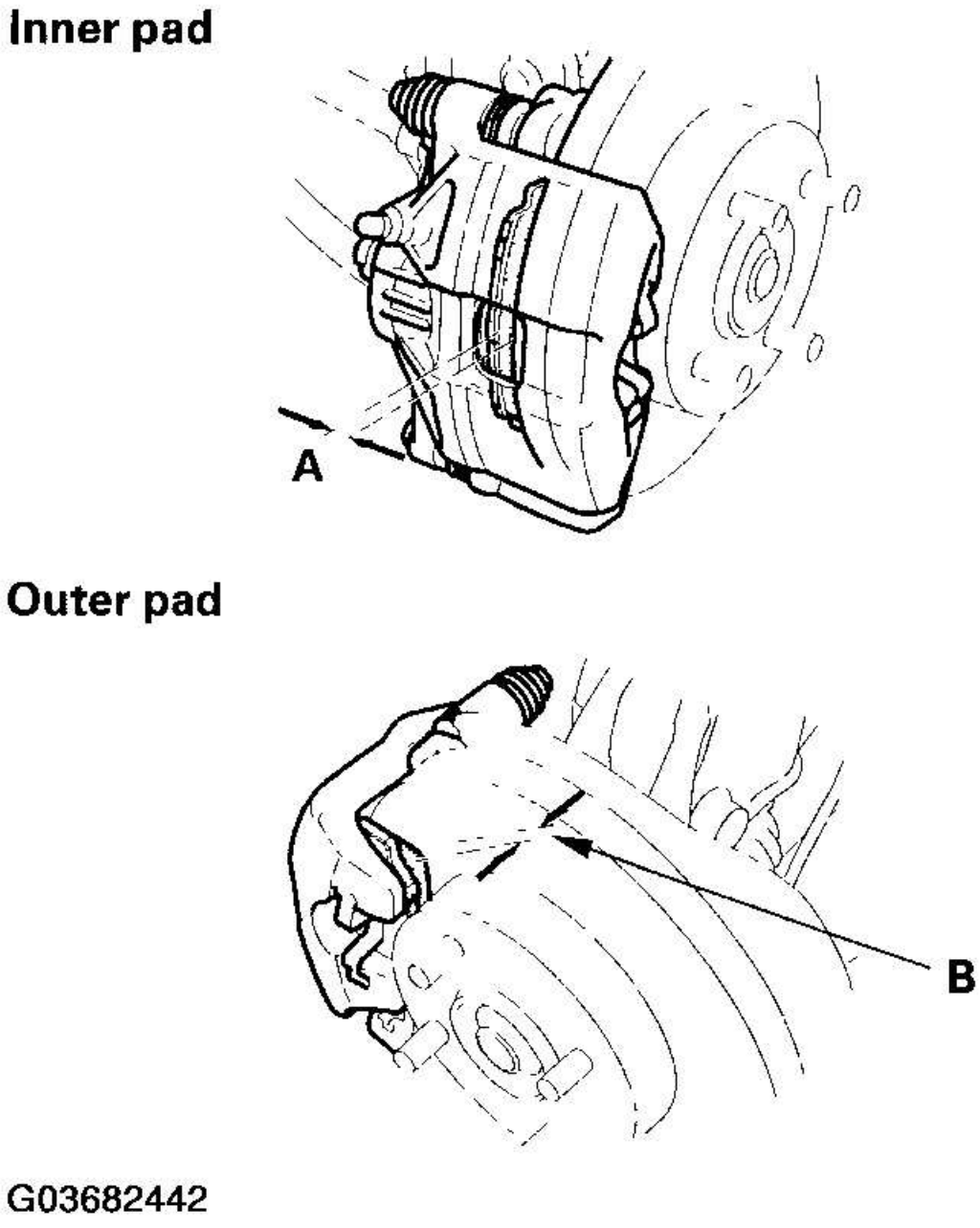

Fig. 15: Identifying Inner Pad And Outer Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the brake pad thickness is less than the service limit, replace the brake pads

as a set.

REPLACEMENT

1. Remove the brake hose bracket mounting bolts (A) from the damper.

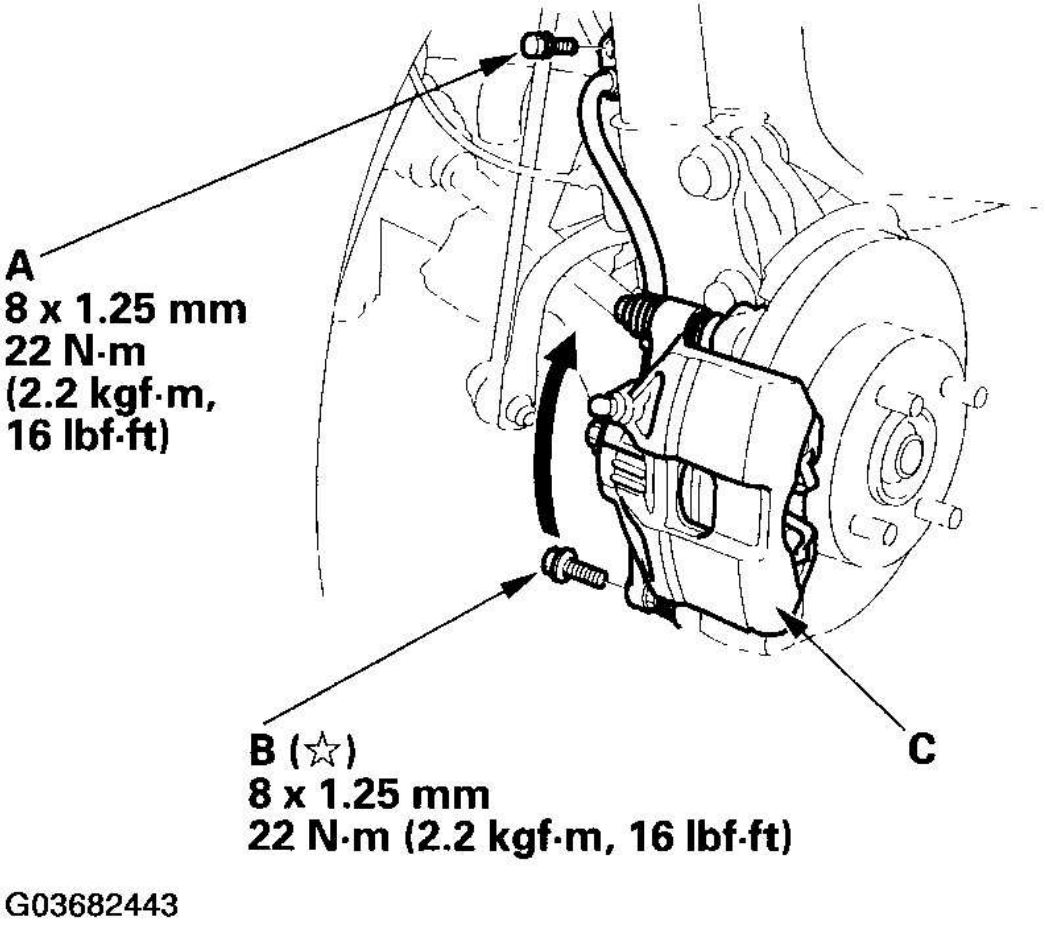

Fig. 16: Removing Brake Hose Bracket Mounting Bolts From Damper And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bolt (B) and pivot the caliper (C) up out of the way. Check the hose, pin boot, and sleeve boots for damage and deterioration.
3. Remove the pad shims (A), pad retainers (B), and inner pad (C) and outer pad

(D).

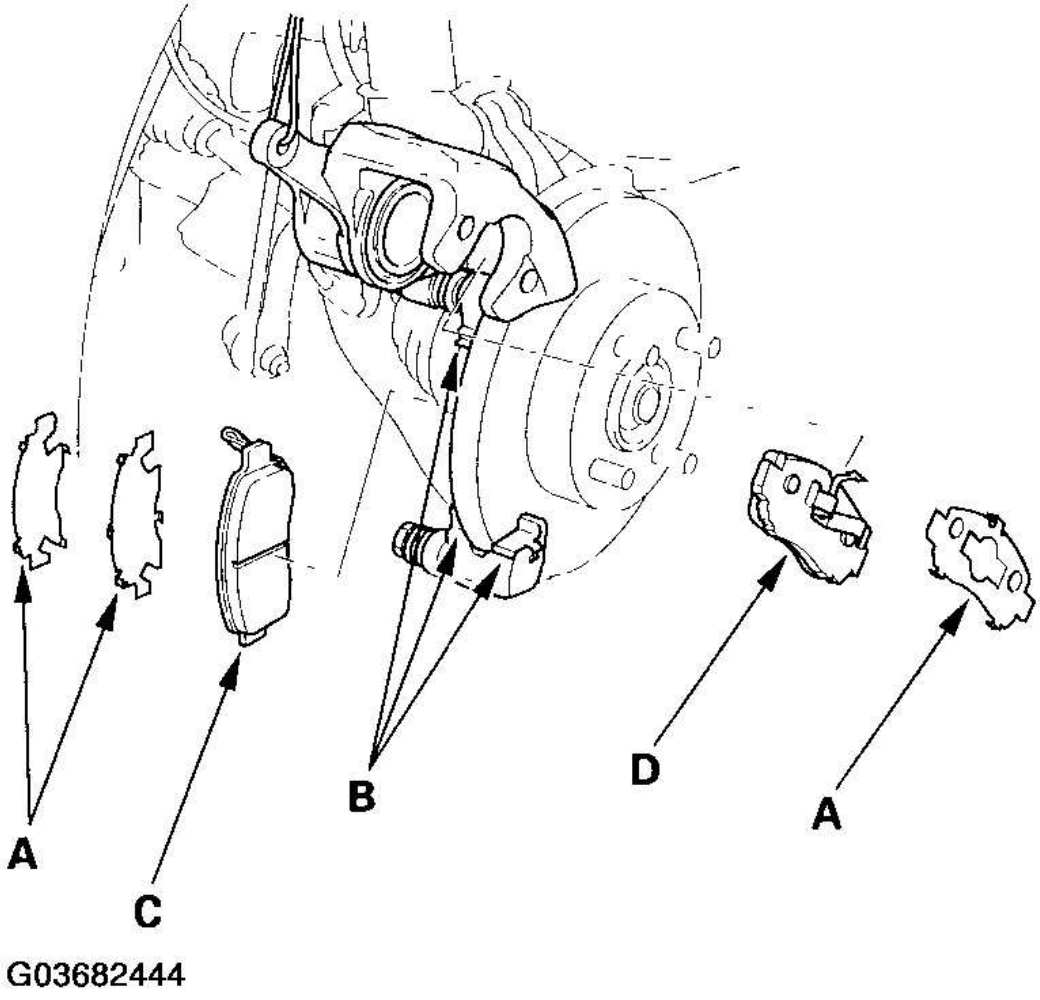

Fig. 17: Removing Pad Shims, Pad Retainers, And Inner Pad And Outer Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Clean the caliper thoroughly and inspect the caliper for cracks.
5. Check the brake disc for damage and cracks.
6. Install the pad retainers (A).

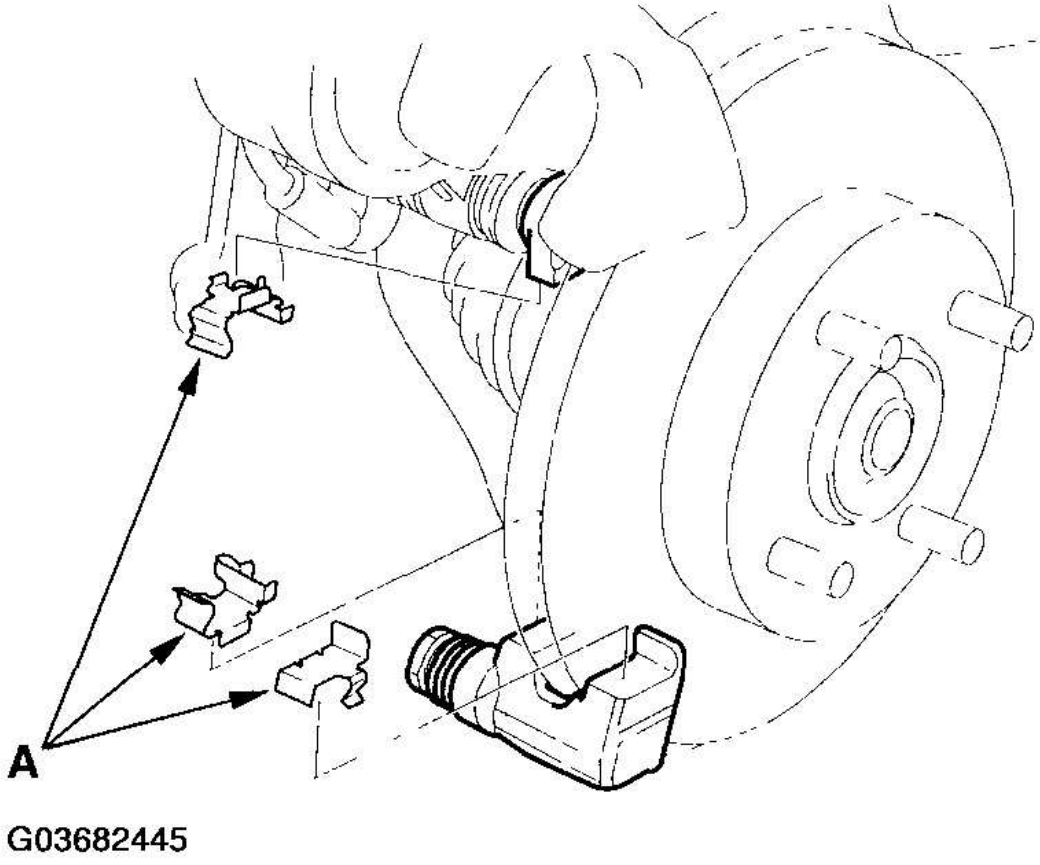

Fig. 18: Installing Pad Retainers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Apply Dow Corning Molykote M-77 assembly paste to both sides of the pad shims (A), the back of the brake pads (B) and other areas indicated by the arrows. Wipe excess assembly paste off the pad shim. Contaminated brake discs or pads reduce stopping ability. Keep assembly paste off the brake discs and brake pads.

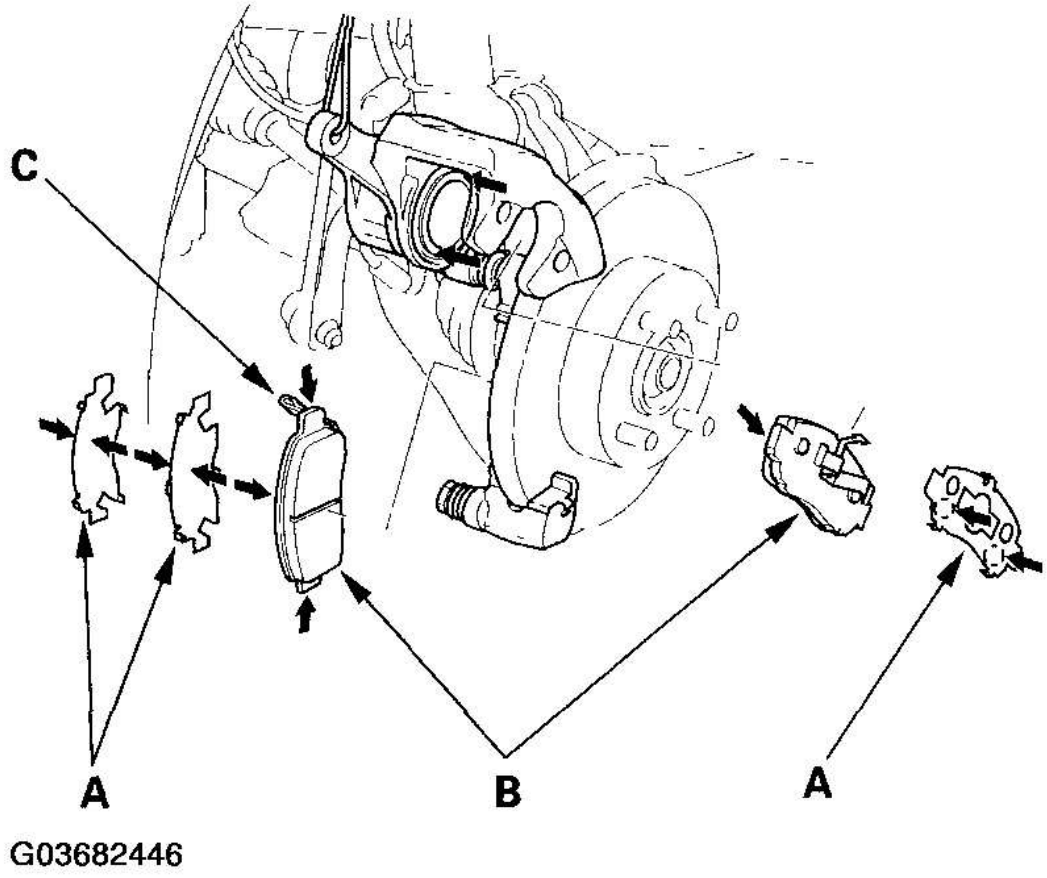

Fig. 19: Identifying Back Of Brake Pads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the brake pads and pad shim correctly.

   Install the brake pad with the wear indicator (C) on the upper 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.

9. 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.

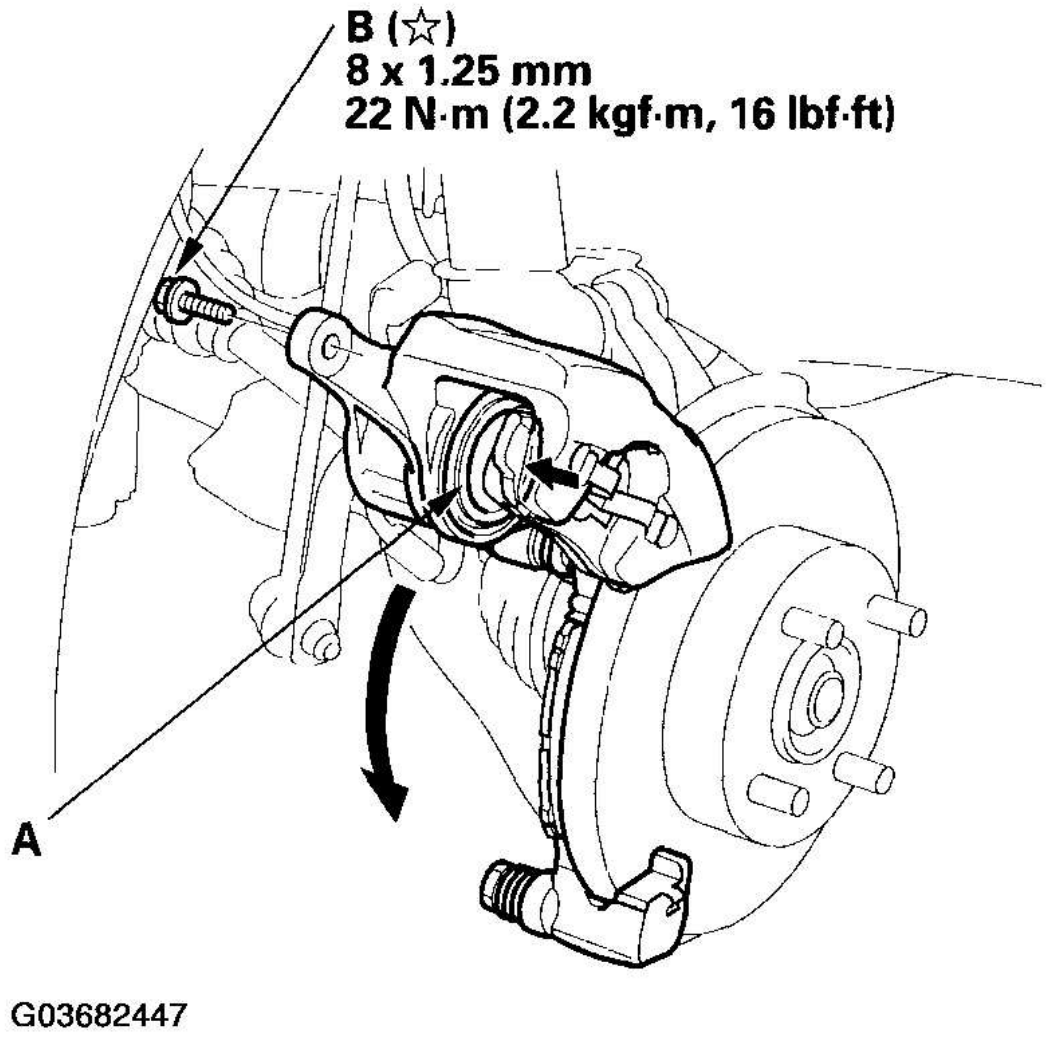

Fig. 20: Pushing In Piston And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pivot the caliper down into position. Being careful not to damage the pin boot, install the bolt (B), and tighten it to the specified torque.
11. Install the brake hose bracket onto the damper.
12. Press the brake pedal several times to make sure the brakes work.

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 **SAFETY STANDS**).
2. Remove the front wheels.
3. Remove the brake pads (see **FRONT BRAKE PAD INSPECTION AND 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, and tighten the nuts to the specified torque to hold the brake disc securely against the hub.

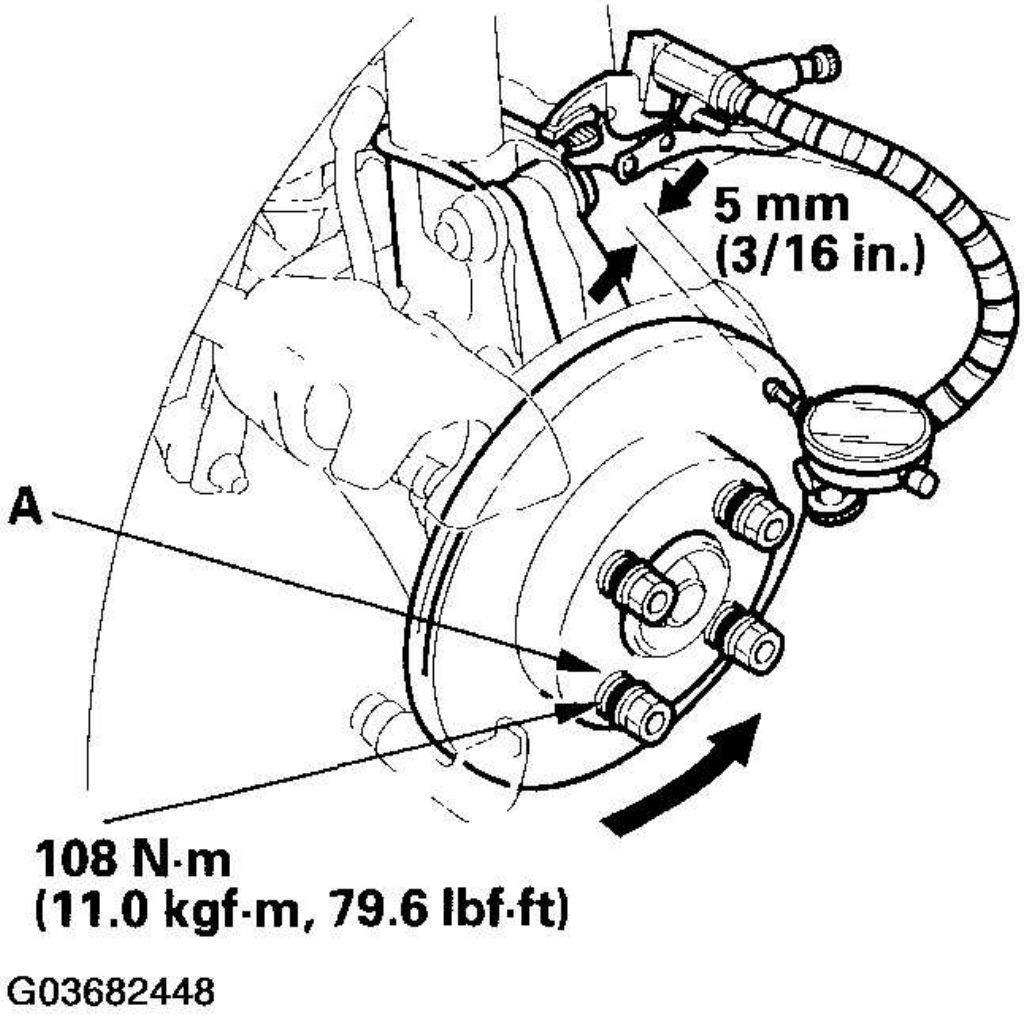

Fig. 21: Installing Suitable Flat Washers And Wheel Nuts With Specified Torques
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set up the dial gauge against the brake disc as shown, and measure the runout at 5 mm (3/16 in.) from the outer edge of the brake disc.

Brake disc runout

Service limit: 0.05 mm (0.002 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. refinishing limit: 15.0 mm (0.59 in.)

   NOTE:
   - **If the brake disc is beyond the service limit for refinishing, replace it (see KNUCKLE/HUB/HUB BEARING UNIT REPLACEMENT).**
   - **A new disc should be refinished if its runout is greater than 0.05 mm (0.002 in.).**

THICKNESS AND PARALLELISM

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **SAFETY STANDS**).
2. Remove the front wheels.
3. Remove the brake pads (see **FRONT BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Using a micrometer, measure disc thickness at eight points, approximately 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: 16.9-17.1 mm (0.665-0.673 in.)
   Max. refinishing limit: 15.0 mm (0.59 in.)

   Brake disc parallelism: 0.03 mm (0.0012 in.) max.

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

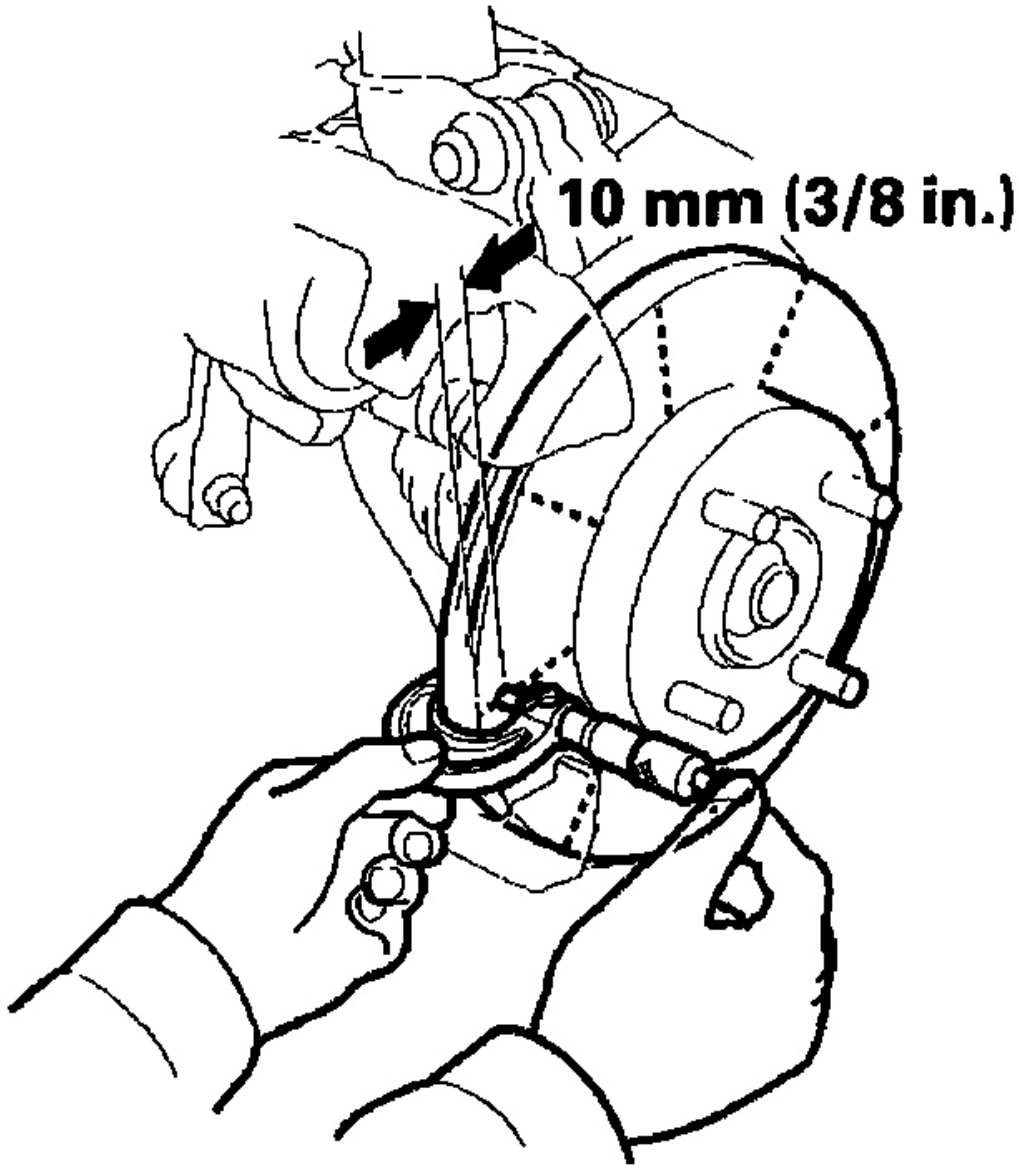

Fig. 22: Measuring Disc Thickness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the brake disc is beyond the service limit for parallelism, refinish the brake

disc with 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 KNUCKLE/HUB/HUB BEARING UNIT REPLACEMENT).

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.**

NOTE: To avoid damage, do not strike aluminum parts with a metal hammer. If necessary, tap gently with a plastic-tipped hammer.

NOTE: Bolts and nuts with the * mark are special corrosion-resistant Dacro fasteners. Use the same type if replacement is necessary.

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, 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 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 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.

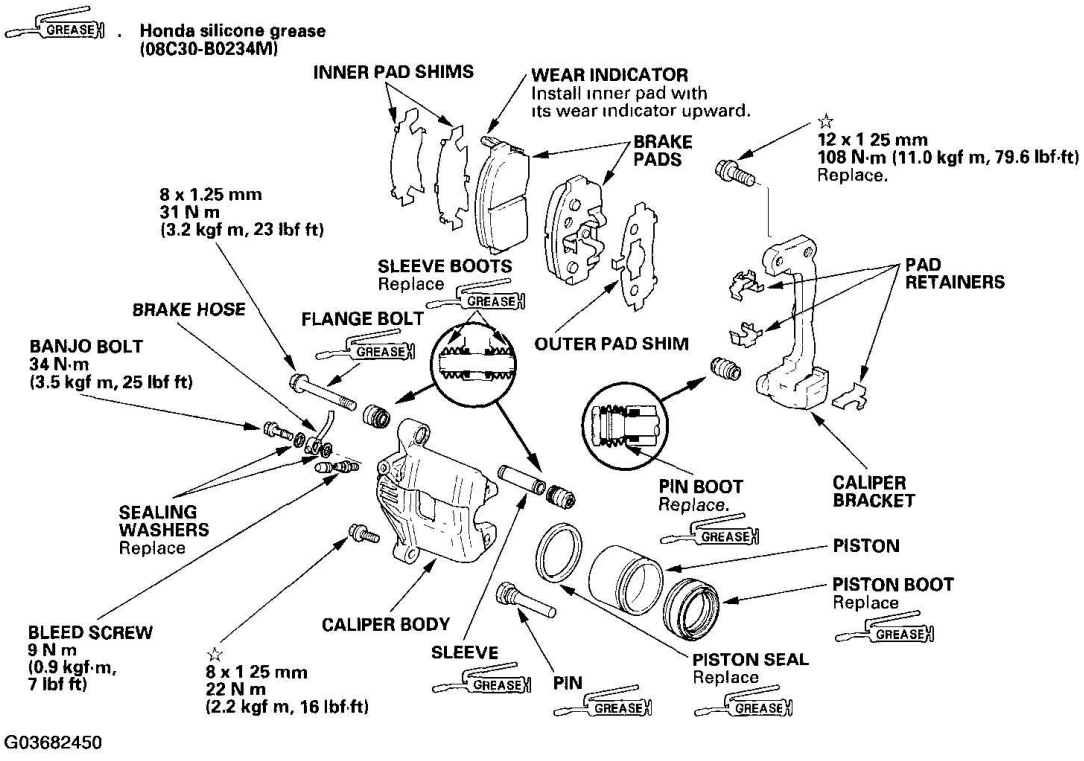

Fig. 23: Identifying Front Brake Caliper Components And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MASTER CYLINDER REPLACEMENT

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

1. Remove the reservoir cap, and remove the brake fluid.
2. Disconnect the brake fluid level switch connector (A) from the reservoir (B), and disconnect the brake lines (C) from the master cylinder (D). To prevent spills, cover the hose joints with rags or shop towels.

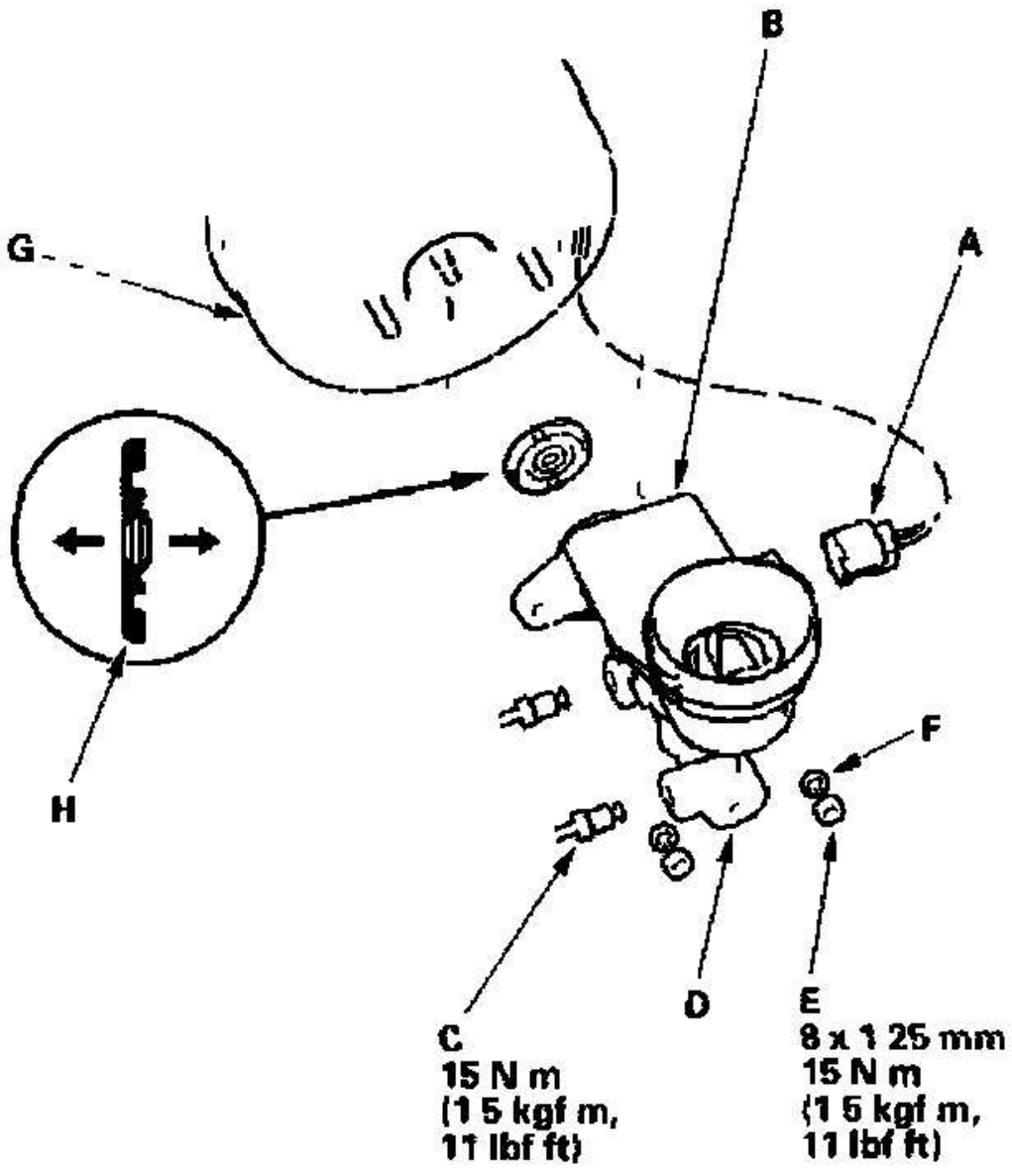

Fig. 24: Disconnecting Brake Fluid Level Switch Connector From Reservoir And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the master cylinder mounting nuts (E) and washers (F).
4. Remove the master cylinder from the brake booster (G). Be careful not to bend or damage the brake lines when removing the master cylinder.
5. Remove the rod seal (H) from the brake booster.
6. Install the master cylinder in the reverse order of removal, and note these items:
   - Check master cylinder pushrod adjustment (see **MASTER CYLINDER PUSHROD CLEARANCE ADJUSTMENT**).
   - Replace all rubber parts with new ones whenever removed.
   - Coat the lip of the new rod seal with the recommended seal grease in the master cylinder set.
   - Install the rod seal onto the brake booster with its grooved side toward the master cylinder.
7. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
8. Spin the wheels to check for brake drag.
9. Check for leaks at the line joints, and retighten if necessary.

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.**

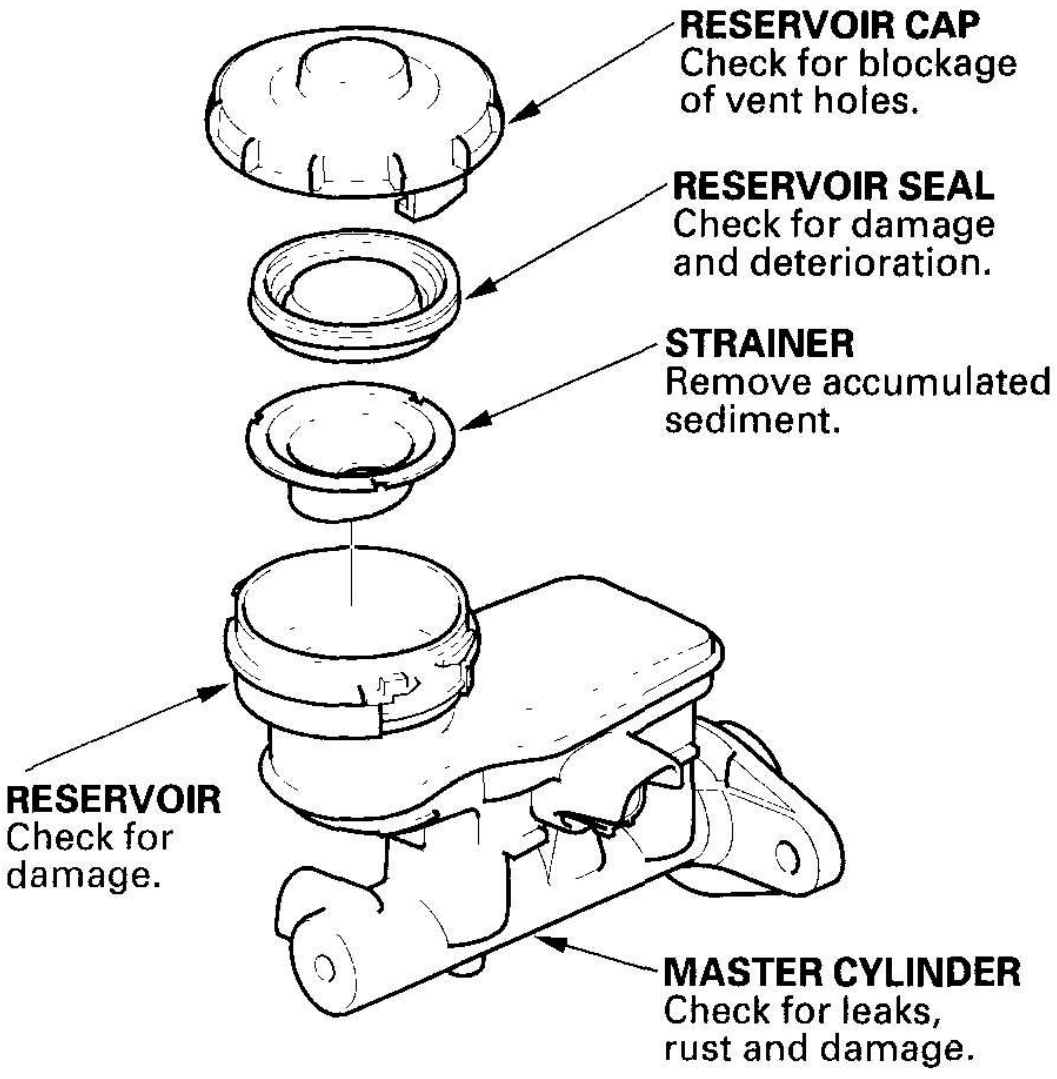

Fig. 25: Inspecting Master Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MASTER CYLINDER PUSHROD CLEARANCE ADJUSTMENT

Special Tools Required

Pushrod adjustment gauge 07JAG-SD40100

NOTE: Master cylinder 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).

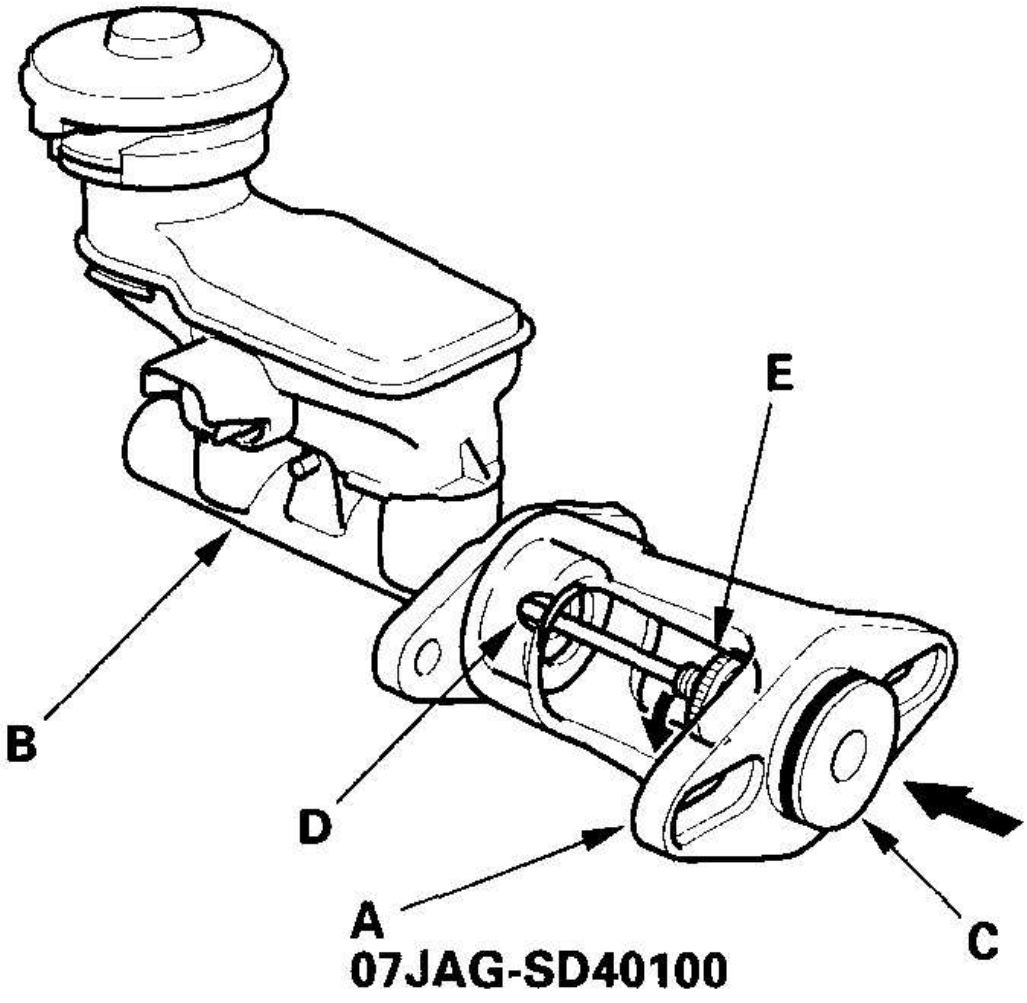

Fig. 26: Setting Special Tool On Master Cylinder Body

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

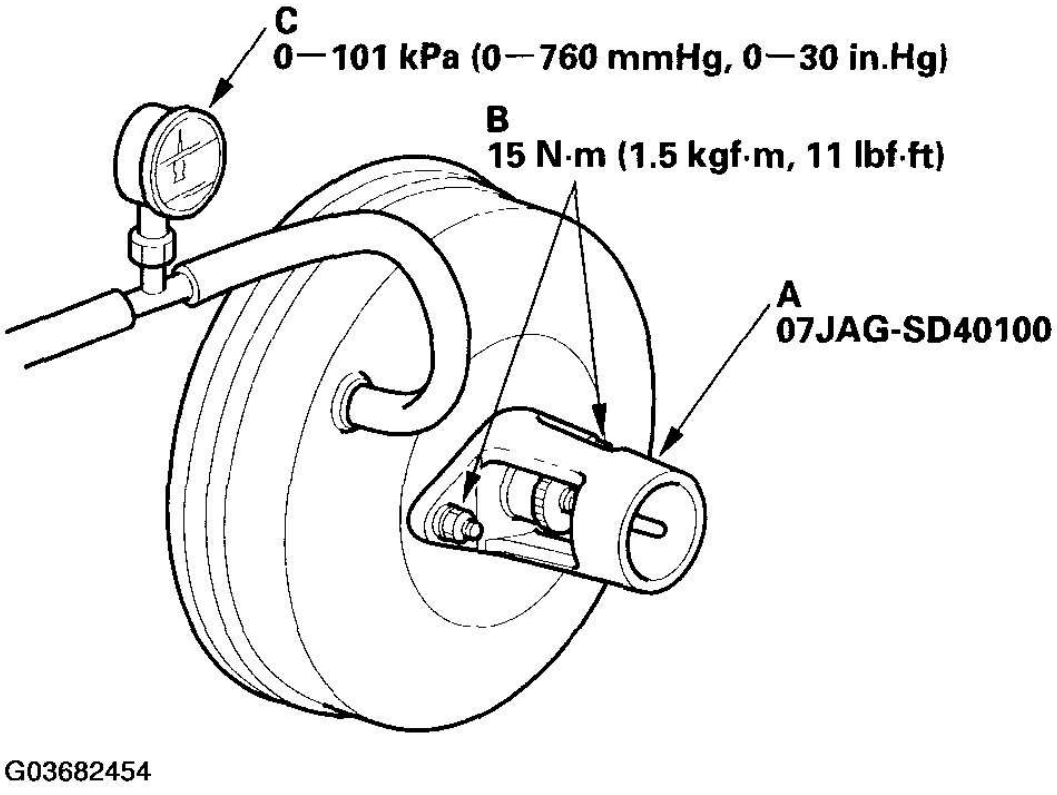

Fig. 27: Installing Special Tool Backwards On Booster And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the master cylinder nuts (B), and tighten 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.)

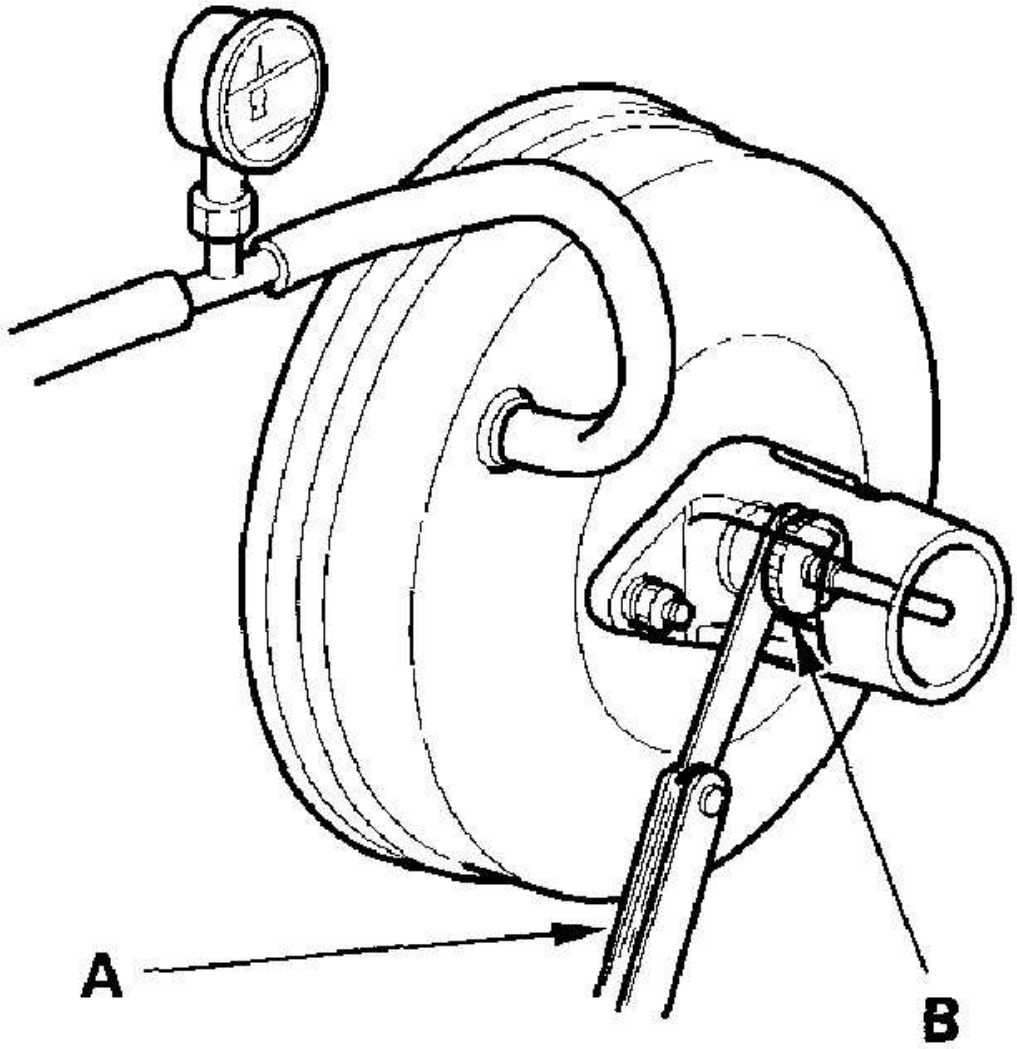

Fig. 28: Installing Master Cylinder Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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.

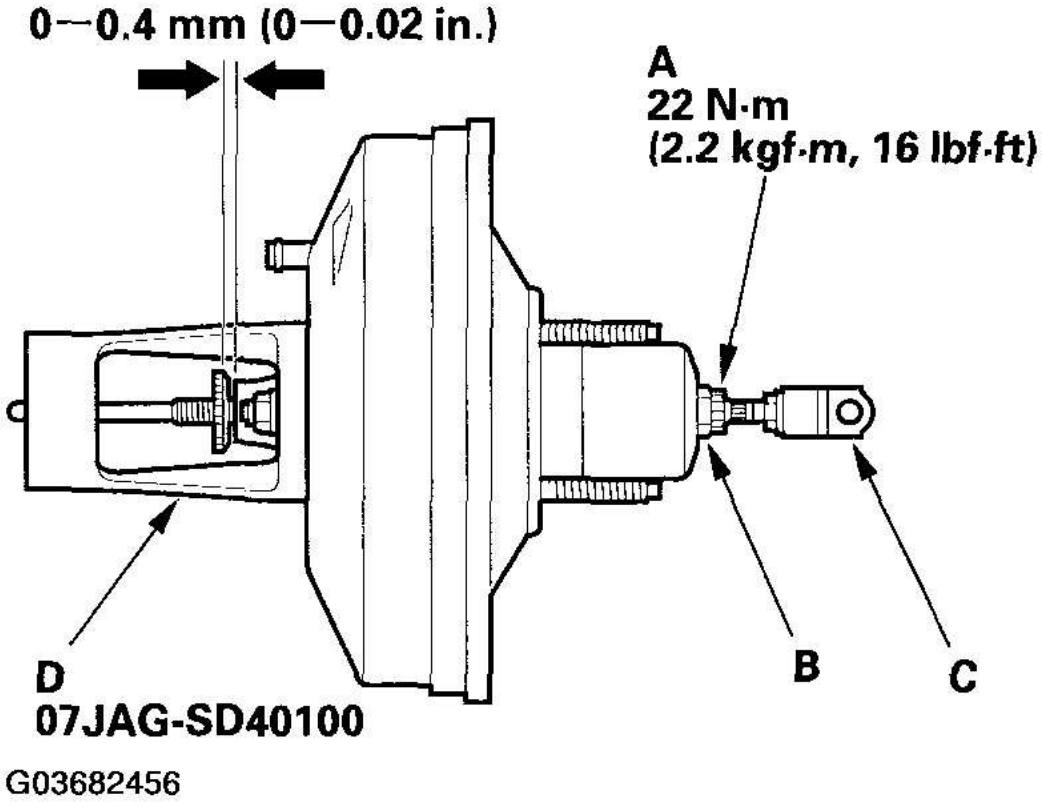

Fig. 29: Holding Yoke While Adjusting And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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.

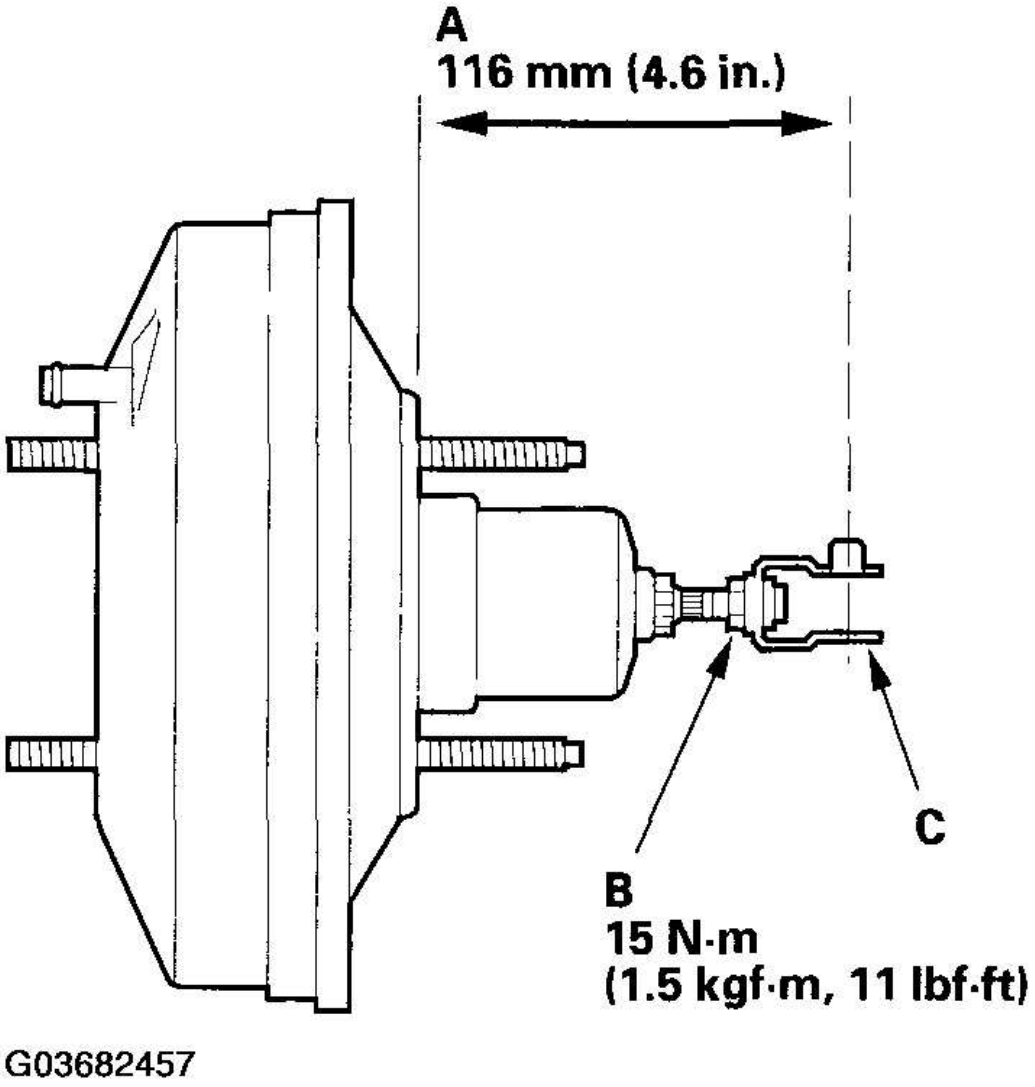

Fig. 30: Checking Pushrod Length And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

BRAKE BOOSTER TEST

FUNCTIONAL TEST

1. With the engine 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, ABS modulator-control unit, creep aid solenoid valve, brake fluid pressure sensors, proportioning valve, calipers, or wheel cylinders) 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. 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 pedal height does not vary while pressed for 30 seconds, the vacuum booster is OK. If the pedal rises, the booster is faulty.
2. With the engine stopped, 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 brake pedal position does not vary, check the booster check valve.
3. Disconnect the brake booster vacuum hose (check valve built in) (A) at the booster (B) side.

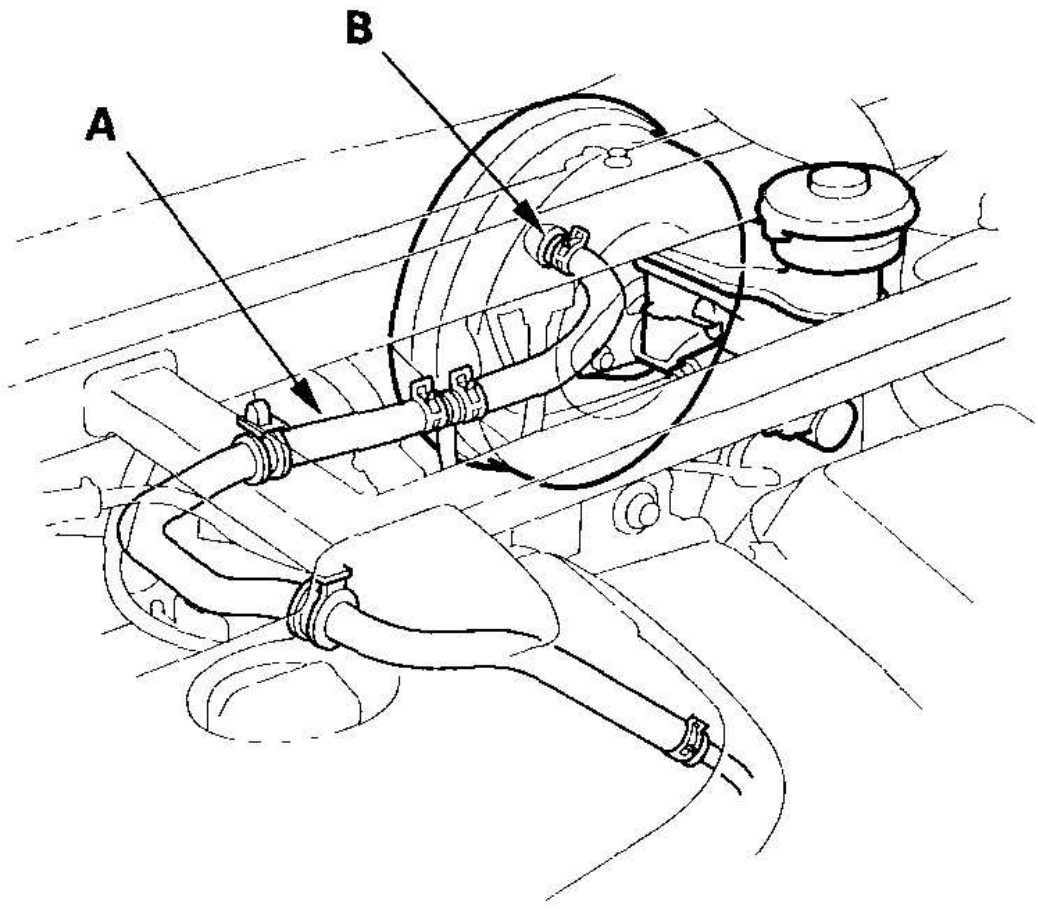

Fig. 31: Disconnecting Brake Booster Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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.
5. Start the engine, and then pinch the brake booster vacuum hose between the check valve and the booster.
6. Turn the engine 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 brake pedal height should gradually rise.

- If the brake pedal position does not vary, replace the brake booster.
- If the brake pedal position varies, replace the brake booster vacuum hose/check valve assembly.

BRAKE BOOSTER REPLACEMENT

NOTE: Bolts and nuts with the * mark are special corrosion-resistant Dacro fasteners. Use the same type if replacement is necessary.

1. Make sure you have the anti-theft codes for the radio, then write down the presets.
2. Disconnect the battery cables, and remove the battery from the battery box (A).

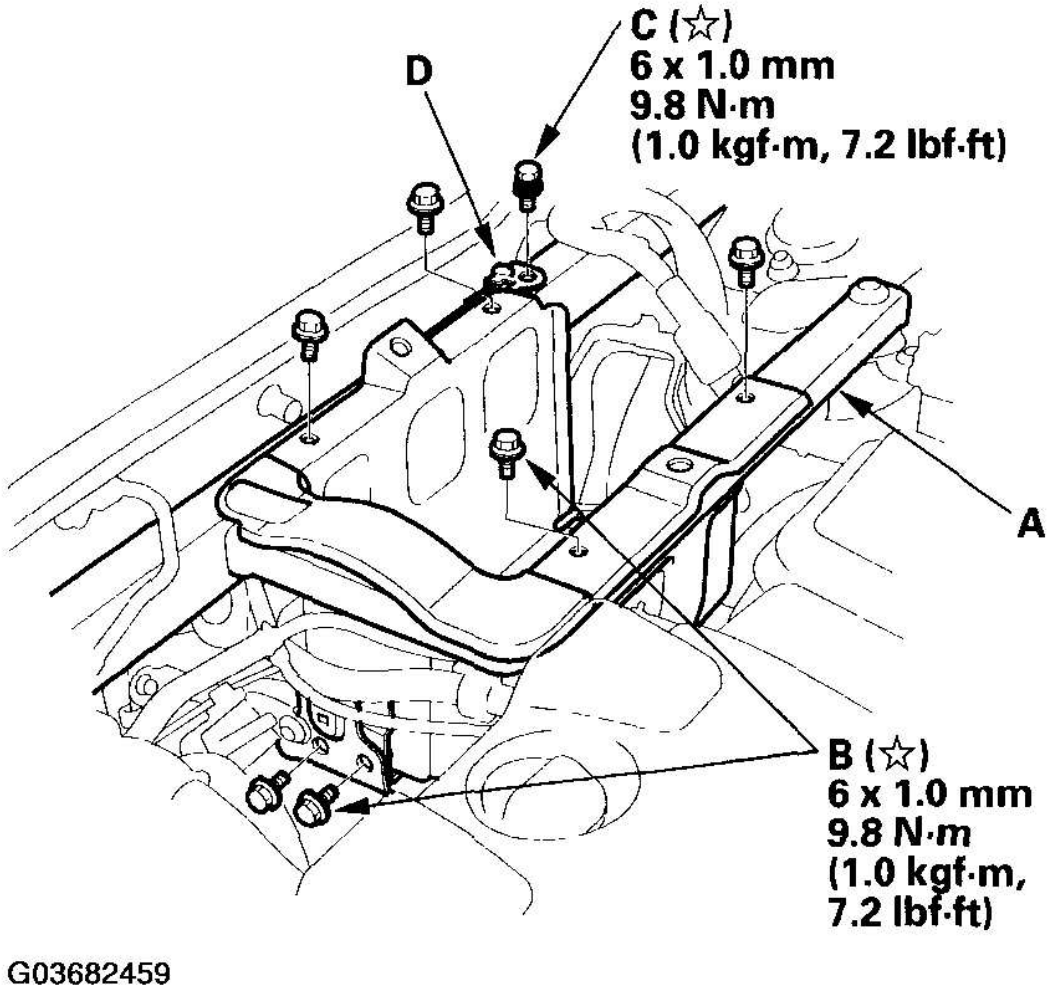

Fig. 32: Removing Battery From Battery Box And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the master cylinder (see **MASTER CYLINDER REPLACEMENT**).
4. Remove the six flange bolts (B) and the battery box.
5. Remove the flange bolts (C) and vacuum valve bracket (D).
6. Remove the two 6 mm flange bolts (A), and detach the fuel line/hose (B) from the battery box bracket (C).

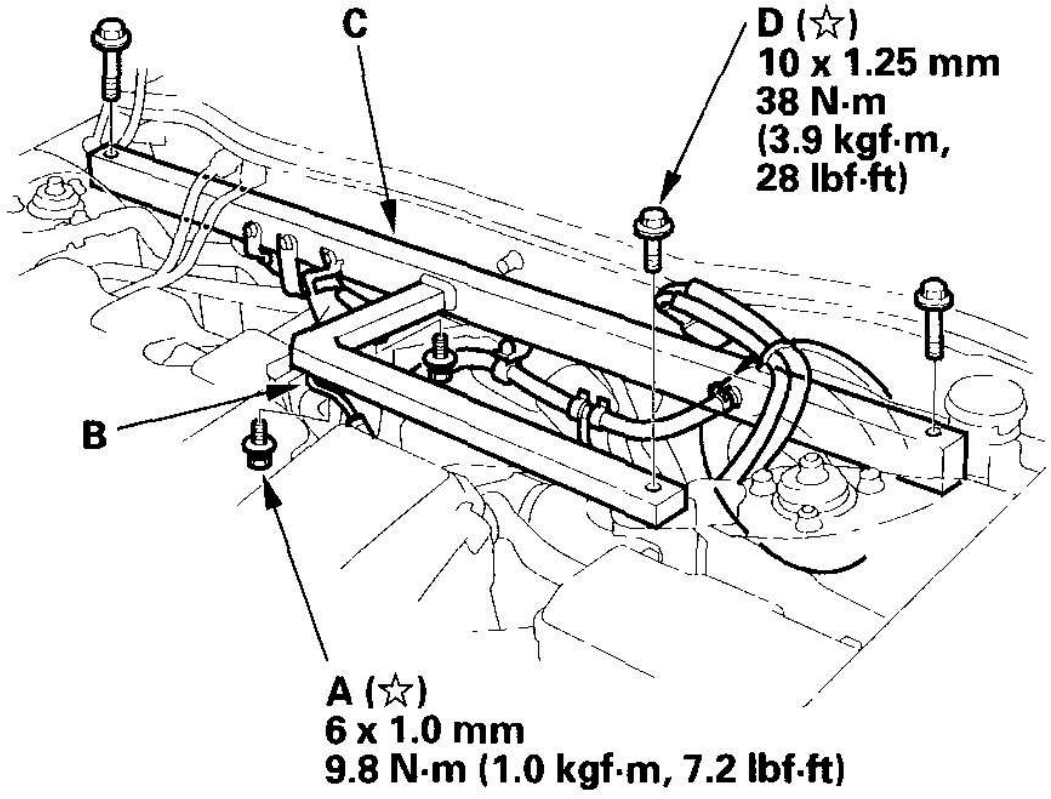

Fig. 33: Detaching Fuel Line/Hose From Battery Box Bracket And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the flange bolts (D).
8. Remove the lock pin (A) and the joint pin (B), then disconnect the yoke from the brake pedal.

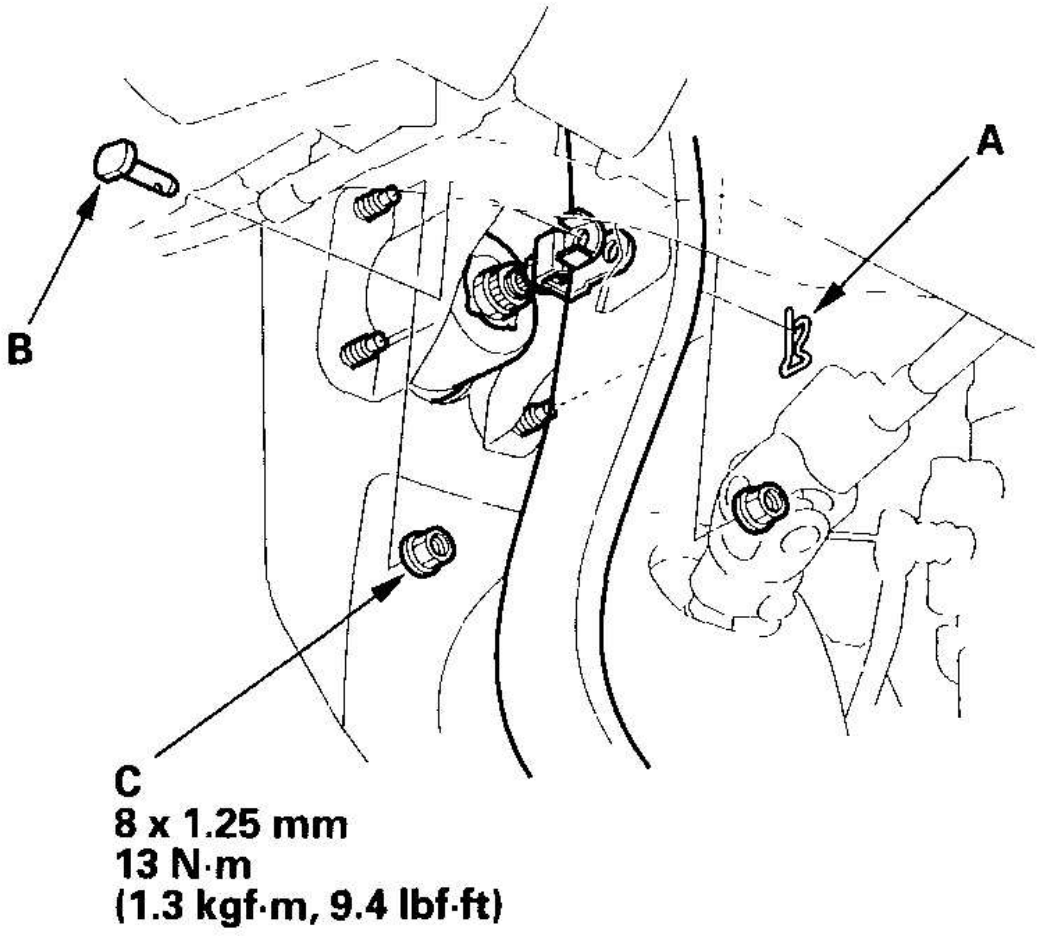

Fig. 34: Removing Lock Pin, Joint Pin And Disconnecting Yoke From Brake Pedal With Specified Torques
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the brake booster mounting flange nuts (C).
10. Raise the front of the battery box bracket (A), and pull out the brake booster (B) from the engine compartment.

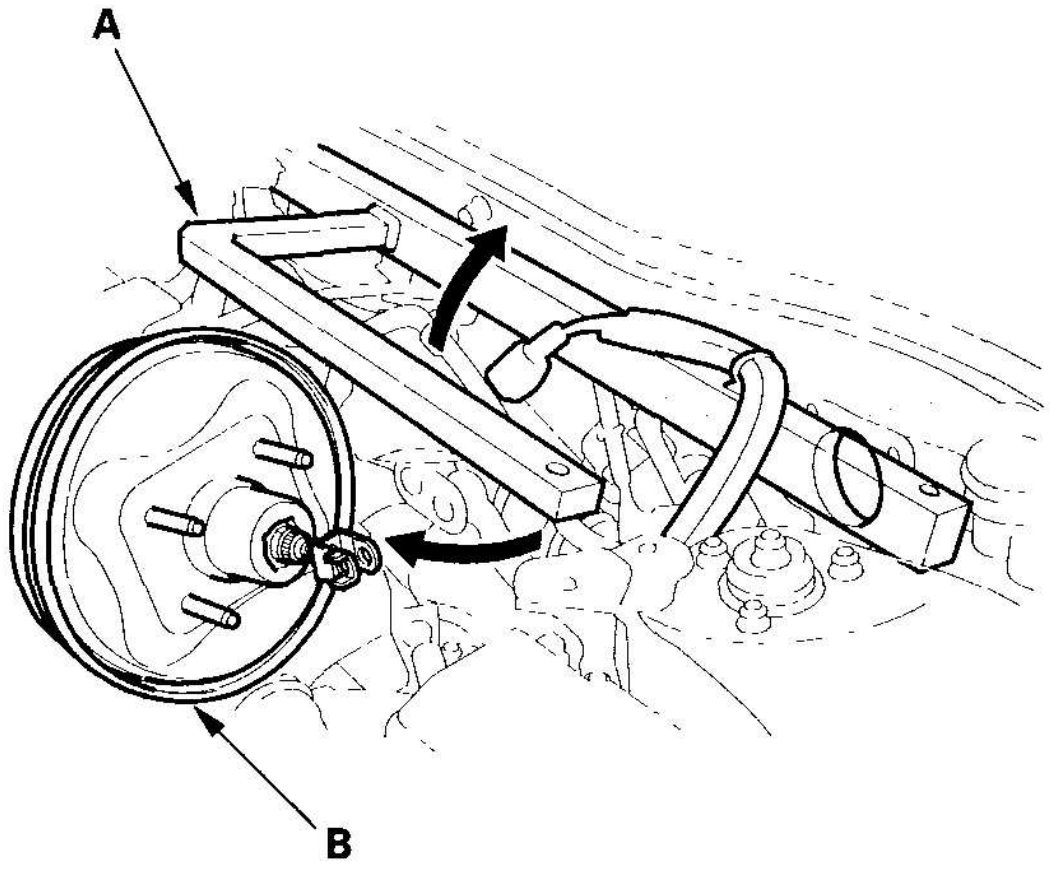

Fig. 35: Pulling Out Brake Booster From Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the brake booster in the reverse order of removal, and note these items:
    - Adjust the pushrod length before installing the brake booster (see step 9).
    - After installing, adjust the brake pedal height and brake pedal free play (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH/IDLE STOP SWITCH ADJUSTMENT**).
    - Use a new lock pin whenever installing.
    - Enter the anti-theft codes for the radio, then reset the customer's radio presets.

- Set the clock.
- Do the ECM idle learn procedure (see **ECM IDLE LEARN PROCEDURE**).

12. Remove the No. 15 EPS (40 A) fuse from the under-hood fuse/relay box.
13. If the IMA battery level gauge (BAT) displays no segments, start the engine, and hold it between 3,500 RPM and 4,000 rpm without load (in Park or neutral) until the BAT displays at least three segments.
14. Reinstall the No. 15 EPS (40 A) fuse.

CREEP AID SOLENOID VALVE REPLACEMENT

FOR CVT MODEL

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.**
- **Before replacing the creep aid solenoid valve, refer to the CVT for troubleshooting (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Disconnect the creep aid solenoid valve 4P connector (A).

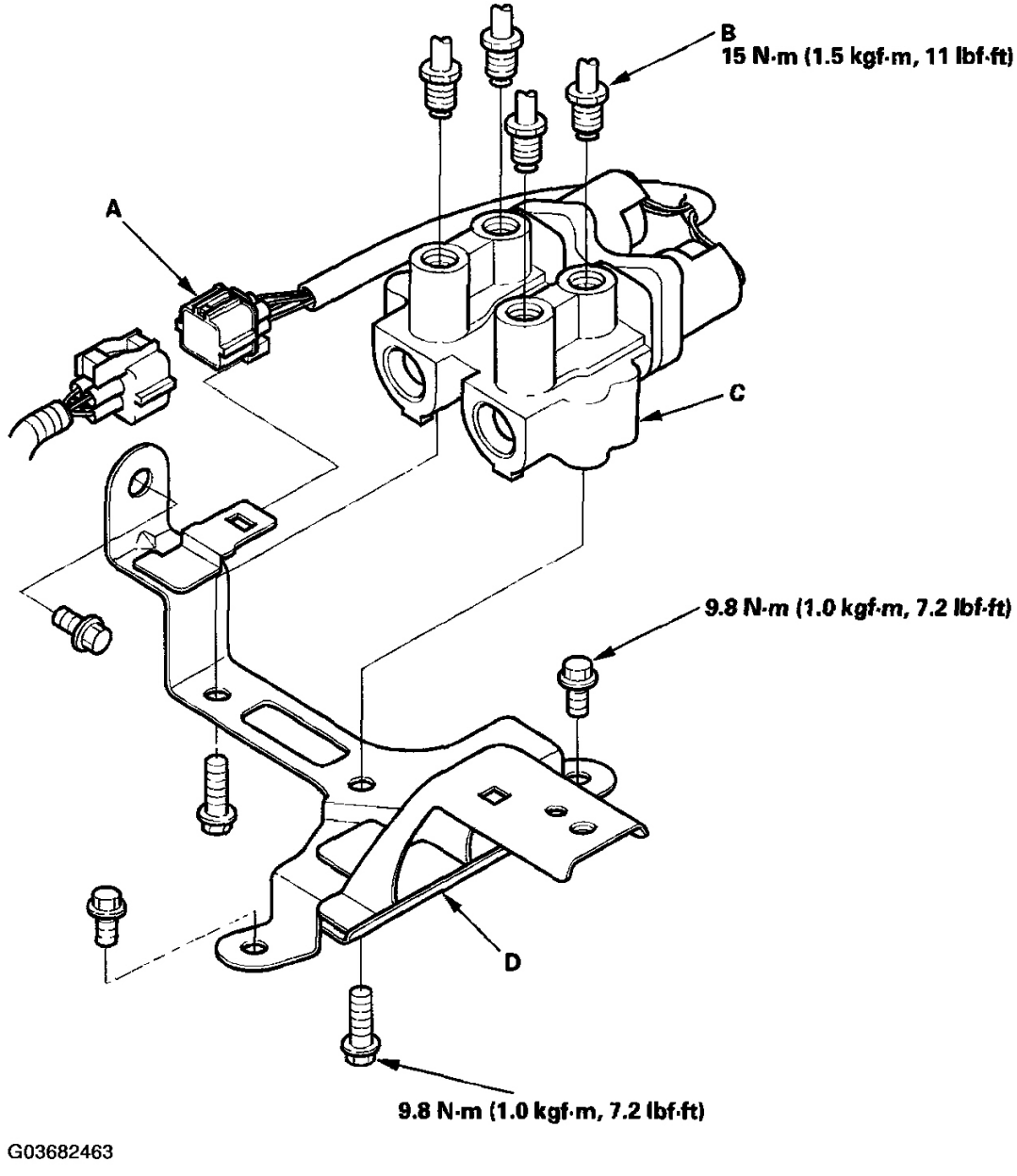

Fig. 36: Disconnecting Creep Aid Solenoid Valve 4P Connector And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the brake lines (B) from the creep aid solenoid valve (C).
3. Remove the creep aid solenoid valve with the bracket (D) from the body.
4. Separate the solenoid valve and bracket.

5. Install the creep aid solenoid valve in the reverse order of removal.
6. Fill the master cylinder reservoir with new brake fluid, and bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
7. Do the following checks:
   - Check the brake line joints for leaks, and tighten if necessary.
   - Check the creep aid for proper operation during a test-drive.

BRAKE FLUID PRESSURE SENSOR REPLACEMENT

FOR 2005-2006 M/T MODELS

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. Disconnect the brake fluid pressure sensor 3P connectors (C).

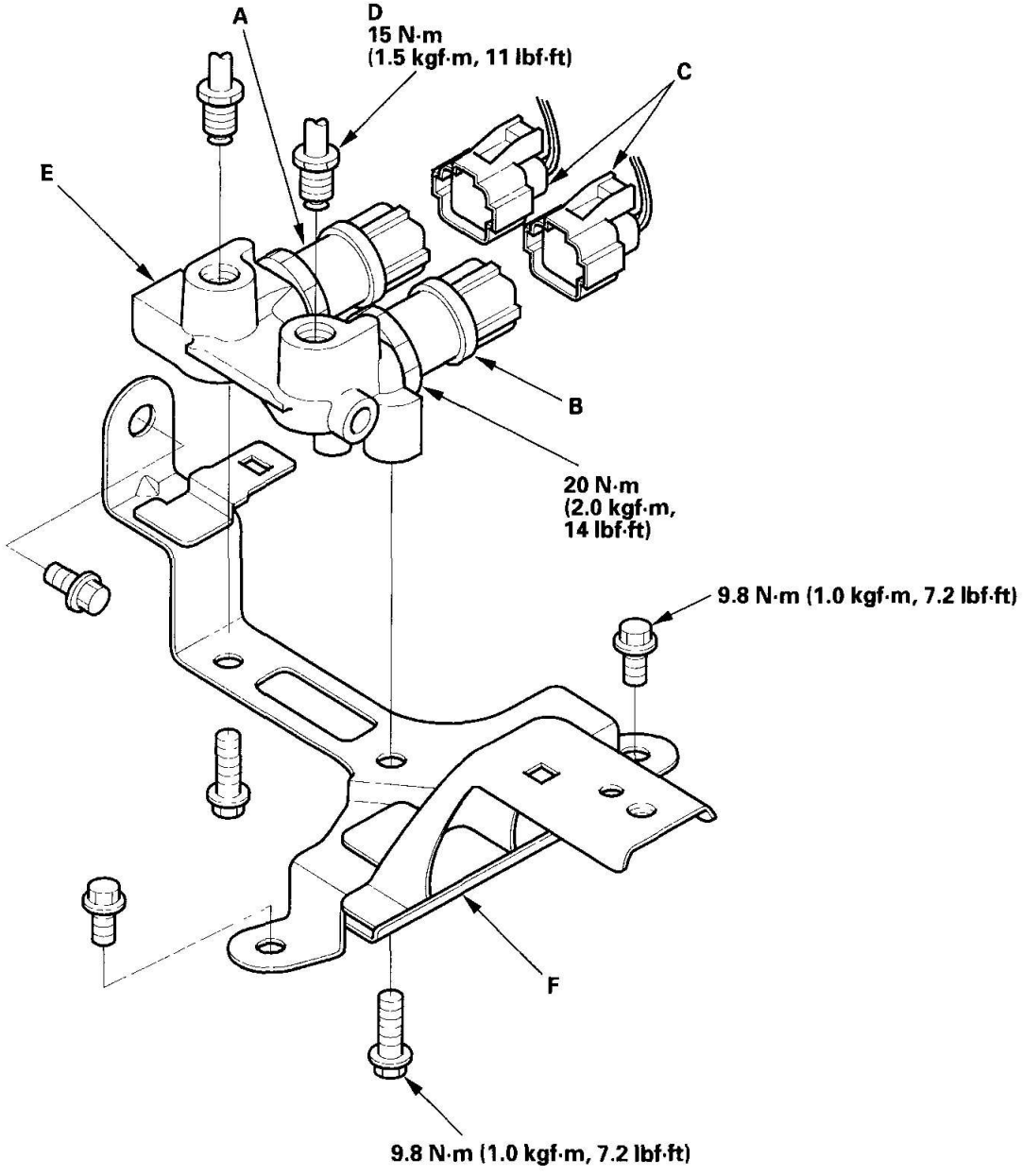

Fig. 37: Disconnecting Brake Fluid Pressure Sensor 3P Connectors And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the brake lines (D) from the brake pipe joint (E).
3. Remove the brake pipe joint with the bracket (F) from the body.

4. Separate the brake pipe joint, bracket, brake fluid pressure sensor A and sensor B.
5. Install the brake fluid pressure sensors in the reverse order of removal.
6. Fill the master cylinder reservoir with new brake fluid, and bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
7. Do the following checks: Check the brake line joints for leaks, and tighten if necessary.

REAR DRUM 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.**

NOTE: To avoid damage, do not strike aluminum parts with a metal hammer. If necessary, tap gently with a plastic-tipped hammer.

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **SAFETY STANDS**). Remove the rear fender skirts (see **REAR INNER FENDER REPLACEMENT**), and rear wheels.
2. Release the parking brake, and remove the brake drum (see **HUB BEARING UNIT REPLACEMENT**).

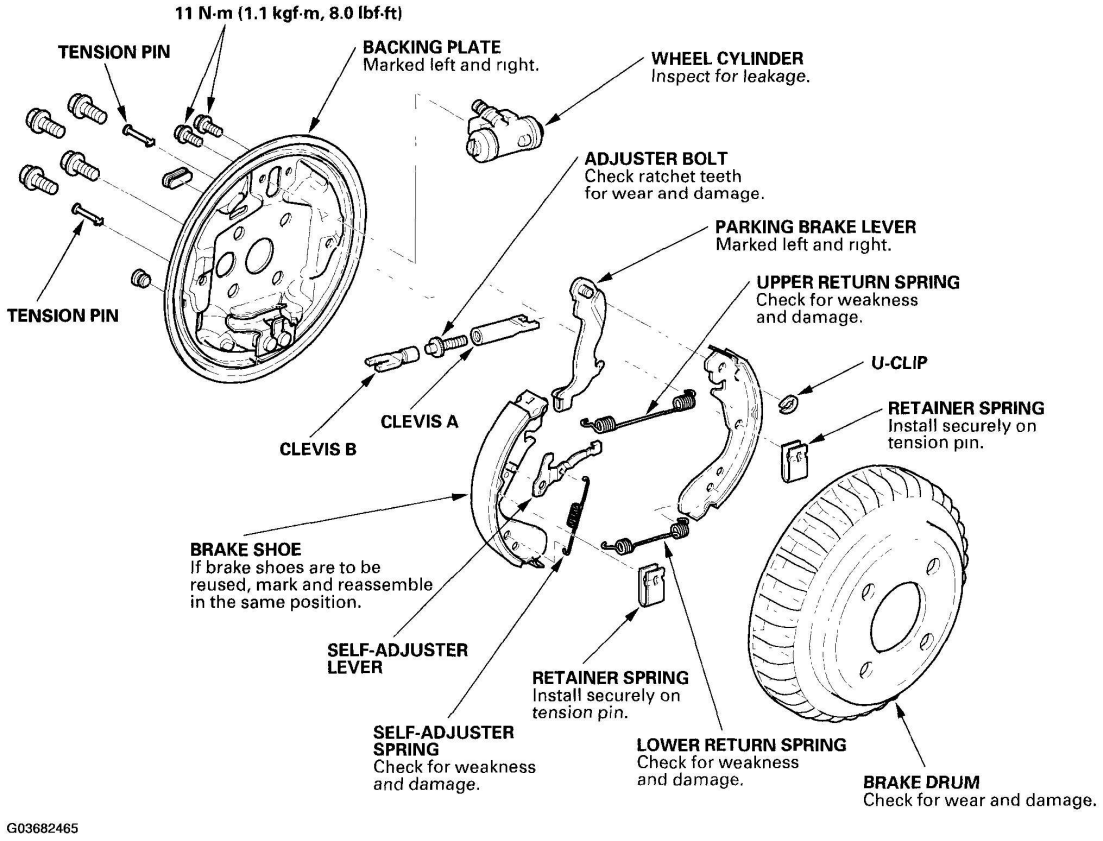

Fig. 38: Removing Brake Drum And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the wheel cylinder (A) for leakage.

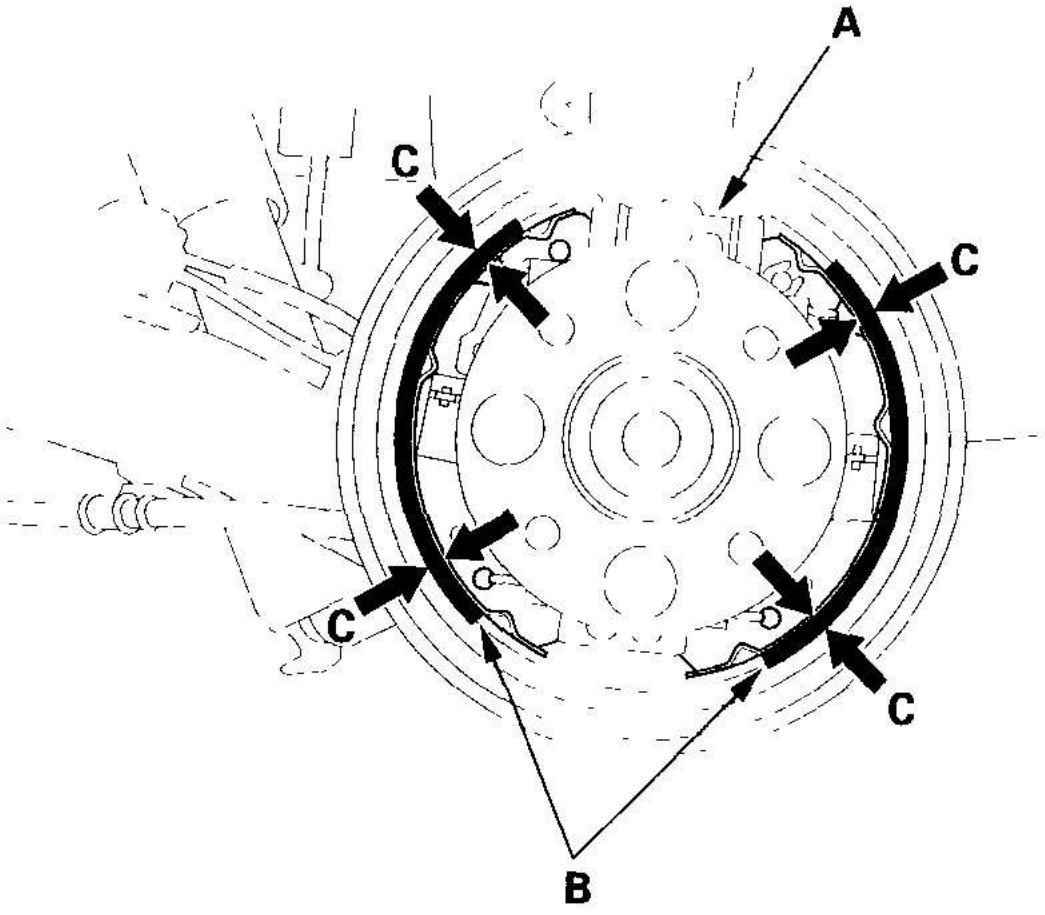

Fig. 39: Checking Wheel Cylinder For Leakage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the brake linings (B) for cracking, glazing, wear, and contamination.
5. Measure the brake lining thickness (C).

   Measurement does not include brake shoe thickness.

   Brake lining thickness

   Standard: 4.3 mm (0.17 in.)

Service limit: 1.0 mm (0.04 in.)

6. If the brake lining thickness is less than the service limit, replace the brake shoes as a set.
7. Check the hub bearing for smooth operation. If it requires servicing, replace it (see **HUB BEARING UNIT REPLACEMENT**).
8. Measure the inside diameter of the brake drum with inside vernier calipers.

Drum inside diameter

Standard: 179.9-180.0 mm (7.083-7.087 in.)

Service limit: 181.0 mm (7.126 in.)

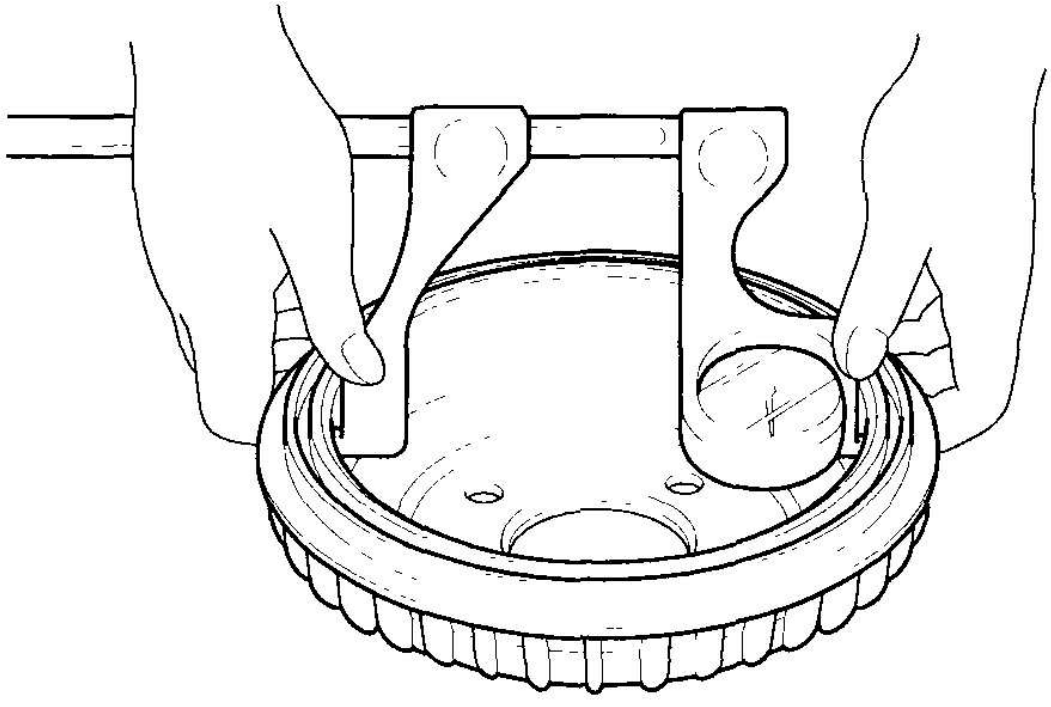

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Fig. 40: Measuring Inside Diameter Of Brake Drum With Inside Vernier Calipers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the inside diameter of the brake drum is beyond the service limit, replace the brake drum.
10. Check the brake drum for scoring, grooves, cracks, and corrosion.

REAR BRAKE SHOE REPLACEMENT

REMOVAL/DISASSEMBLY

NOTE: To avoid damage, do not strike aluminum parts with a metal hammer. If necessary, tap gently with a plastic-tipped hammer.

1. Remove the brake drum (see **HUB BEARING UNIT REPLACEMENT**).
2. Remove the upper return spring (A) and lower return spring (B).

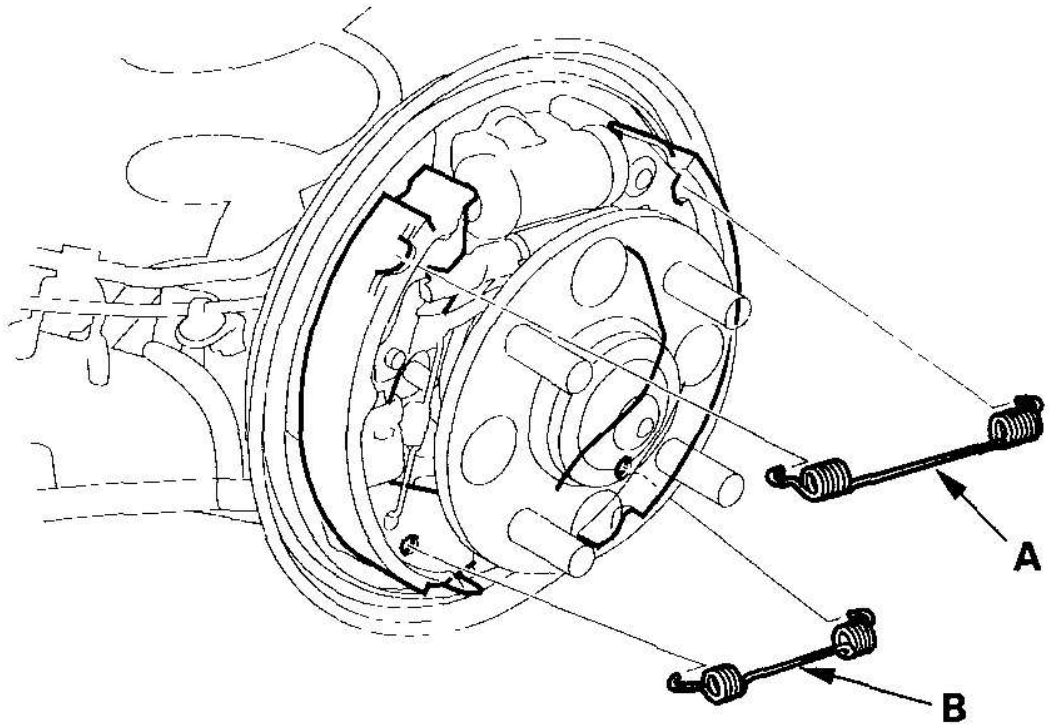

Fig. 41: Removing Upper Return Spring And Lower Return Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the tension pins (A) by turning them while pushing each retainer spring (B).

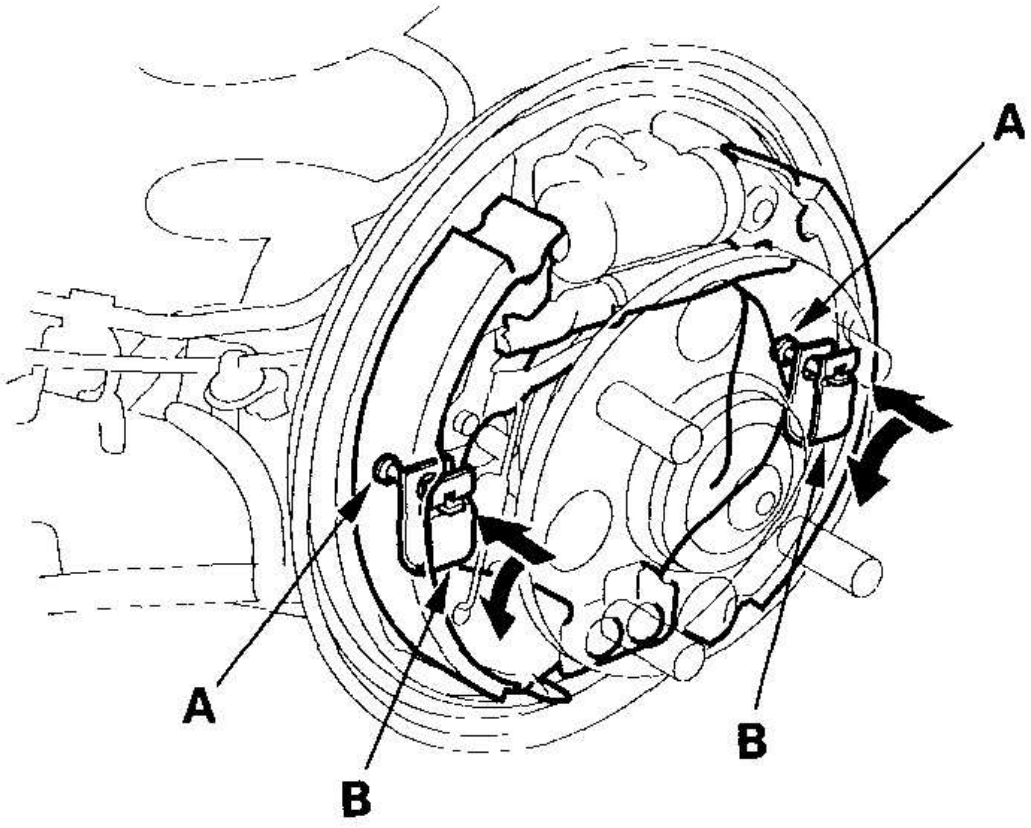

Fig. 42: Removing Tension Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the parking brake cable from the parking brake lever, and remove the brake shoes from the backing plate.
5. Remove the clevis A, adjuster bolt (C), and clevis B, and separate the brake shoes (D).

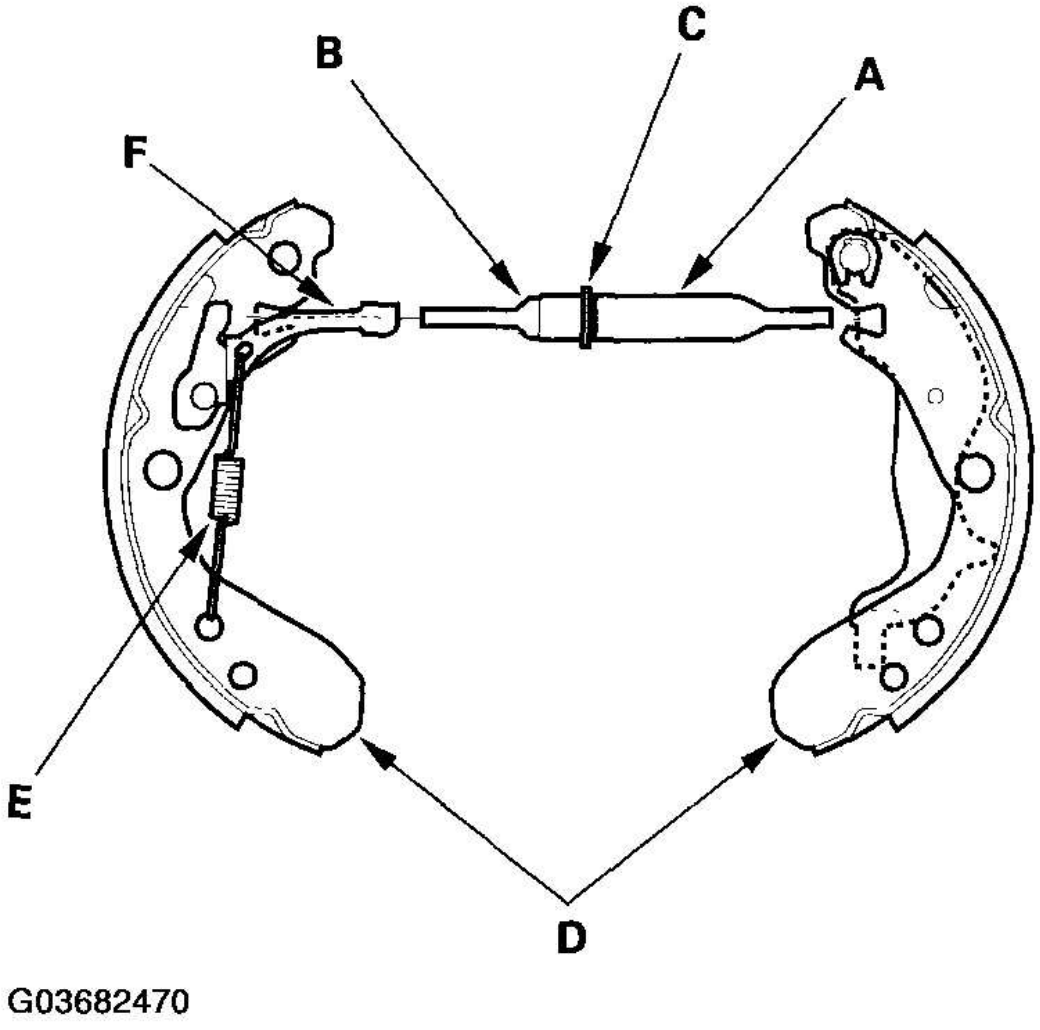

Fig. 43: Removing Clevis A, B And Adjuster Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the self-adjuster spring (E) and self-adjuster lever (F).
7. Remove the U-clip (A), and remove the parking brake lever (B) from the rear side shoe (C).

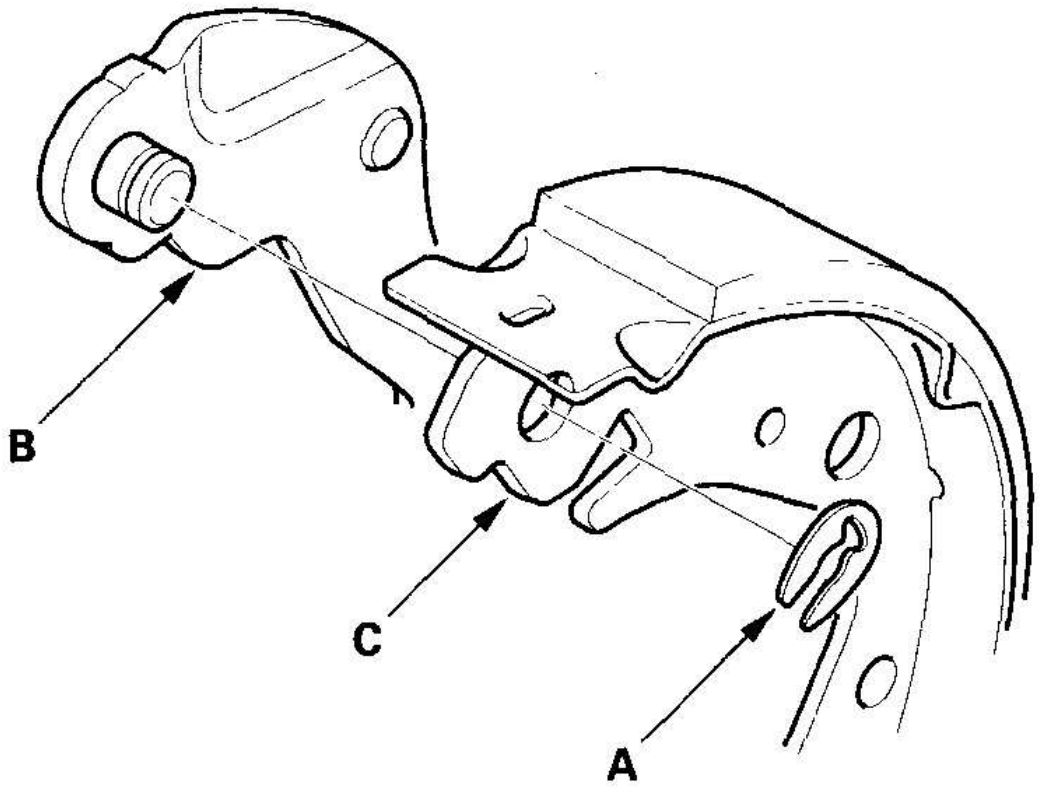

Fig. 44: Removing U-Clip And Parking Break Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

1. Install the parking brake lever (A) on the rear brake shoe (B), and secure it with a new U-clip (C). Pinch the U-clip securely to prevent it from coming off.

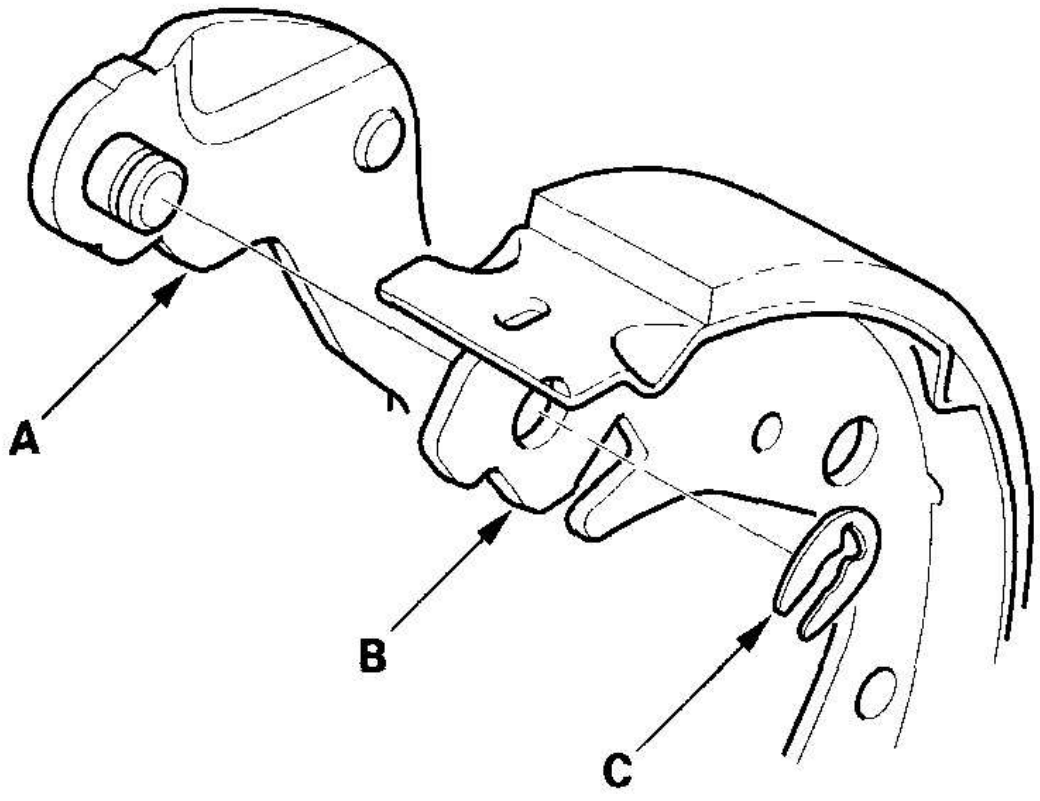

Fig. 45: Installing Parking Brake Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply Molykote 44 MA grease to the backside edges of the brake shoes where shown. Wipe off any excess. Do not get grease on the brake linings.

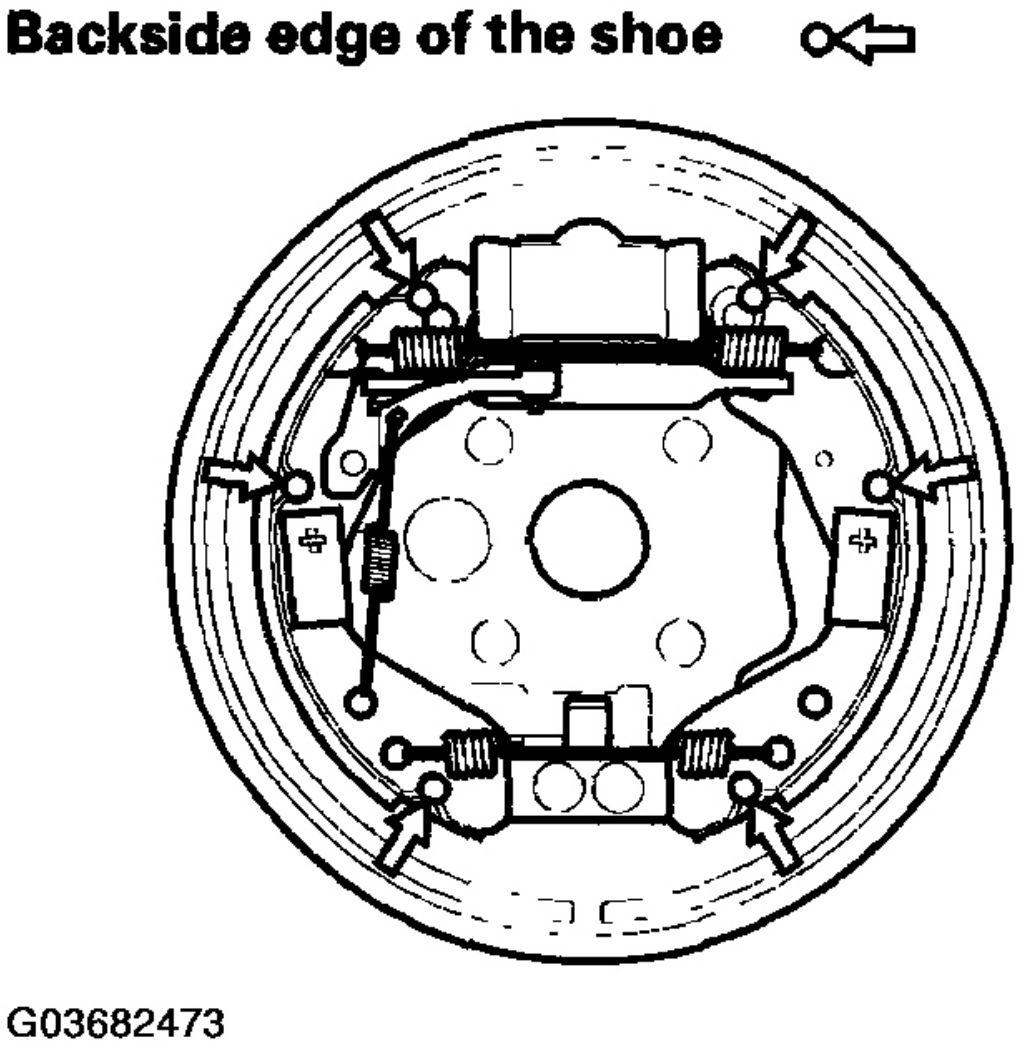

Fig. 46: Applying Molykote 44 MA Grease To Backside Edges Of Brake Shoes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the self-adjuster (C) and self-adjuster spring (D) on the front side brake shoe (E).

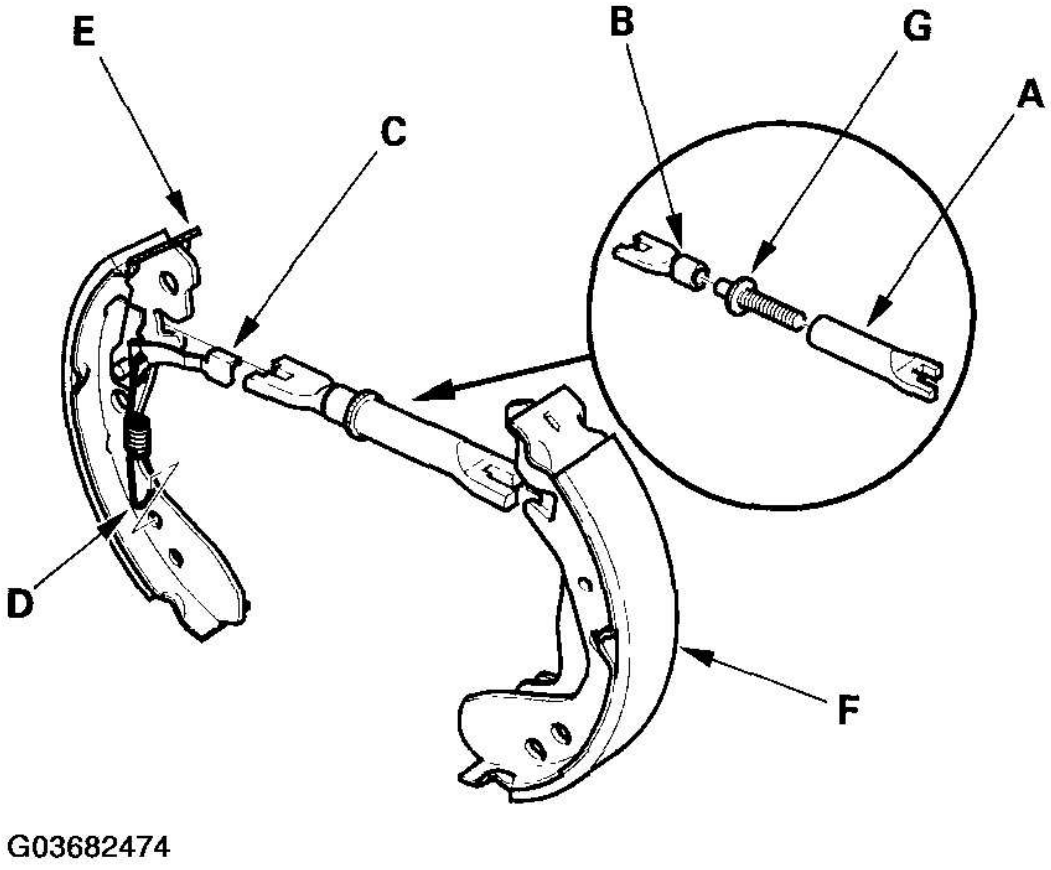

Fig. 47: Installing Self-Adjuster And Self-Adjuster Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Connect the parking brake cable to the rear side brake shoe (F), and assemble the brake shoes with the clevis A, adjuster bolt (G), and clevis B.
5. Install the brake shoes on the backing plate, fitting the top of the brake shoes on the wheel cylinder pistons and the bottom of the brake shoes on the locating plate.
6. Install the tension pins (A), and secure them with the retainer springs by turning them while pushing each retainer spring (B).

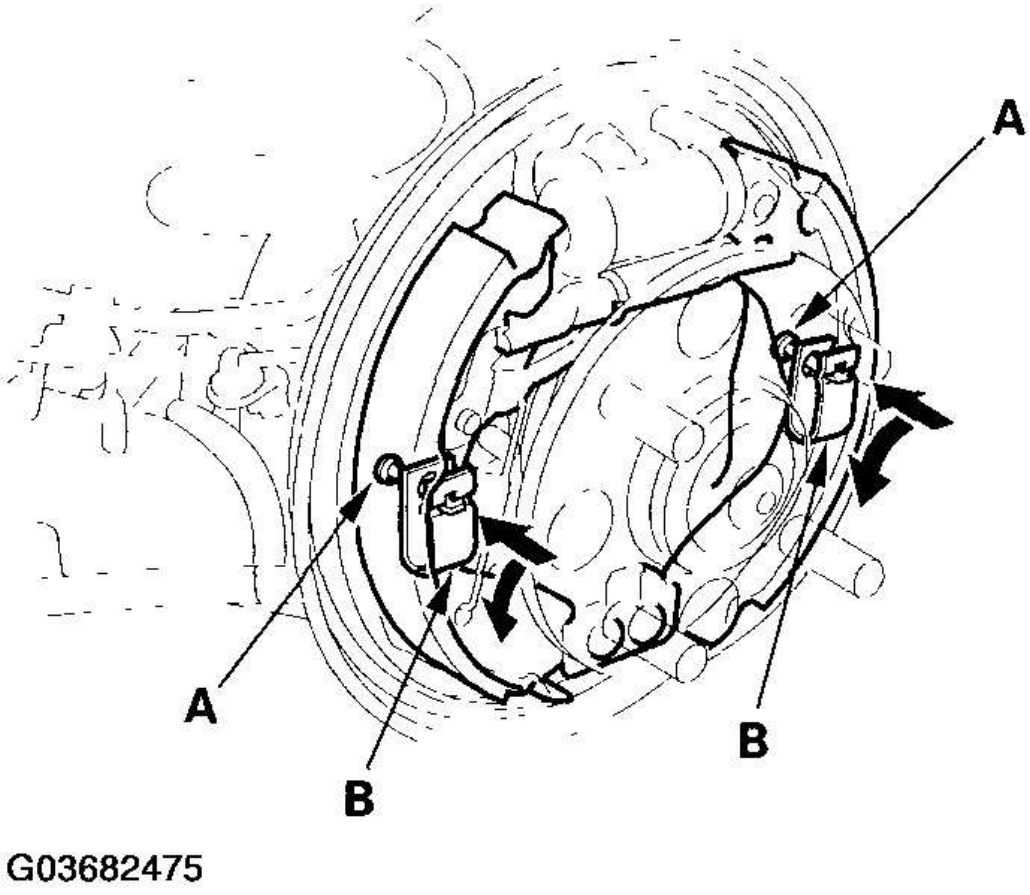

Fig. 48: Installing Tension Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the upper return spring (A) and lower return spring (B).

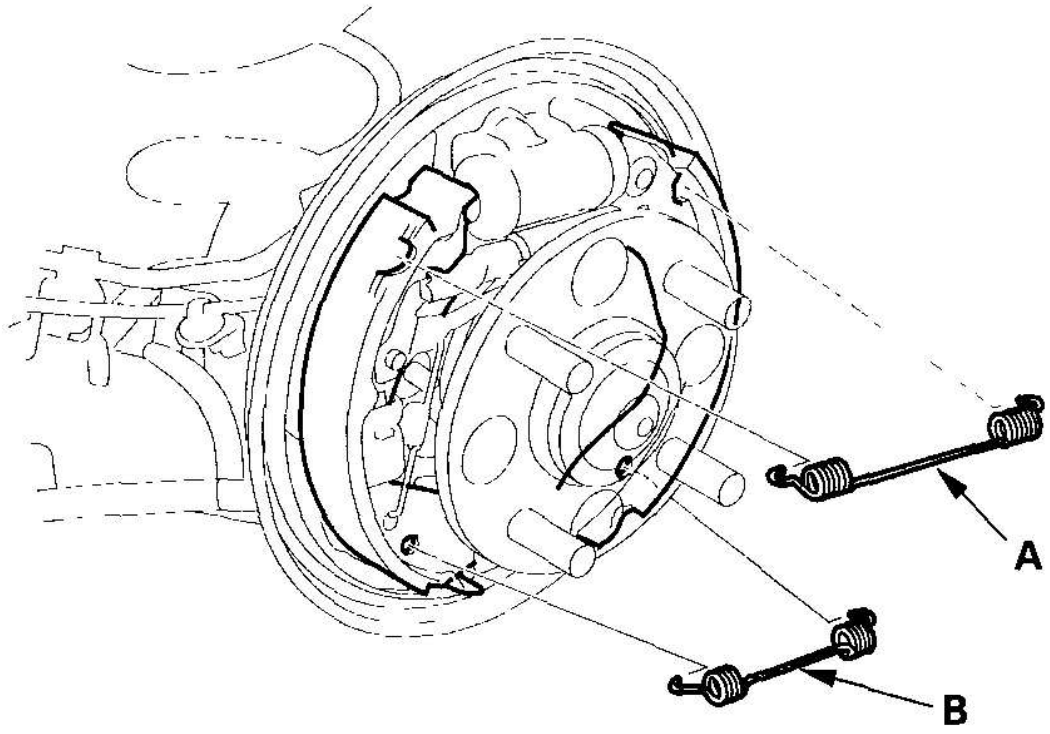

Fig. 49: Installing Upper Return Spring And Lower Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the brake drum (see **HUB BEARING UNIT REPLACEMENT**).
9. Install the rear wheels.
10. If the wheel cylinder has been removed, bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
11. Press the brake pedal several times to set the self-adjusting brake.
12. Adjust the parking brake (see **PARKING BRAKE CHECK AND ADJUSTMENT**).
13. Install the fender skirts (see **REAR INNER FENDER REPLACEMENT**).

REAR WHEEL 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.**
- **To prevent spills, cover the hose joints with rags or shop towels.**
- **Use only a Honda wheel cylinder special bolt.**

1. Remove the brake shoes (see **REAR BRAKE SHOE REPLACEMENT**).
2. Disconnect the brake line (A) from the wheel cylinder (B).

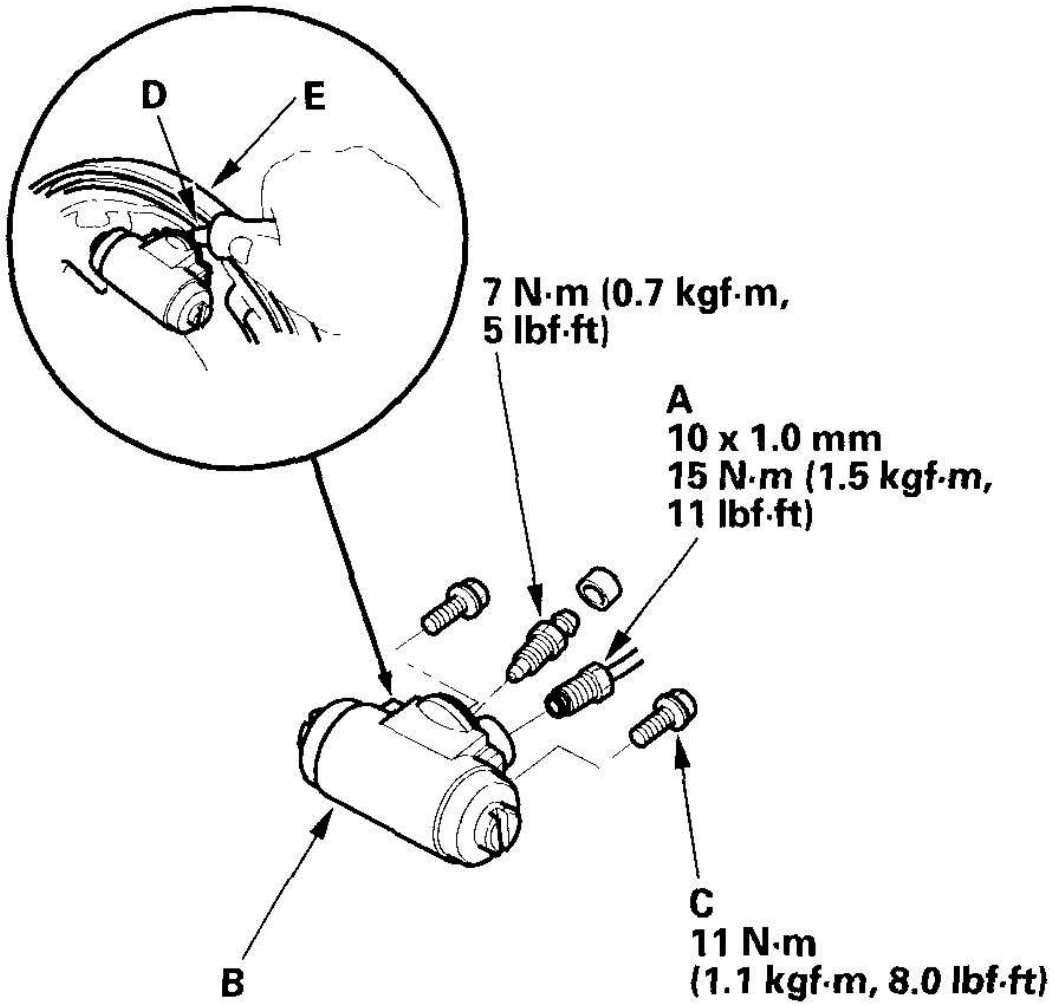

Fig. 50: Disconnecting Brake Line From Wheel Cylinder And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts (C) and the wheel cylinder from the backing plate.
4. Apply Three Bond 1109G sealant (D) between the wheel cylinder and backing plate (E), and install the wheel cylinder.
5. Install the removed parts in the reverse order of removal.
6. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).

7. Check for leaks at the line joint and bleed screw, and retighten if necessary.

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 the ABS modulator-control unit for damage and leaks.

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

CONNECTION POINT AND COMPONENT CONNECTED TO SPECIFIED TORQUE VALUE

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	9 N.m (0.9 kgf.m, 7 lbf.ft)	
B	Rear wheel cylinder	Brake line	34 N.m (3.5 kgf.m, 25 lbf.ft)	Flare nut
		Bleed screw	7 N.m (0.7 kgf.m, 5 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
G	Brake fluid pressure sensor (2005-2006 M/T model) or creep aid solenoid valve (CVT model)	Brake line	15 N.m (1.5 kgf.m, 11 lbf.ft)	Flare nut

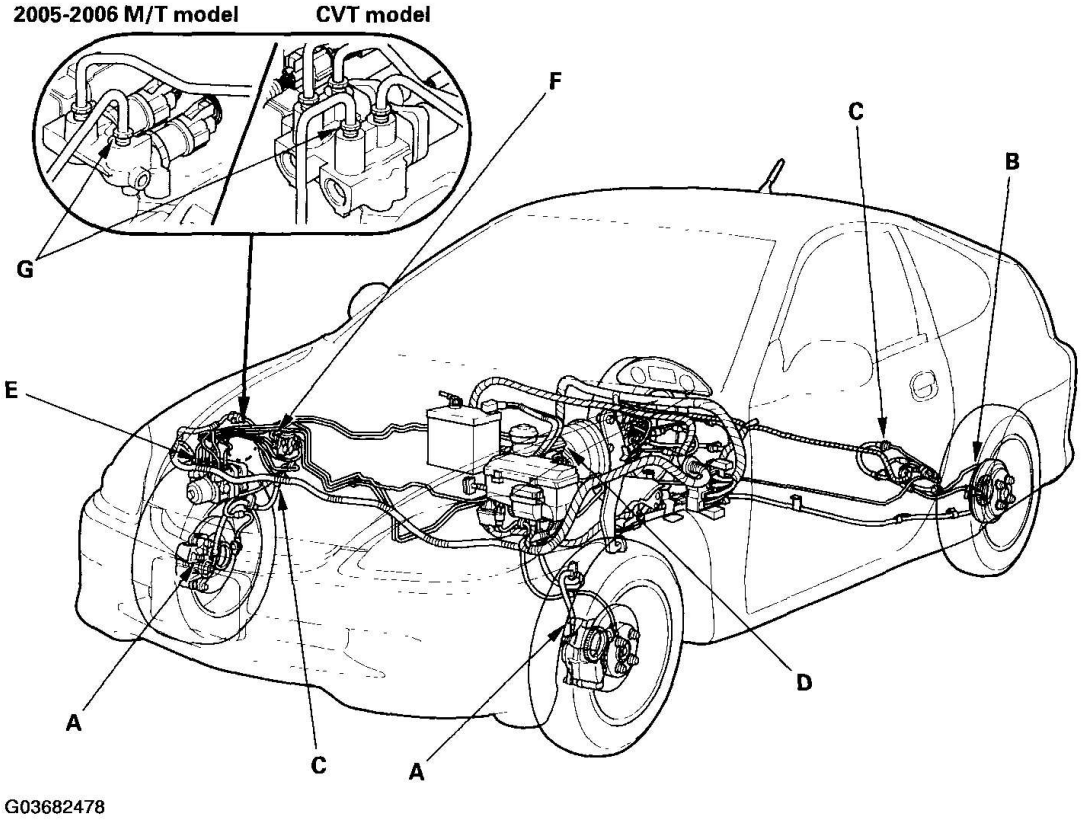

Fig. 51: Checking Master Cylinder And ABS Modulator-Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE HOSE REPLACEMENT

NOTE: To avoid damage, do not strike aluminum parts with a metal hammer. If necessary, tap gently with a plastic-tipped hammer.

NOTE:

- **Bolts and nuts with the * mark are special corrosion-resistant Dacro fasteners. Use the same type if replacement is necessary.**
- **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.**

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

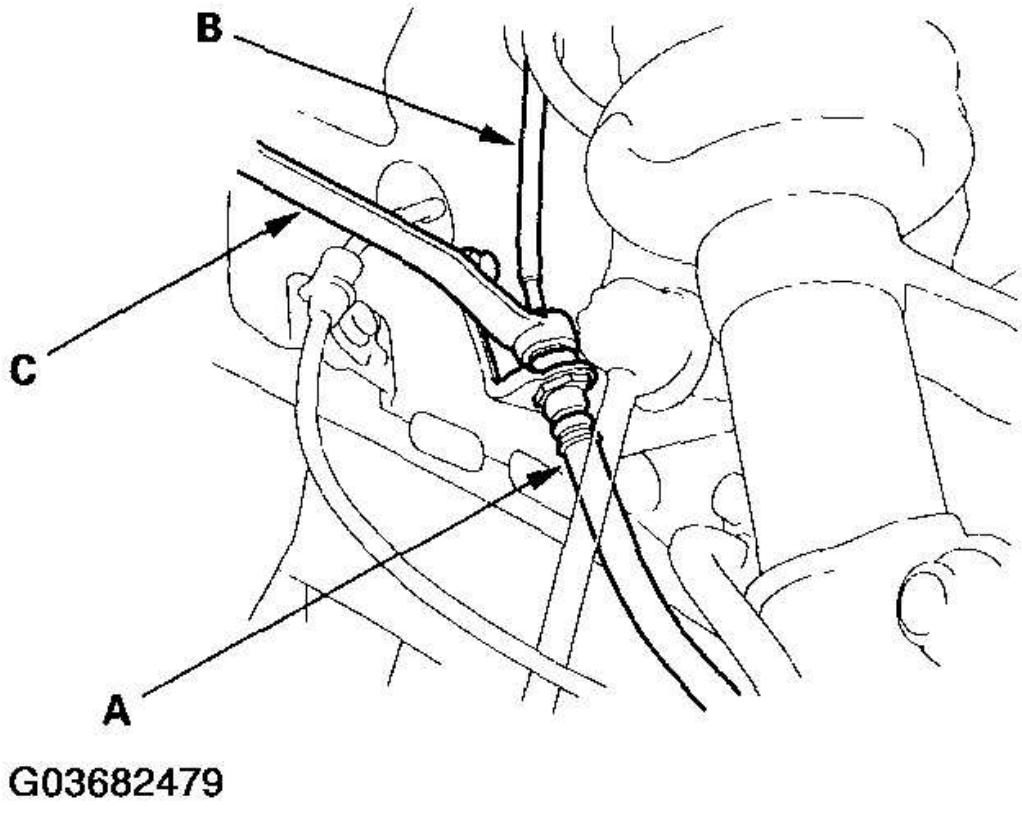

Fig. 52: Replacing Brake Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the brake hose from the brake line (B) using a 10 mm flare-nut wrench (C).
3. Remove the 6 mm flange bolts (A) and 8 mm flange bolt (B), and remove the brake hose brackets from the body and damper.

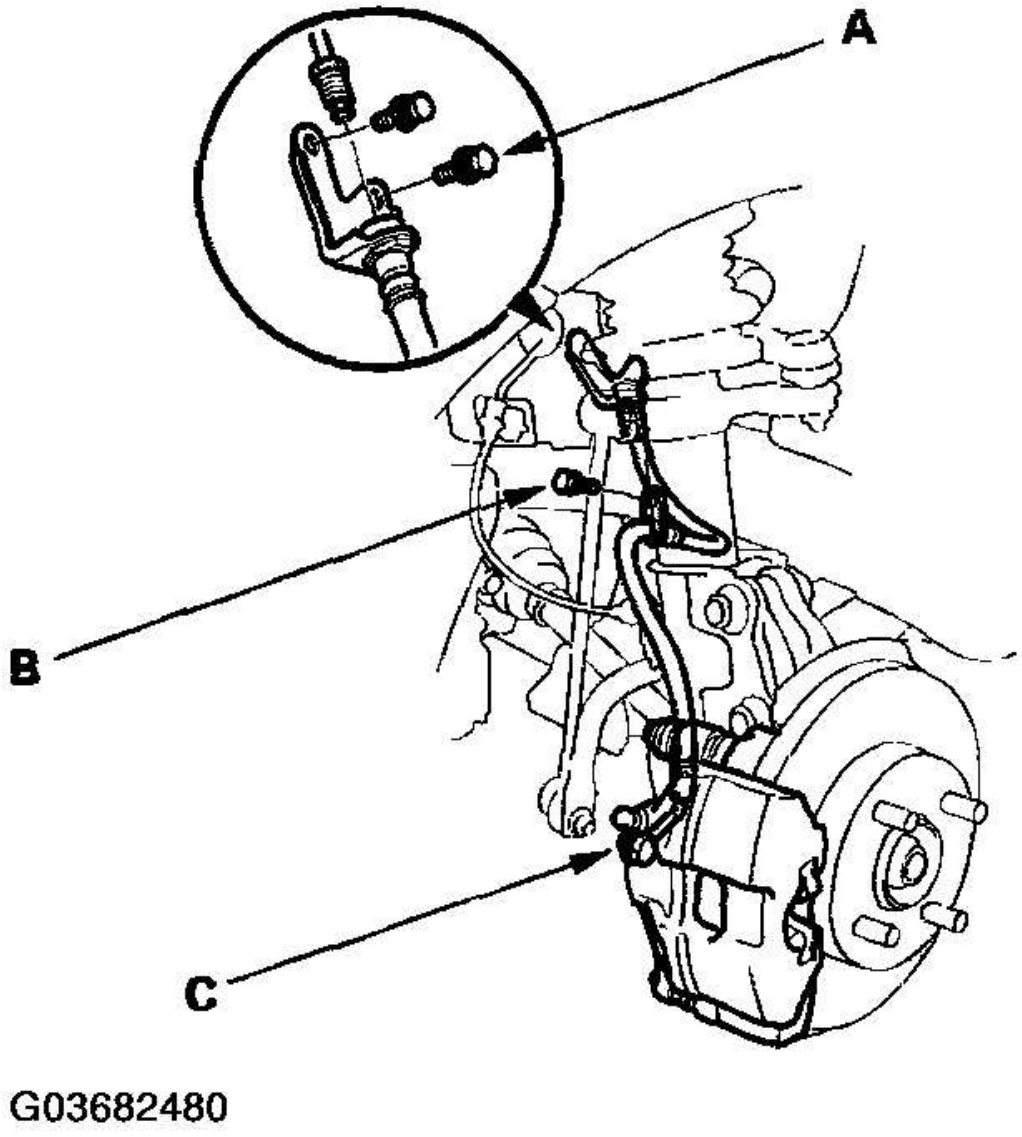

Fig. 53: Disconnecting Brake Hose From Brake Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the banjo bolt (C), and remove the brake hose from the caliper.
5. Install the brake hose bracket (A) on the damper with the 8 mm flange bolt (B) first, then connect the brake hose to the caliper with the banjo bolt (C) and new sealing washers (D).

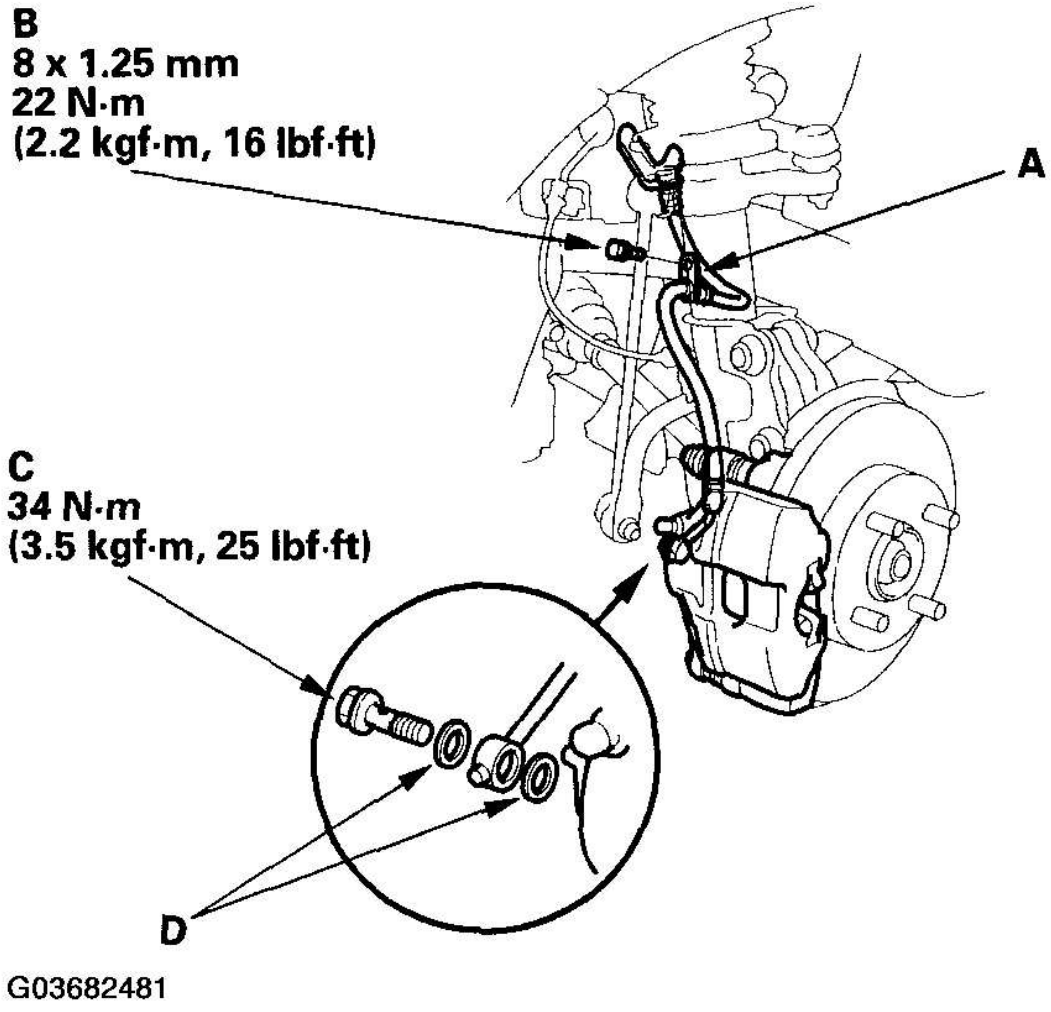

Fig. 54: Installing Brake Hose Bracket On Damper And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the upper brake hose bracket (A) with the 6 mm flange bolts (B).

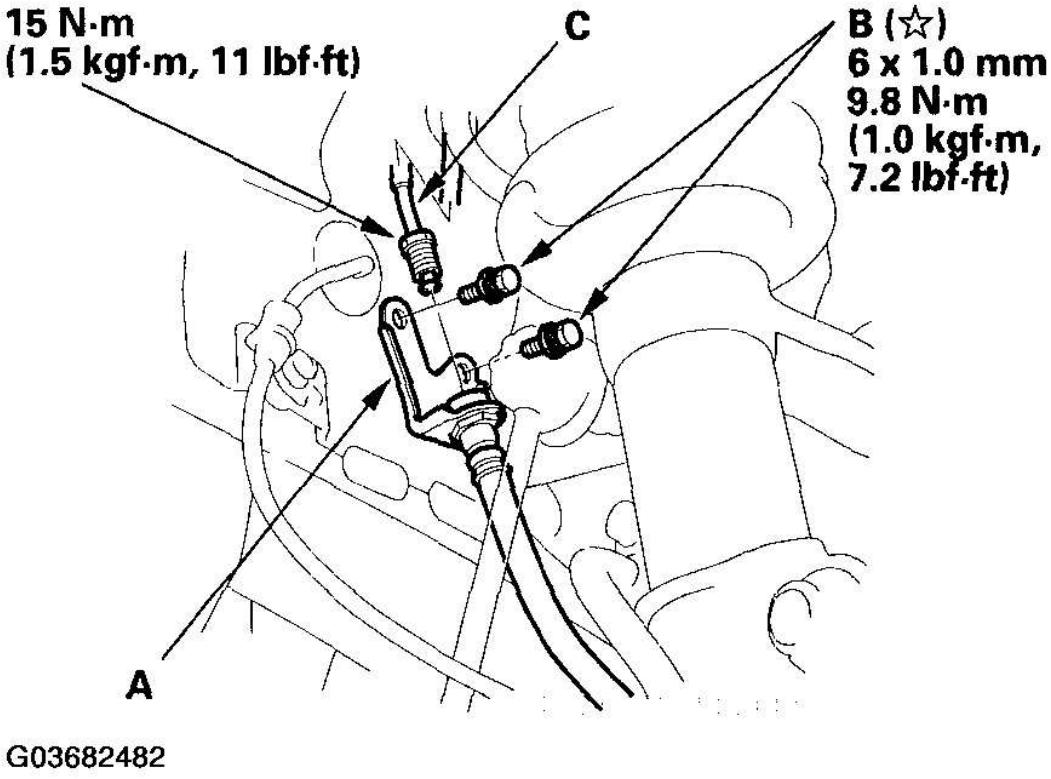

Fig. 55: Installing Upper Brake Hose Bracket And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the brake line (C) to the brake hose.
8. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
9. 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.

PARKING BRAKE CABLE REPLACEMENT

EXPLODED VIEW

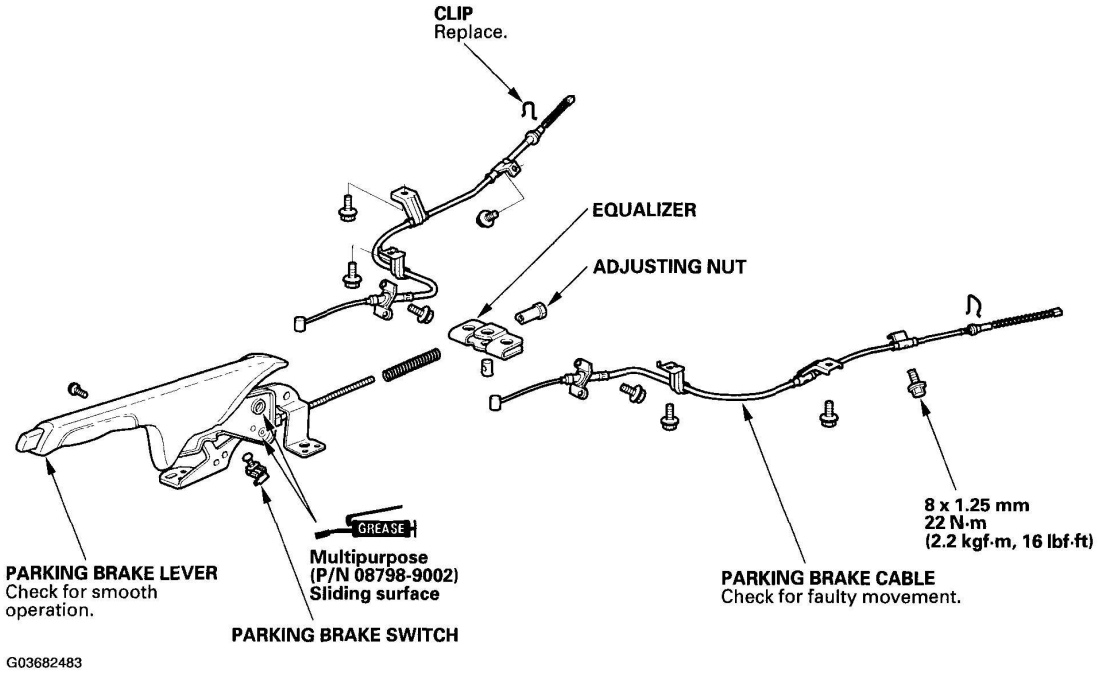

Fig. 56: Exploded View Of Parking Brake Cable And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove the brake drum (see **HUB BEARING UNIT REPLACEMENT**) and brake shoes, and disconnect the parking brake cable from the brake shoe (see **REAR BRAKE SHOE REPLACEMENT**).
2. Remove the clip (A) from the cable holder (B), and remove the parking brake cable end (C) from the backing plate.

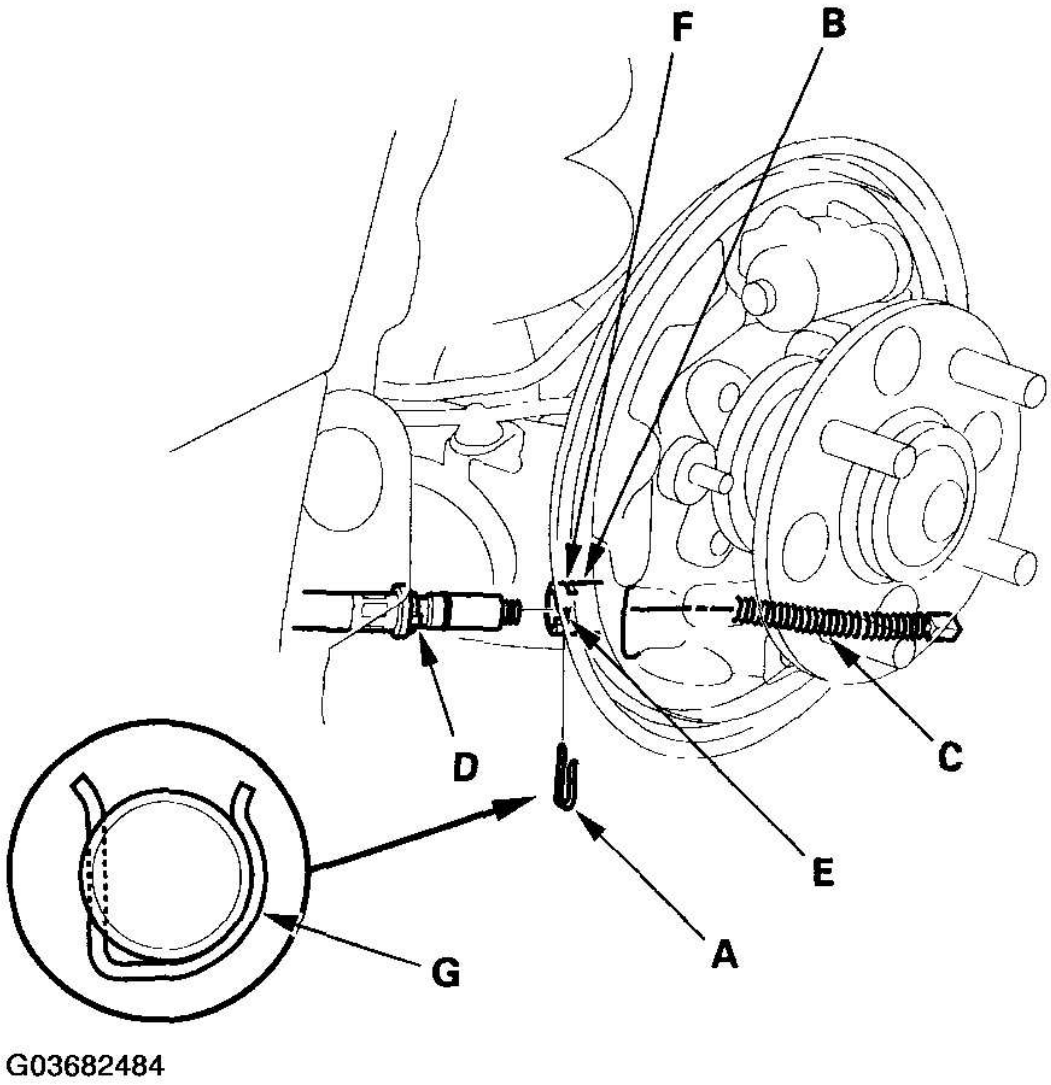

Fig. 57: Removing Clip From Cable Holder And Cable End From Backing Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert the parking brake cable end into the cable holder, and align the protrusion (D) on the cable with the cutout (E) on the cable holder. Install the clip into the groove (F) on the cable holder. Make sure the round side (G) of the clip faces toward the backing plate.
4. Connect the parking brake cable to the brake shoe, and install the shoe

assembly and brake drum (see **REAR BRAKE SHOE REPLACEMENT**).