

# BRAKE SYSTEM

## Article Text

1993 Honda Prelude

For Cadi Centre Nsk CA 95051

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### ARTICLE BEGINNING

1993 BRAKES

Honda Brake System

Prelude

### DESCRIPTION

Prelude uses front disc brakes. Rear brakes may be either disc type or self-adjusting drum type. Parking brake cable mechanism applies rear brakes.

### BLEEDING BRAKE SYSTEM

#### BLEEDING PROCEDURES

Raise and support vehicle. Fill master cylinder to maximum. Check fluid level after bleeding each wheel position. Bleed brakes in sequence. See BRAKE LINE BLEEDING SEQUENCE table.

#### BRAKE LINE BLEEDING SEQUENCE TABLE

Application		Sequence
Prelude	.....	RR, LF, LR, RF

### ADJUSTMENTS

#### BRAKE PEDAL HEIGHT

Loosen brakelight switch lock nut, and back off switch until it no longer touches brake pedal. Loosen brake pedal push rod lock nut, and screw push rod in or out until correct pedal height is obtained. See BRAKE PEDAL HEIGHT SPECIFICATIONS table. Tighten lock nut to specification. See TORQUE SPECIFICATIONS TABLE.

#### BRAKE PEDAL HEIGHT SPECIFICATIONS TABLE

Application		Auto. Trans. In. (mm)	Man. Trans. In. (mm)
Prelude	.....	7.3 (186)	6.5 (165)

### BRAKE WARNING LIGHT

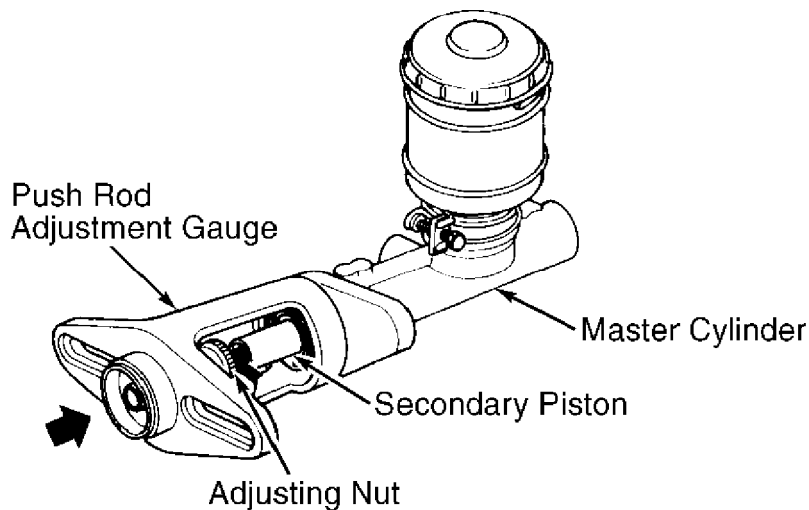
Brake warning light indicates parking brake is engaged and/or brake fluid level is low. To adjust parking brake light operation, turn ignition on. Bend switch plate down until light comes on when parking brake lever is pulled one notch and goes out when lever is released.

#### MASTER CYLINDER PUSH ROD

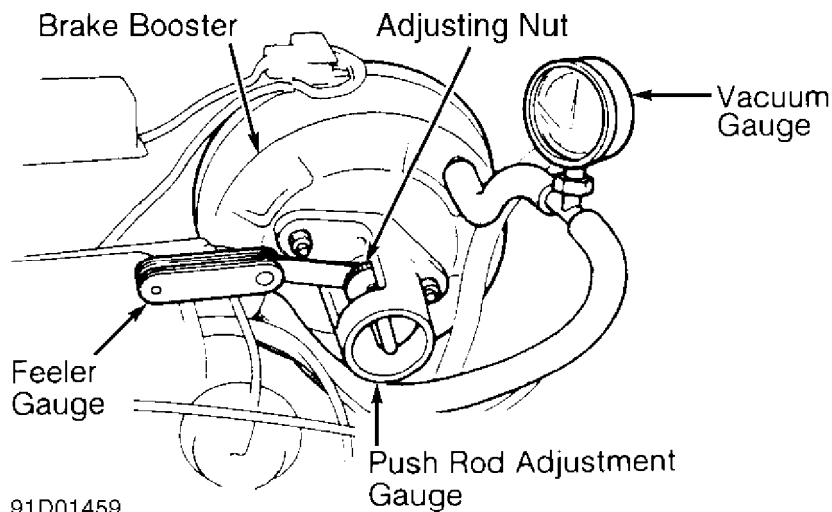
**NOTE:** Check and adjust master cylinder push rod-to-piston clearance before installing master cylinder.

1) Install Push Rod Adjustment Gauge (07JAG-SD40100) so gauge rod makes light contact with secondary piston of master cylinder. See Fig. 1. Ensure gasket is in position when adjusting rod clearance.

2) Remove push rod adjustment gauge from master cylinder, and install gauge onto brake booster. See Fig. 2. Tighten mounting nuts to specification. Using engine or outside vacuum source, apply at least 10 in. Hg vacuum to brake booster. Check clearance using feeler gauge. Ensure clearance is 0-.016" (0-.40 mm). Adjust push rod clearance by turning nut at end of push rod.



91B01458  
**Fig. 1: Setting Push Rod Adjustment Gauge**  
Courtesy of American Honda Motor Co., Inc.



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**Fig. 2: Checking Push Rod Clearance**  
 Courtesy of American Honda Motor Co., Inc.

## PARKING BRAKE

**NOTE:** Before adjusting parking brake, loosen equalizer adjusting nut. Start engine, and depress brake pedal several times to set self-adjusting brakes before adjusting parking brake.

1) With rear brakes adjusted, raise and support rear of vehicle. Loosen equalizer nut, and pull parking brake lever up one notch. Tighten equalizer adjusting nut until rear wheels drag slightly.

2) Release parking brake lever. Rear wheels should rotate freely. Rear wheels should lock when parking brake lever is pulled up 6-10 clicks.

## REAR DRUM BRAKE SHOES

Rear brake shoes will self-adjust through brake pedal action. No in-service adjustment is required.

## STOPLIGHT SWITCH

1) Stoplight switch is located under dash, above brake pedal. **Adjust switch, loosen lock nuts, and turn switch until plunger is fully depressed (threaded end touching pedal arm pad).**

2) Back off switch 1/4 turn, and tighten lock nuts. Clearance between threaded end of switch body and brake pedal switch contact pad should be about .012" (.30 mm). Ensure brakelights go off when pedal is released.

## TESTING

## POWER BRAKE BOOSTER

### Functional Test

1) Start engine. Turn ignition off. Depress brake pedal several times. Depress pedal firmly and hold pressure for 15 seconds. If pedal sinks, master cylinder, brake line or wheel cylinder is faulty.

2) With pedal depressed, start engine. If pedal sinks slightly, vacuum unit is working properly. If pedal height does not vary, booster or check valve is faulty.

### Leak Test

1) With engine running, depress brake pedal. Turn ignition off. If pedal height does not change while depressed for 30 seconds, vacuum booster is okay. If pedal rises, vacuum booster is faulty.

2) Stop engine, and depress brake pedal several times using normal pressure. Pedal height should be low when first depressed. On consecutive applications, pedal height should gradually rise. If pedal height does not vary, check power brake booster check valve.

### Check Valve Test

Disconnect power brake unit vacuum hose at booster. Start engine, and allow it to idle. Ensure vacuum is available at booster end of hose. If vacuum is not available, vacuum source or check valve is faulty. Repair vacuum source or replace check valve, and retest.

## REMOVAL & INSTALLATION

### FRONT DISC BRAKE PADS

#### Removal

1) Raise and support front of vehicle. Remove wheels. Remove caliper bolt and brakeline bracket bolts. Pivot caliper aside. Remove pads and pad shim. Remove pad retainers (if equipped).

2) Using a vernier caliper, measure brake friction pad thickness. Measurement does not include pad backing thickness. Minimum brake pad thickness is .06" (1.6 mm).

**NOTE:** Replace brake pads in axle sets of 4 pads. Ensure grease, brake fluid and other contaminants do not contact lining surface. Inspect and clean rotor, and resurface it if necessary.

#### Installation

1) Lubricate sliding surfaces with high temperature silicone grease. Install pad retainers. Apply Molykote M77 compound to back of  
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pads and both sides of pad shims.

2) Install inner and outer pad shims. Install brake pads. Ensure brake pad with pad wear indicator is installed inside. Loosen bleeder screw, and slowly push piston into caliper bore.

3) Tighten bleeder screw. Ensure brake fluid does not contaminate pads. Position caliper, and install lower guide pin or caliper bolts. Depress brake pedal several times to seat pads. Bleed brakes as necessary. See BLEEDING BRAKE SYSTEM.

## FRONT BRAKE CALIPER

### Removal

1) Raise and support front of vehicle. Remove wheels. Remove banjo bolt and copper washers connecting brake line to caliper. Plug hydraulic line and caliper.

2) Detach caliper guide pins or bolts, and remove caliper. DO NOT damage splash guard on upper caliper bolt side (if equipped) during removal. Remove disc pads, pad retainers, upper and lower anti-rattle springs and shim.

### Installation

To install, reverse removal procedure. Install NEW copper banjo bolt washers when installing brake flexhose. Bleed brake system. See BLEEDING BRAKE SYSTEM.

## FRONT BRAKE ROTOR

### Removal & Installation

1) Raise and support vehicle. Remove wheels. Remove caliper assembly, and suspend it using wire. See FRONT BRAKE CALIPER. Attach dial indicator to caliper mount. Check rotor runout before removal. See DISC BRAKE SPECIFICATIONS table.

2) Detach and remove two 6-mm rotor retaining screws. Install two 8 x 1.25 x 12-mm bolts in existing holes. To prevent warpage, alternately turn bolts 2 turns at a time until disc can be removed from hub.

3) Clean rotor of all rust, and inspect rotor surfaces for cracks and grooves. Resurface or replace rotor as necessary. To install, reverse removal procedure. Tighten retaining screws. Bleed hydraulic system (if necessary). See BLEEDING BRAKE SYSTEM.

## REAR DISC BRAKE PADS

### Removal

Raise and support rear of vehicle. Remove wheels. Remove caliper shield (if equipped). Detach parking brake cable from caliper. Remove caliper mounting bolts. Remove caliper from bracket. Suspend caliper using wire. Remove brake pads.

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### Inspection

Using a vernier caliper, measure friction pad thickness. Service limit is .06" (1.5 mm).

### Installation

1) Apply Molykote M77 compound to both sides of inner and outer pad shims. Install brake pads and shims. Rotate caliper piston clockwise in caliper (if necessary). Ensure cutout in piston aligns with tab on inner pad.

2) Avoid twisting piston boot. If boot is twisted, back out piston and reposition boot. Install brake caliper and parking brake cable. Install caliper shield. Tighten shield mounting bolts to specification. See TORQUE SPECIFICATIONS TABLE.

3) Pump brake pedal several times to seat pads. Bleed brakes as necessary. See BLEEDING BRAKE SYSTEM.

## REAR BRAKE CALIPER

### Removal

1) Raise and support rear of vehicle. Remove wheels. Detach caliper shield mounting bolts. Remove shield. Remove parking brake cable from caliper.

2) Remove banjo bolt and copper washers connecting brakeline to caliper. Plug hydraulic line and caliper. Detach caliper mounting bolts, and remove caliper.

### Installation

To install, reverse removal procedure. Replace copper banjo bolt washers when installing brake flexhose. Bleed brake system. See BLEEDING BRAKE SYSTEM.

## REAR BRAKE ROTOR

### Removal & Installation

1) Raise and support vehicle. Remove wheels. Remove caliper assembly. See REAR BRAKE CALIPER. Suspend caliper using wire. Attach dial indicator to control arm assembly. Check rotor runout before removal. See DISC BRAKE SPECIFICATIONS table.

2) Detach and remove two 6-mm rotor retaining screws. Install two 8 x 1.25 x 12-mm bolts in existing holes. To prevent warpage, alternately turn bolts 2 turns at a time until disc can be removed from hub.

3) Clean rotor of all rust, and inspect rotor surfaces for excessive wear, cracks and grooves. Resurface or replace rotor as necessary. To install, reverse removal procedure. Tighten retaining screws. Bleed hydraulic system (if necessary). See BLEEDING BRAKE SYSTEM.

## BRAKE DRUM

### Removal & Installation

1) Raise and support vehicle. Remove rear wheels. Loosen parking brake. Pull brake drum off hub.

2) Inspect lining friction surface of drum for grooves, excessive wear and damage. Using an inside micrometer, measure I.D. of brake drum. If I.D. is not within specification, replace brake drum. See DRUM BRAKE SPECIFICATIONS table.

3) Resurface drum when new linings are installed. Replace drum if specification is exceeded. To install, reverse removal procedure.

## REAR BRAKE SHOES

### Removal

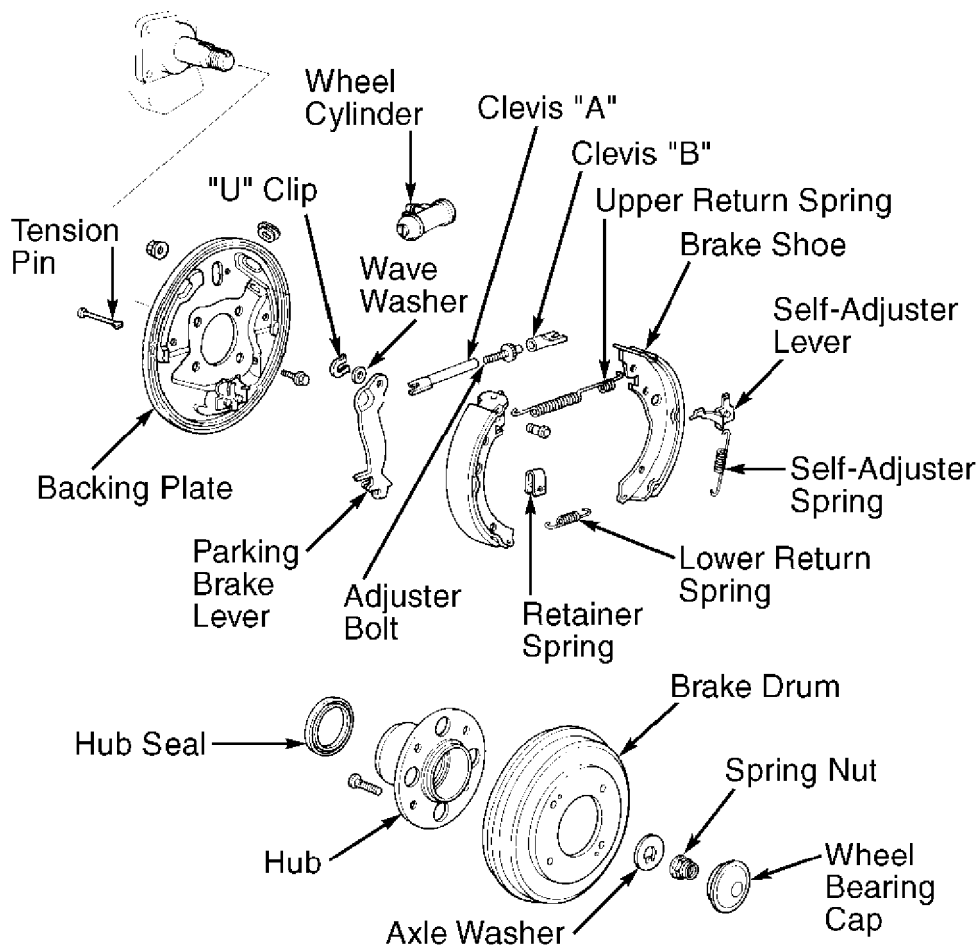
1) Raise and support rear of vehicle. Remove rear wheels and brake drums. Detach shoe tension pins by pushing in on retaining spring and turning tension pin 90 degrees to align with spring slot.

2) Lower brake shoe assembly to clear wheel cylinder, and remove lower return spring. Note original position of all springs. See Fig. 3.

**CAUTION:** Ensure wheel cylinder rubber dust covers are not damaged during brake shoe removal.

3) Remove brake shoe assembly. Disconnect parking brake cable from parking brake lever assembly. Remove upper return spring. Separate brake shoes. Remove self-adjuster bolt, lever and spring.

4) Pry off circlip, and remove washer, pivot pin and parking brake lever (if necessary). Mark parking brake lever for left or right position.



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**Fig. 3: Exploded View Of Rear Drum Brake Assembly (Typical)**  
 Courtesy of American Honda Motor Co., Inc.

#### Inspection

1) Check self-adjuster lever for worn or damaged ratchet teeth. Inspect brake shoes for distortion, nicks or burrs, and loose glazed, cracked or oil-soaked linings. Check all springs for weakness and damage. Inspect brake linings for excessive wear and damage. Lining service limit is .080" (2.00 mm).

2) Replace linings (and springs) in axle sets only. Resurface brake drums when new linings are installed.

#### Installation

1) Apply light coat of high-temperature grease to threads of adjuster assembly, sliding surfaces of brake shoes and metal contact areas of backing plate. Install parking brake lever to brake shoe.

2) Screw in self-adjuster bolt until it stops. Install parking brake cable on lever. To complete installation, reverse removal procedure. Bleed system as necessary. See BLEEDING BRAKE SYSTEM.



3) Depress brake pedal several times to set self-adjusting brake. Adjust parking brake. See PARKING BRAKE under ADJUSTMENTS.

## MASTER CYLINDER

### Removal & Installation

Drain master cylinder reservoir. Disconnect fluid level switch connector. Disconnect brake fluid lines. Plug openings to prevent fluid loss and contamination. Remove master cylinder mounting nuts. Remove master cylinder. Bleed master cylinder before installation. To install, reverse removal procedure. Bleed system as necessary. See BLEEDING BRAKE SYSTEM.

## POWER BRAKE BOOSTER

### Removal

Power brake booster may be removed with master cylinder attached, if desired. Disconnect vacuum hose from power brake booster. From inside vehicle, remove retaining clip from booster rod pin on brake pedal. Remove pin from brake pedal. Remove brake booster mounting nuts. Remove power brake booster assembly from engine compartment.

### Installation

Check length of brake booster rod. See Fig. 4. Install power brake booster. Tighten mounting nuts to specification. See TORQUE SPECIFICATIONS TABLE. To complete installation, reverse removal procedure. Bleed system as necessary. See BLEEDING BRAKE SYSTEM.

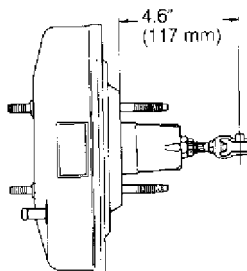


Fig. 4: Adjusting Power Brake Booster Push Rod Length  
Courtesy of American Honda Motor Co., Inc.

## REAR AXLE BEARINGS & OIL SEAL

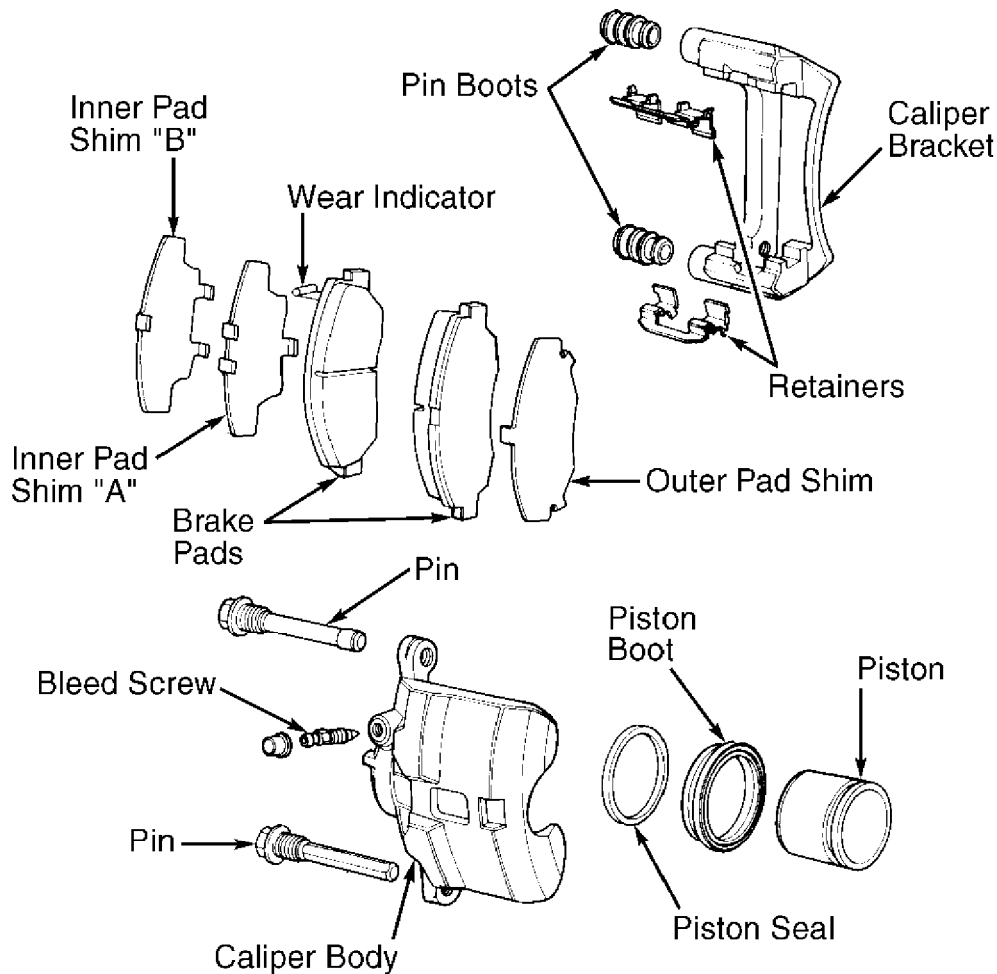
**NOTE:** Prelude uses a permanently sealed bearing assembly that requires removal of hub assembly from vehicle. See SUSPENSION - REAR article in SUSPENSION section.

## OVERHAUL

## DISC BRAKE CALIPER

**CAUTION:** DO NOT spill brake fluid on painted surfaces or damage to finish will result. DO NOT place fingers in front of piston when air pressure is used for removal.

**NOTE:** For exploded views of disc brake calipers, see Figs. 5 and 6.



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**Fig. 5: Exploded View Of Front Disc Brake Caliper (Typical)**  
Courtesy of American Honda Motor Co., Inc.



Front .....	81 (110)
Rear .....	28 (38)
Flexhose-To-Caliper Banjo Bolt .....	26 (35)
Master Cylinder-To-Power Unit Nut .....	11 (15)
Power Booster Push Rod Lock Nut .....	11 (15)
Rear Spindle Nut .....	136 (185)

INCH Lbs. (N.m)

Caliper Shield .....	89 (10)
Power Booster Mounting Nut .....	106 (12)
Rear Wheel Cylinder Mounting Nut .....	80 (9)
AA	

## DISC BRAKE SPECIFICATIONS

### DISC BRAKE SPECIFICATIONS TABLE

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Application .....	In. (mm)

#### Disc Thickness

Front	
Standard .....	.90 (23.0)
Minimum Refinish Limit .....	.83 (21.0)
Rear	
Standard .....	.39 (10.0)
Minimum Refinish Limit .....	.31 (8.0)
Parallelism .....	.0006 (.015)
Lateral Runout .....	.004 (.10)
AA	

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