

## DELCO-MORAINE SINGLE PISTON DISC — REAR

**Buick**  
**Riviera**  
**Cadillac**  
**Eldorado & Seville**  
**Chevrolet**

**Camaro**  
**Oldsmobile**  
**Toronado**  
**Pontiac**  
**Firebird**

### DESCRIPTION

Rear disc brakes are a single piston sliding caliper type. An integral parking brake is used, with an automatic adjusting provision. Brake rotors are made of cast iron, with 2 machined braking surfaces separated by cooling fins. On some cars, a groove is machined in the center of the braking surface to aid in reducing braking noise.

### ADJUSTMENT

#### SERVICE BRAKES

Caliper design automatically compensates for shoe wear; therefore, no brake adjustment service is required.

#### PARKING BRAKE

With parking brake pedal fully released and rear wheels raised, hold brake cable stud to prevent turning and tighten equalizer nut until cable slack is removed. Make sure levers are on stops. If not, loosen equalizer nut until levers return against stops on caliper housing. After adjustment, pedal travel with 125 lbs. force, should be 4-5½" on Eldorado, Seville, Toronado and Riviera, and 5¼-6¾" on Camaro and Firebird.

### SERVICING

#### BLEEDING

See *Hydraulic Brake Bleeding* in this section.

#### SHOE & LINING INSPECTION

Inspect linings every 6000 miles or any time wheels are removed. Check both ends of inboard and outboard linings for wear. Replace all linings if any one wears to the approximate thickness of the shoe.

#### SHOE & LINING REPLACEMENT

**NOTE** — Relining should be done in complete set only.

**CAUTION** — Front brake shoes must not be used on rear calipers.

### REMOVAL & INSTALLATION

**Removal** — 1) Remove and discard 2/3 of brake fluid in master cylinder reservoir. Raise vehicle on hoist. Remove wheel and tire. Replace 1 lug nut (flat side toward rotor) to prevent rotor from falling off when caliper is removed.

**NOTE** — Mark relationship of wheel to axle flange before removing wheels.

2) Loosen tension on parking brake cable at equalizer and disconnect brake cable from parking brake lever. Remove cable bracket from caliper. Remove return spring, lock nut, lever, lever seal and anti-friction washer.

**NOTE** — Lever must be held in place while removing nut.

3) Clean any dirt from caliper in area of lever seal. Using a large "C" clamp, place solid end on lever stop and screw end on back of outer lining assembly. Turn clamp until piston bottoms in caliper. Remove "C" clamp.

**NOTE** — Do not position "C" clamp on actuator screw.

4) Lubricate caliper housing surface under lever seal with silicon brake lubricant. Install new anti-friction washer. Lubricate new lever seal with silicon and install with sealing bead against housing. Install lever on actuator screw with lever pointing down.

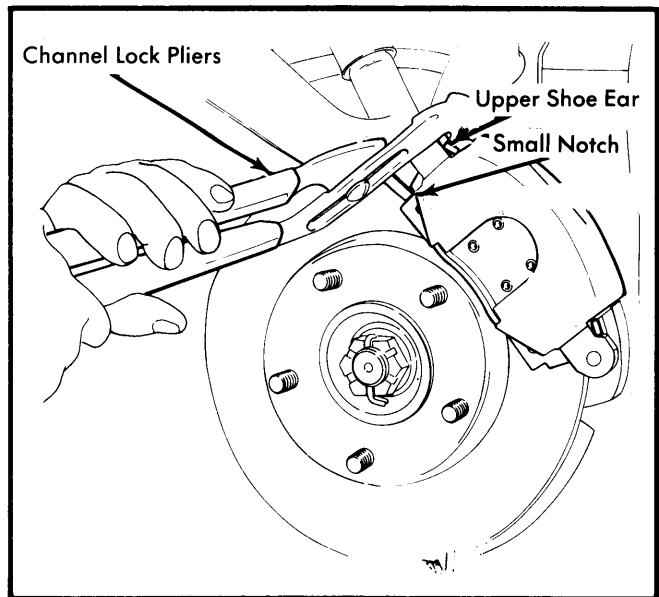


Fig. 1 Clinching Ears of Outboard Shoe

5) Remove brake line from caliper. Plug opening to prevent fluid loss to keep dirt out of system. Remove caliper mounting bolts. Remove caliper with brake shoes. Inspect caliper assembly for damage, cuts, cracks or excessive leakage. Replace or repair as necessary. Remove and discard 2 caliper mounting sleeve and 4 bushings. Remove and discard piston check valve.

**Installation** — 1) Install new piston check valve. Using silicone grease, install new bushings and sleeves. Place new inboard shoe on piston with "D" shaped tab fitting into indentation in piston. Install outboard shoe.

**NOTE** — If piston requires rotation, use a spanner wrench (tool J-7624) to turn it.

2) Slide caliper over rotor and install mounting bolts under inboard shoe ears. Using new washers, install brake line. Pump brake pedal to seat lining against caliper. Using channel lock pliers, clinch upper ears of outboard shoe against caliper, making sure all ears are flat against caliper with no clearance.

3) Rotate lever toward front of vehicle and tighten nut. Rotate lever back against stop on caliper and install spring. Connect and adjust parking brake cable. After bleeding brake system,

## DELCO-MORAINE SINGLE PISTON DISC – REAR (Cont.)

pump brake several times to adjust. Remove single lug nut used to retain rotor and install wheel.

### ROTOR SERVICING

**Lateral Runout** – Mount a dial indicator so that foot will contact face of rotor approximately 1 inch from rotor edge. Set gauge to zero. Turn rotor through 1 complete revolution noting gauge. See *Rotor Specifications for maximum allowable run-out.*

**Parallelism** – Check thickness of rotor at 4 or more points around circumference of rotor. Make all measurements at same distance from edge of rotor. If thickness varies more than specified, refinish or replace as necessary. See *Rotor Specifications for minimum rotor thickness and parallelism.*

## OVERHAUL

### BRAKE CALIPER

**Disassembly** – 1) With caliper held in a vise, remove 2 mounting sleeves and 4 bushings from caliper and discard. Remove brake shoes and lever return spring. Using a shop towel to catch piston and brake fluid, rotate lever back and forth to move piston out of caliper housing.

**NOTE** – If piston will not move out of housing, remove lock nut, lever, seal and anti-friction washer. Use a wrench to turn activator screw until piston pops out of housing.

2) Remove piston seal assembly and balance spring. Remove lock nut, lever, seal and anti-friction washer. Push screw out of housing and remove piston seal, copper washer and boot.

3) Thoroughly clean all parts with denatured alcohol. Inspect caliper bore for scoring, nicks, corrosion or wear. Use crocus cloth to polish any light corrosion. Replace if necessary. Check outer diameter of piston for nicks, scoring or damaged plating. If surface defects are visible, replace piston.

**Reassembly** – 1) Install bleeder screw and tighten. Install fitting and bolt using new copper washers. Lubricate new piston seal with brake fluid and install into caliper bore groove. Fit boot on piston with inside lip of boot in piston groove and boot fold toward end of piston that contacts in-board brake shoe. Install new thrust washer and seal on actuator screw. Lube actuator screw with brake fluid and install in piston. Fit balance spring into piston and start piston assembly into caliper housing.

**NOTE** – Caliper housing and activator screws must be installed on the same side of the car as they were removed from. If parts are on the wrong side parking brake will not work.

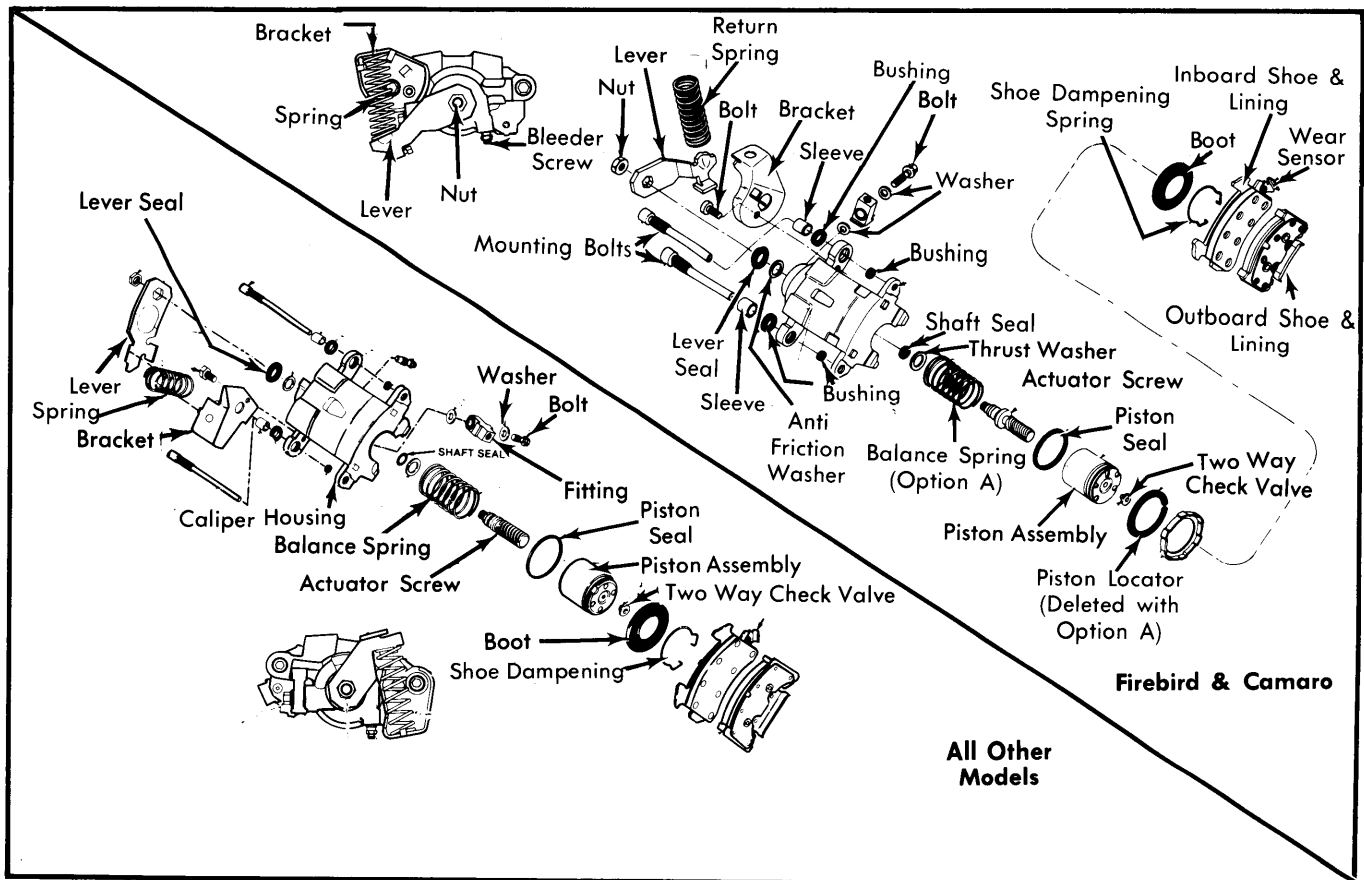


Fig. 2 Exploded View of Delco-Moraine Single Piston Rear Caliper

# Brake Systems

## DELCO-MORAINE SINGLE PISTON DISC – REAR (Cont.)

**2)** Using piston installer tool (J-23072) screw piston all the way back into housing. Ensure that piston is straight or screw may damage seal as it passes through. Before removing tool, install lever away from stop, rotate forward and hold while tightening nut.

**3)** Remove tool (J-23072), rotate lever back to stop and install return spring (red-right side & black-left side). Using boot installer tool (J-28678), drive boot in until seal bottoms in housing. Install lining and caliper. See *Shoe and Lining Replacement*.

TIGHTENING SPECIFICATIONS	
Application	Ft. Lbs. (N·m)
Brake Hose-to-Caliper .....	30 (41)
Caliper Mounting Bolts .....	30-45 (41-61)
Brake Lever Activator Screw .....	30-40 (41-54)
Application	INCH Lbs. (N·m)
Bleeder Screw .....	80-140 (9.0-15.8)

DISC BRAKE SPECIFICATIONS						
Application	Disc Diameter	Lateral Runout	Parallelism	Original Thickness	Minimum Refinish Thickness	Discard Thickness
Buick Riviera	10.50"	.005"	.0005"	1.030"	1.020"	.956"
Cadillac Eldorado & Seville	10.50"	.004"	.0005"	1.000"	.....	.....
Chevrolet Camaro	10.50"	.005"	.0005"	1.000"	.980"	.965"
Oldsmobile Toronado	10.50"	.004"	.0005"	1.000"	.984"	.957"
Pontiac Firebird	10.50"	.005"	.0005"	1.000"	.980"	.965"