CHRYSLER CORP. SINGLE PISTON DISC

Chrysler Corp. (All Models)

DESCRIPTION

A single piston floating/sliding caliper assembly is used on all models. The disc brake assembly consists of a caliper, disc pads, splash shield, adapter and rotor. As the brake pedal is depressed, hydraulic pressure is applied against the piston located in the caliper assembly. This force is transmitted to the inboard disc pads and against the braking surfaces of rotor. As the forces increase against the inboard side, the caliper moves inward, providing full clamping force on rotor.

Calipers are installed 2 ways. On front wheel drive vehicles, a floating caliper in mounted using 2 steel guide pins installed through 2 rubber bushings. On rear wheel drive models, a sliding caliper is mounted on 2 machined pads and held in position by 2 retaining clips and anti-rattle springs.

ADJUSTMENT

SERVICE BRAKES

Disc brakes are self-adjusting. Caliper piston seals are designed to retract pistons just enough to allow brake lining to lightly brush disc without any drag.

SERVICING

BLEEDING SYSTEM

See Hydraulic Brake Bleeding in this section.

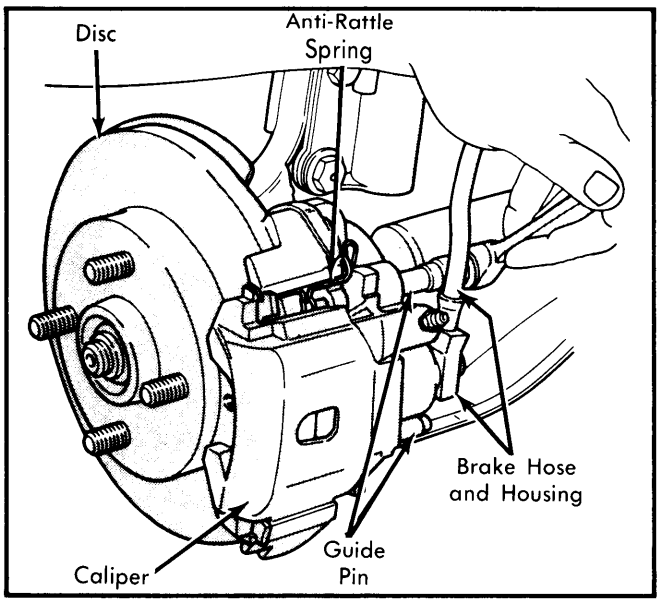

Fig. 1 Removing or Installing Caliper Guide Pins

DISC PAD INSPECTION

Inspect condition of disc pads any time wheels are removed. When a shoe and lining assembly is worn to a thickness of approximately 5/16" it should be replaced.

DISC PAD REPLACEMENT

Removal (Aries, LeBaron, Reliant & 400) – Raise and support front of vehicle. Remove wheel and tire. Remove retaining clips and anti-rattle springs. Slowly slide caliper out and away

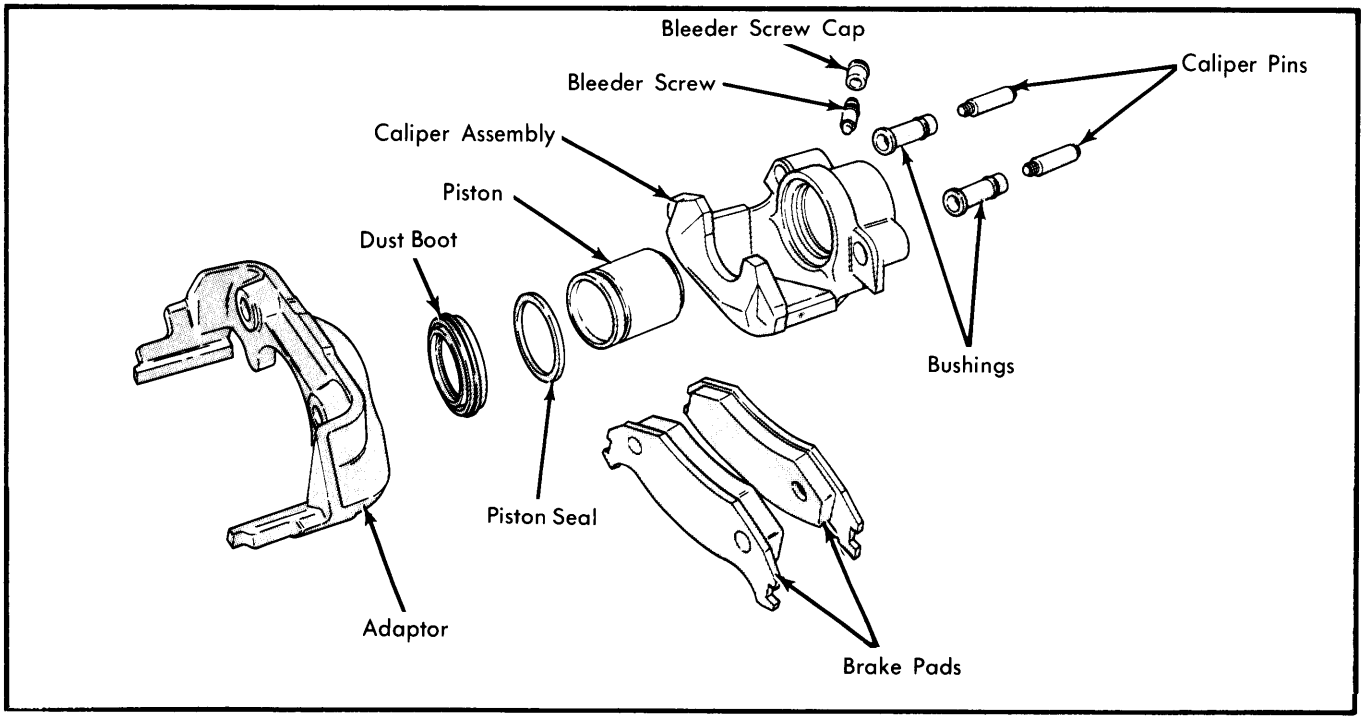

Fig. 2 Exploded View of Floating Caliper Assembly Used on Front Wheel Drive Vehicles

CHRYSLER CORP. SINGLE PISTON DISC (Cont.)

from rotor. Remove outer pad by prying between pad and caliper fingers. Support caliper with wire to prevent damage to brake hose. Remove inner pad.

Installation – **1)** Slowly and carefully push piston into bore of caliper until bottomed. Slide new outer disc pad into recess of caliper.

NOTE – *No free play between pad flanges and caliper fingers should exist. If free play is evident by vertical pad movement after installation, remove pad and bend flanges to create slight interference fit to eliminate free play.*

2) Position inner pad in position on adapter with pad flanges in adapter machined guides. Slowly slide caliper assembly into position in adapter and over rotor. Align caliper on machined guides of adapter.

CAUTION – *Be careful not to pull dust boot from its groove as piston and boot slide over inner pad.*

3) Install anti-rattle springs and retaining clips and tighten retaining screws. Make sure inner anti-rattle spring is installed on top of retaining spring plate.

4) Pump brake pedal several times until a firm brake pedal is obtained. Refill master cylinder if necessary. Bleed brake system if necessary. Install wheel and tire assembly and lower vehicle.

Removal (Horizon, Omni & Rampage) – **1)** Raise and support front of vehicle and remove wheel and tire. Remove caliper guide pins and anti-rattle spring. See *Fig. 1.*

2) Remove hold-down spring from caliper assembly by pushing in and outward at center of spring. Loosen but do not remove caliper guide pins until caliper is free. Remove guide pins only if bushings or sleeves are to be replaced.

3) Remove caliper by slowly sliding it outward away from rotor. Support caliper firmly to prevent damage to brake hose. Slide outer pad from adapter. Slide rotor off drive axle hub and studs. Slide inner pad out of adapter.

4) Remove shoe from caliper by pulling away from piston. Lift outer pad from adapter.

Installation – **1)** Install new inner pad in caliper, entering retainer in bore in piston. Position outer pad on adapter.

2) Slowly and carefully push piston back into caliper bore until bottomed. Slide new inner pad piston into position in adapter and install rotor over studs on drive hub.

3) Position outer pad in adapter. Carefully lower caliper over rotor and outer pad. Insert guide pins through bushings, caliper and adapter.

4) Press in on pins and thread into adapter, using care not to cross threads. Tighten to specifications. Install anti-rattle spring with end loop inboard on caliper lug.

5) Install hold-down spring. Pump brake pedal several times until a firm pedal is obtained. Refill master cylinder and bleed brake system if necessary.

6) Install wheel and tire and tighten stud nuts by skipping every other nut going around. Tighten first to ½ of final specification, then repeat sequence to full specification. Road test vehicle and seat pads by making several stops.

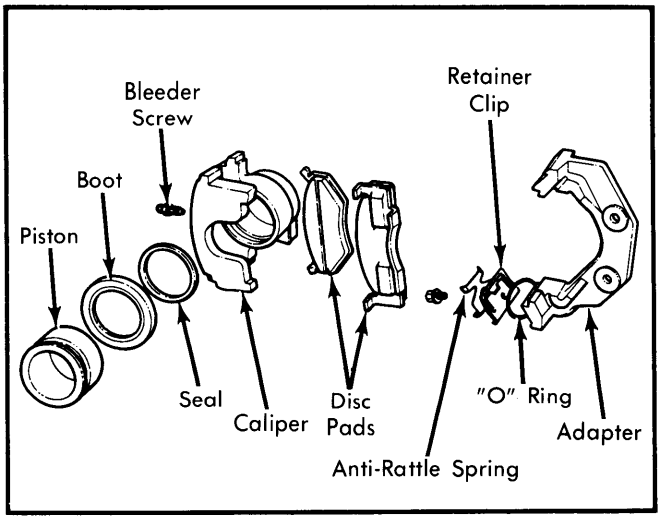

Fig. 3 Exploded View of Sliding Caliper Assembly Used on Rear Wheel Drive Vehicles

Removal (Rear Wheel Drive Models) – **1)** Raise vehicle on hoist or jack stands. Remove wheel and tire assembly. Remove caliper retaining clips and anti-rattle springs. Remove caliper from disc by slowly sliding caliper assembly out and away from disc.

2) Remove outboard shoe (flanges on outboard shoe will retain shoe to caliper) by prying between shoe and caliper fingers. Support caliper so as not to damage flexible brake hose. Remove inboard brake shoe.

Installation – **1)** Slowly and carefully push piston back into bore until bottomed. Watch for master cylinder overflow. Slide new outboard shoe and lining assembly in recess of caliper.

2) Position inboard shoe in position on adapter with shoe (flanges) in the adapter. Slowly slide caliper assembly into position in adapter and over disc. Align caliper on machined ways of adapter.

3) Install anti-rattle springs and retaining clips and tighten retaining screws to specifications. The inboard shoe anti-rattle spring must always be installed on top of the retainer spring plate.

REMOVAL & INSTALLATION

BRAKE CALIPER

Caliper removal and installation procedures are the same as for disc pad assembly replacement, except that it will be necessary to disconnect brake hose from caliper. *See Disc Pad Replacement.*

ROTOR

Lateral Runout – Tighten wheel bearings until all end play is eliminated. Attach dial indicator to suspension such that dial pointer contacts rotor face approximately one inch from outer

CHRYSLER CORP. SINGLE PISTON DISC (Cont.)

edge. Turn rotor through one complete revolution, checking indicator as rotor moves. If runout exceeds specifications, refinish or replace rotor assembly as necessary.

Parallelism – Measure thickness of rotor at 12 points around rotor. Make all measurements one inch from edge of rotor. If rotor does not meet specifications, refinish or replace rotor assembly as necessary.

Removal – Raise and support front of vehicle. Remove wheel and tire. Remove caliper assembly as outlined in Disc Pad Replacement Section. Suspend caliper from wire hook to avoid damage to brake line. Remove rotor from drive hub studs.

Installation – Slide brake disc assembly on drive flange studs. Clean both sides of braking disc with alcohol or suitable solvent. Install caliper assembly. Reverse removal procedure to complete installation.

OVERHAUL

Disassembly – 1) With caliper removed from rotor (brake hose still attached), carefully depress brake pedal to hydraulically force piston out of bore. Pedal will fall away when piston has passed bore opening. Support brake pedal to any position below first inch of travel to prevent fluid loss.

CAUTION – *Chrysler Corp. recommends that compressed air not be used to remove piston from caliper.*

2) Disconnect brake hose from caliper in a padded vise. Do not clamp unit too tightly. Remove dust boot, and using a small wooden or plastic stick, pry seal from caliper bore groove. Press out inner and outer bushings from bore. On Aries, Le Baron, Reliant and 400, discard bushings and Teflon sleeves.

NOTE – *Do not use a screwdriver or other metal tool to remove seal from caliper, because of possibility of scratching piston bore or burring edges of seal groove.*

Cleaning & Inspection – Clean all components, using denatured alcohol, and air dry. Blow out all passages and bores. Inspect piston and bore for scoring or pitting. Clean light scoring or corrosion with crocus cloth. Bores with deep scoring may be honed, providing diameter of bore is not increased more than .001". If specification is exceeded, replace caliper.

Reassembly – 1) Dip new piston seal in clean brake fluid and install in groove in bore. Position seal at one area in groove, and with clean fingers, gently work seal into groove until seated. Coat new piston boot with clean brake fluid, leaving a generous amount inside boot.

2) Position dust boot over piston. Install piston into bore, pushing it past piston seal, until it bottoms in bore. Position boot in bore. Using a hammer and Installer Tool (C-4682 for Horizon, 024, Rampage and Omni), and tool (C-4689 for Aries, Reliant, Le Baron and 400), and Handle (C-4171) for all models, drive boot in position in bore.

3) Compress flange of new inner and outer guide pin bushing with fingers. Work into position by pressing in on bushings, using fingers or plastic trim stick until seated. On Aries, Reliant, Le Baron and 400, remove Teflon sleeves from guide pin bushings before installing bushings into caliper. After bushings are installed, reinstall Teflon sleeves into bushings.

NOTE – *Be sure bushing flanges extend over caliper casting evenly on both sides.*

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
Brake Hose-to-Caliper	19-29 (26-39)
Adapter Mounting Bolts	
Aries, Horizon, Omni & Reliant	70-100 (95-136)
All Others	95-125 (129-170)
Guide Pins	
Aries & Reliant	18-22 (24-30)
Horizon & Omni	25-40 (34-54)
Application	**INCH Lbs. (N·m)**
Caliper Retainer Plate Screws	170-260 (19-29)
Splash Shield Mounting Bolts	
Aries, Horizon, Omni & Reliant	200-300 (23-34)
All Others	160 Min. (18)
Bleeder Screw	
Aries, Horizon, Omni & Reliant	60-100 (7-11)
All Others	80-170 (10-19)

DISC BRAKE ROTOR SPECIFICATIONS

Application	Disc Diameter	Lateral Runout	Parallelism	Original Thickness	Minimum Refinish Thickness	Discard Thickness
Aries & Reliant	9.28"	.005"	.0005"	.930-.940"	.912"	.882"
Horizon & Omni	9.00"	.005"	.0005"	.490-.505"	.461"	.431"
All Other Models	10.98"①	.004"	.0005"	1.000-1.010"	.970"	.940"

① – Police and Taxi 11.75" Disc.