JEEP FLOATING CALIPER DISCS

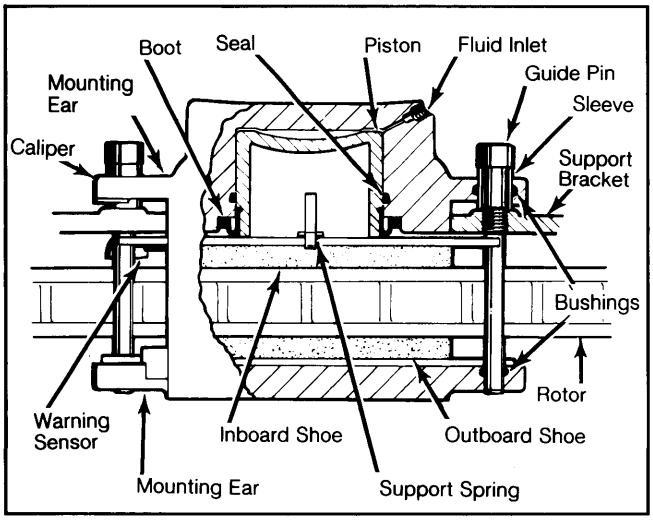
Cherokee, "J" Models, Wagoneer

DESCRIPTION

Floating caliper disc brake assembly uses a single piston caliper which "floats" on 2 pins. As brake pedal is depressed, hydraulic pressure is passed through a proportioning valve to brake caliper piston. This force is transmitted to inboard brake pad, forcing it against braking surface of rotor.

Pressure then moves outer caliper housing and pad inward on caliper mounting pins, thus forcing outer pad against outer braking surface of rotor. When brake is released, pressure is removed from cylinders and inherent rotor runout moves pistons back into cylinders to maintain sufficient rotor-to-pad clearance.

Fig. 1: Cutaway View of Jeep Floating Caliper



ADJUSTMENT & SERVICING

DISC PAD ADJUSTMENT

Automatic adjustment is provided by outward relocation of piston as lining wears.

BLEEDING SYSTEM

See Hydraulic Brake Bleeding in this section.

REMOVAL & INSTALLATION

BRAKE PADS

Removal

1) Drain ⅔ of brake fluid from front reservoir using bleeder screw at front outlet port. Raise and support vehicle and remove front wheels. Place "C" clamp on caliper. Solid end of clamp should contact back of caliper. Screw end should contact metal part of outboard shoes.

2) Tighten "C" clamp until caliper moves far enough to force piston to bottom of bore. This will back shoes off rotor surface, easing lining removal and installation.

3) Remove both Allen head mounting bolts and lift caliper off rotor. Rest caliper on front spring or other suitable support. Do not allow brake hose to support weight of caliper. Remove both brake pads.

4) Remove support spring from inboard shoe and note spring position for correct installation. Remove sleeves from inboard ears of caliper. Remove rubber bushings from all holes in caliper ears.

Installation

To install, reverse removal procedures noting the following: Lubricate new bushings, sleeves, bushing grooves and small ends of mounting bolts with silicone lubricant. Install rubber bushings in all caliper mounting ears. Shoe ears should rest on upper surface of caliper mounting ears and lower shoe tabs should fit into cutout in caliper.

BRAKE CALIPER

Removal & Installation

Caliper removal and installation procedures are same as for disc pad replacement. To remove caliper from vehicle, disconnect brake line at caliper and tape hole to prevent contamination.

DISC ROTOR

Removal

1) Raise vehicle and support with safety stands. Remove wheel and caliper. On models without front hubs, remove rotor hub cap, drive gear snap ring, drive gear, pressure spring and spring cup.

2) On models with front hubs, remove screws attaching hub body to hub clutch and remove body from clutch. Remove large and small retaining rings. Remove hub clutch from axle shaft.

3) On all models, straighten lip of outer locknut retaining washer. Remove wheel bearing locknuts and washers. Remove rotor and wheel bearings.

Installation

1) Lubricate bearings with EP-type water proof wheel bearing lubrication. Install bearing and new seal in rotor hub. Install rotor and inner lock nut and retaining washer.

NOTE: Bearing adjuster inner lock nut has locating peg on one side. When installed, peg must face away from bearing.

2) Install wheel but do not tighten nuts. While rotating wheel, tighten inner locknut to 50 ft. lbs. (68 N.m), and then back of 60°. Install outer locknut and retaining washer. Tighten outer locknut to 50 ft. lbs. (68 N.m).

NOTE: Be sure locating peg is engaged in one of the retaining washer holes before installing outer lock nut.

3) On models without front hubs, install pressure spring cup, pressure spring, drive gear and snap ring. Coat rim of chrome hub cap with Permatex No. 3 (or equivalent) and install cap in rotor hub.

CAUTION: Spring cup must be installed so recessed side of cup faces outboard bearing and flat side of cup faces pressure spring.

4) On models with front hubs, install hubs. Install hub clutch on axle. Install large and small hub retaining rings. Install hub body on clutch and tighten to 30 INCH lbs. (6.8 N.m).

5) On all models, remove drive wheel and install caliper. Reinstall wheel and wheel cover if equipped.

JEEP FLOATING CALIPER DISCS (Cont.)

OVERHAUL

Disassembly

1) Remove caliper from vehicle and remove pads. If pads are to be reused, mark location in caliper. Clean caliper exterior with clean brake fluid. Drain residual fluid from caliper and place caliper on a clean working surface.

2) Remove piston from caliper by applying compressed air to fluid port. Use just enough pressure to ease piston out of bore. Protect piston from damage with folded cloths. Do not try to catch piston by hand.

3) Pry dust boot out of bore with screwdriver. Do not scratch bore. Using a small plastic or wooden stick, pry piston seal from bore. Remove bleeder screw, sleeves and rubber bushings. Clean all parts in clean brake fluid. Blow parts dry with dry, filtered compressed air.

4) Examine parts for rust, corrosion, pitting, scratches, or cracks. Do not attempt to refinish piston in any way. Removal of nickel-chrome plating will lead to pitting, rusting, and eventual cocking in bore.

5) Minor stains on piston bore can be polished with crocus cloth only. Do not use emery cloth or any other abrasive. Wash bore thoroughly with brake fluid after using crocus cloth.

Reassembly

1) Lubricate bore and new seal with brake fluid and install seal in groove using fingers. Lubricate piston with brake fluid and install new dust boot on piston. Slide metal retainer portion of dust boot over open end of piston and push retainer towards end of piston until lip on fold seats in piston groove.

2) Push retainer portion of boot forward until boot is flush with rim at open end of piston and snaps into place. Insert piston in bore being careful not to unseat piston seal. Push piston to bottom of bore using hammer handle (approximately 50 lbs. of force is required). Position dust boot retainer in counterbore at top of piston.

3) Seat dust boot retainer with tool (J-22904). Metal retainer portion of boot must be evenly seated in counterbore and must fit below face of caliper. Install bleeder screw. Connect brake line to caliper using new copper gaskets.

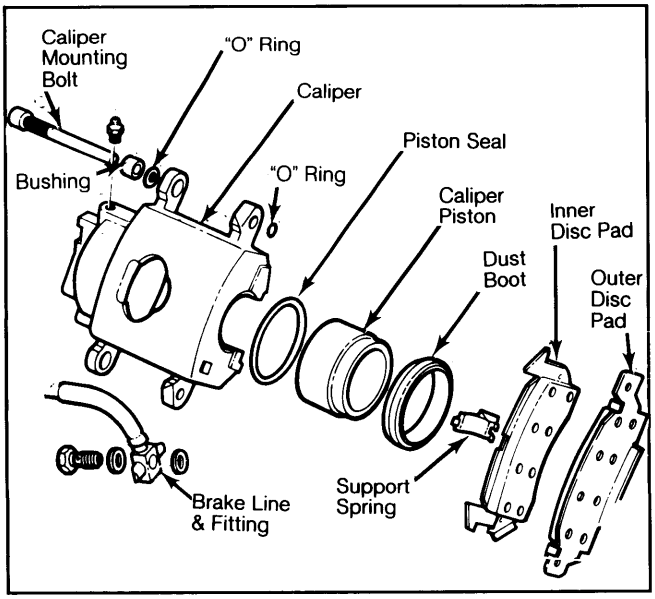
4) Install pads. Install caliper over rotor, bleed brakes and install wheel. Test system before moving vehicle.

ROTOR

Runout

Measure rotor lateral runout by mounting a dial indicator on support stand or steering spindle. Position indicator stylus so it contacts center of rotor lining. Zero indicator and turn rotor 1 revolution. Note indicator reading. Runout must not exceed specifications. Refinish if necessary.

Fig. 2: Exploded View of Floating Caliper Assembly



NOTE: Do not clean bolts with abrasives, as protective plating may be removed.

Parallelism

Measure rotor parallelism with a micrometer. Measure thickness at 4 or more equally spaced points around rotor circumference. Make all measurements at same distance from edge of rotor. Variation must not exceed specification. Refinish if necessary.

NOTE: Thickness of machined rotor must not be below minimum thickness specification.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Caliper Mounting Bolts	30-40 (41-54)
	INCH lbs. (N.m)
Bleeder Screw	40-140 (4.5-15.9)
Brake Line-to-Caliper	160 (18.1)

DISC BRAKE ROTOR SPECIFICATIONS

Application	Disc Diameter In. (mm)	Lateral Runout In. (mm)	Parallelism In. (mm)	Original Thickness In. (mm)	Min. Refinish Thickness In. (mm)	Discard Thickness In. (mm)
"CJ" and Scrambler	11.70 (297.2)	.005 (.12)	.001 (.03)	.....	.815 (20.70)	.815 (20.70)
Cherokee, Wagoneer and Pickup	12.00 (304.8)	.005 (.12)	.001 (.03)	.....	1.215 (30.86)	1.215 (30.86)