

FORD SLIDING CALIPER DISCS

DESCRIPTION

All Ford models equipped with front disc brakes use the sliding caliper type. All 100, 150 and 250 Series (up to 6900 GVW) use a single piston type. All 250 Series (over 6900 GVW) and 350 Series use a dual piston type.

On all models, caliper is secured to anchor plate by a retaining key and spring. Ventilated rotor is cast with wheel hub. As brake pedal is depressed, fluid from master cylinder passes through the metering valve and into caliper cylinder.

ADJUSTMENT & SERVICING

DISC PADS

Pad wear is automatically compensated for by piston sliding outward in cylinder bore; therefore, no disc pad adjustment is required. When pad surface is worn to within .030" (.76 mm) of rivet, pad must be replaced.

BLEEDING SYSTEM

See *Hydraulic Brake Bleeding in this Section*.

REMOVAL & INSTALLATION

DISC BRAKE PADS

NOTE: Always replace both sets of brake pads together. Never service one wheel only.

Removal (Single Piston Type)

1) To prevent master cylinder overflow when caliper is depressed, remove a small amount of brake fluid from master cylinder. Raise vehicle and remove front wheel. Place a large "C" clamp on caliper, and tighten clamp to bottom piston in cylinder bore. Remove clamp.

2) Remove key retaining screw, then, using a brass rod and light hammer, drive out caliper support spring. Remove caliper from spindle by pushing it downward against spindle and rotating upper end upward and out of spindle.

CAUTION: Lay caliper on tie rod or support with wire. Do not allow caliper to hang by brake line.

3) Remove outer disc pad from caliper. It may be necessary to tap pad to loosen pad flange from caliper. Remove inner disc pad from spindle assembly, then remove pad anti-rattle clip from spindle.

Installation

1) Install new anti-rattle clip in spindle. Place lower end of inner pad into spindle against anti-rattle clip and slide upper end of pad into position. Be sure clip is still in position.

2) With caliper piston fully bottomed in cylinder bore, position outer pad on caliper and press shoe tabs into place. If shoe cannot be pressed into place by hand, use a large "C" clamp. To complete installation, reverse removal procedure.

Removal (Dual Piston Type)

1) To prevent master cylinder overflow when caliper is depressed, remove a small amount of brake fluid from master cylinder. Raise vehicle and remove front wheel. Remove key retaining screw.

2) Using a brass rod and light hammer, drive out key and spring. Remove caliper by rotating key and spring end out away from rotor. Slide opposite end of caliper clear of slice in support and off the rotor. Do not allow caliper to hang from brake line. Remove caliper disc pad anti-rattle spring. Remove inner and outer disc pad.

Installation

1) Make sure caliper pistons are fully bottomed in caliper. Install disc pads and anti-rattle spring. Place caliper rail into the slide on support and rotate caliper onto rotor.

2) Place key and spring into position and start inserting between caliper and support. Use a screwdriver if necessary to hold caliper up against support.

NOTE: Spring is between key and caliper. Spring tangs overlap ends of key.

3) Drive key and spring into position aligning correct notch with existing hole in support. Install key retaining screw and tighten to 12-20 ft. lbs. (16-27 N.m). Check brake fluid level in master cylinder and fill as necessary.

BRAKE CALIPER

Removal & Installation

Caliper removal and installation procedures are same as for disc pad replacement, except it will be necessary to disconnect brake hose. After caliper installation, bleed brake system.

DISC ROTOR

Removal (2-WD Models)

Raise vehicle and install safety stands. Remove wheel, tire and caliper assembly. Remove dust cap, cotter pin, nut, washer and outer bearing. Carefully remove hub and rotor assembly from spindle.

Installation

To install hub and rotor assembly, reverse removal procedures and adjust front wheel bearings. See *Wheel Bearing Adjustment in SUSPENSION Section*.

Removal (4-WD Models)

Raise and support vehicle on safety stands. Remove wheel and tire. Remove locking hub assembly as outlined in Locking Hub article in *DRIVE AXLE Section*. Remove wheel bearing lock nut and adjusting nut with spanner (T59T-1197 for F100/250 and Bronco, T78T-1197-A for F350). Remove hub and disc assembly.

Installation

Reverse removal procedures to install, ensuring that both hub dials are in the same position. Adjust wheel bearings. See *Wheel Bearing Adjustment in SUSPENSION Section*.

OVERHAUL

BRAKE CALIPER

Disassembly (Single & Dual Piston)

1) Remove caliper as previously outlined. Remove plug from inlet port (if equipped) and drain fluid from cylinders. Place a block of wood between caliper and cylinders. Apply low air pressure to brake hose inlet. Air pressure will force out piston(s).

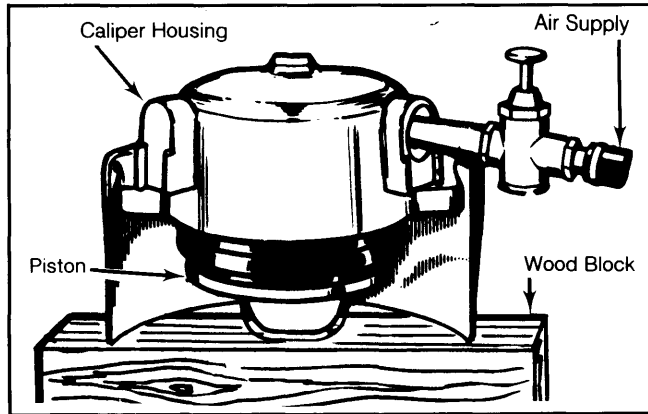
2) If a piston is jammed or cocked and will not easily come out, tap end of piston sharply with a brass

Brake Systems

FORD SLIDING CALIPER DISCS (Cont.)

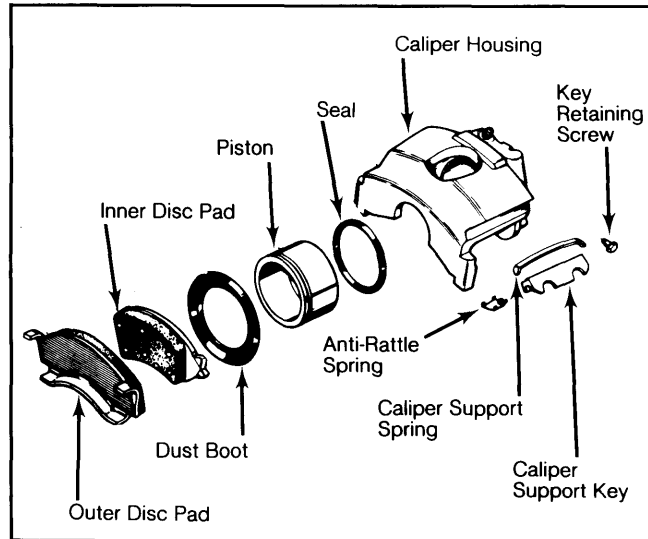
hammer to straighten. Do not pry piston from bore. Reapply low air pressure to remove cocked piston. Remove seal and boot from grooves. Discard seals and boots.

Fig. 1: Using Compressed Air to Remove Caliper Piston



Use low pressure air to force out piston(s).

Fig. 2: Exploded View of Single Piston Caliper



Cleaning & Inspection

Clean rust and corrosion from caliper machined surfaces with a wire brush, being careful not to get wire brush in cylinder bores. Clean all components with denatured alcohol and dry with compressed air. Inspect

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)
E250/350, 4-WD F-250 and 2-WD F250 over 6800 lbs. GVW010 (.25)	.001 (.03)	1.25 (31.8)	1.21 (30.7)	1.18 (29.9)
F100 4600 GVW w/Power Brakes010 (.25)	.001 (.03)	.98 (24.9)	.94 (23.9)	.81 (20.6)
All Others010 (.25)	.001 (.03)	1.19 (30.2)	1.15 (29.2)	1.12 (28.4)

¹ — Specifications given are for separate hub and rotor. With integral hub and rotor assembly: .003" (.08 mm).

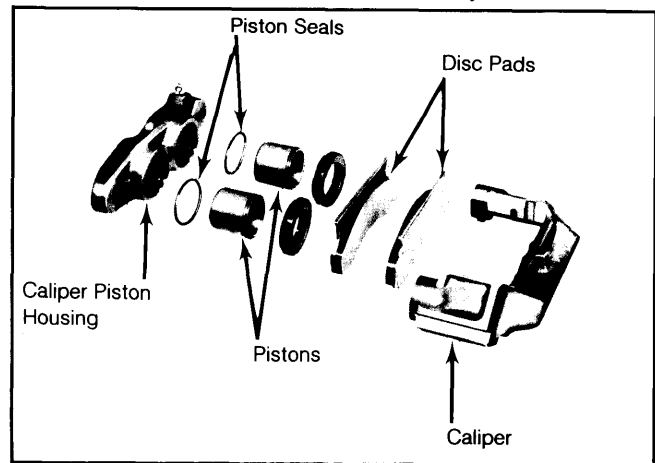
cylinder bore, seal grooves and boot grooves for wear or damage. Replace anti-rattle clip, caliper support spring and key.

Reassembly (Single Piston)

1) Lubricate piston seal with clean brake fluid and install in cylinder bore groove. Lubricate cylinder with clean brake fluid. Coat piston and outside beads of dust boot with clean brake fluid. Push piston through boot until boot is around bottom (closed end) of piston.

2) Position piston and boot directly over cylinder bore. Work bead of dust boot into groove near top of cylinder bore. With bead seated in groove, press straight down on piston until it bottoms in cylinder bore. Care must be taken not to cock or jam piston in cylinder. If necessary use a "C" clamp and a block of wood to bottom piston in cylinder.

Fig. 3: Exploded View of Dual Piston Caliper



Reassembly (Dual Piston)

1) Lubricate new piston seals with clean brake fluid and install seals in grooves in cylinders. Lubricate cylinders with clean brake fluid. Lubricate retaining lips of boots with clean brake fluid and install in grooves in cylinders.

2) Coat pistons with clean brake fluid. Insert into cylinders by hand until they are beyond piston seals. Position wood block over a piston and press into cylinder, taking care not to cock piston. Install other piston in same manner.

DISC ROTOR SERVICING

Maximum of .020" (.51 mm) of material may be taken off each side of braking surface. Cuts must be of equal depth on both sides of rotor.