

FORD MOTOR CO. SLIDING CALIPER DISCS

All Models (Front)

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 PAD ADJUSTMENT

Pad wear is automatically compensated for by piston sliding outward in cylinder bore; therefore, no disc pad adjustment in service is required.

BLEEDING SYSTEM

See *Hydraulic Brake Bleeding in this Section*.

REMOVAL & INSTALLATION

DISC BRAKE PADS

NOTE — Always replace both disc brake pads on an axle 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 from 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.

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 slide in the 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 and 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. 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 (Two Wheel Drive 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 WHEEL ALIGNMENT Section*.

Removal (4WD with Manual Locking Hubs) — 1) Raise vehicle and support with safety stands. Remove capscrews and separate cap assembly from body assembly. Remove snap ring from axle shaft. Remove lock ring in groove of wheel hub. Slide body assembly out of wheel hub.

2) Remove grease cap and driving hub snap ring. Remove driving hub and pressure spring. Remove wheel bearing locknut, lock ring and adjusting nut using tool T59T-1197-B. Remove hub and disc assembly.

Removal (4WD with Automatic Locking Hubs) — 1) Raise vehicle and support on safety stands. Remove capscrews and hub cap assembly from spindle. Remove capscrew from end of axle shaft. Remove lock ring in wheel hub groove with knife blade.

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2) Remove body assembly from spindle, using a puller if necessary. Unscrew 3 screws in spindle locknut until heads are flush with locknut edge. Remove outer spindle locknut with tool T80T-4000-V.

3) Remove grease cap and driving hub snap ring. Remove driving hub and pressure spring. Remove wheel bearing locknut, lock ring and adjusting nut using tool T59T-1197-B. Remove hub and disc assembly.

Installation — To install, reverse removal procedures, ensuring that both hub dials are in the same position. Adjust wheel bearings. See *Wheel Bearing Adjustment in Wheel Alignment Section*.

OVERHAUL

BRAKE CALIPER

CAUTION — All models except Bronco are equipped with a new phenolic caliper piston for 1980. Special care should be taken when calipers require service to avoid unnecessary piston replacement. **DO NOT** use a screwdriver or other similar tool to pry piston out of caliper bore, to prevent chipping and scuffing. Do not replace pistons for cosmetic surface irregularities.

Disassembly (Single & Dual Piston) — 1) Remove caliper as previously outlined. Remove plug in 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).

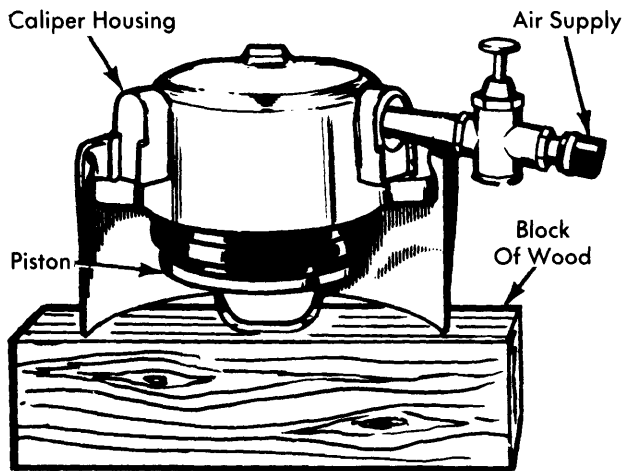


Fig. 1 Using Compressed Air to Remove Caliper Piston

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

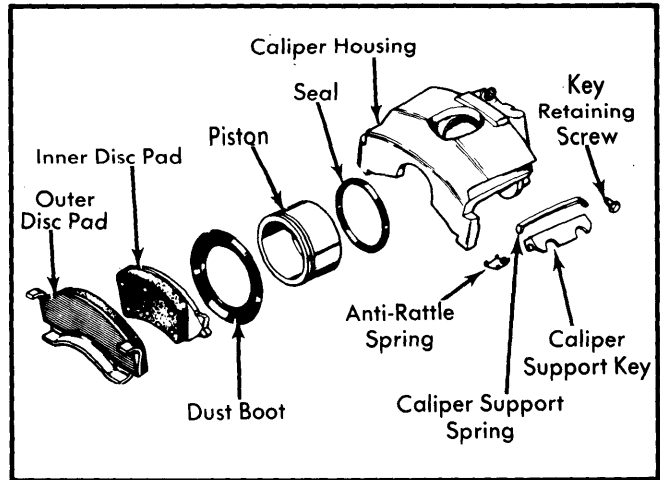


Fig. 2 Exploded View of Single Piston Caliper

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 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.

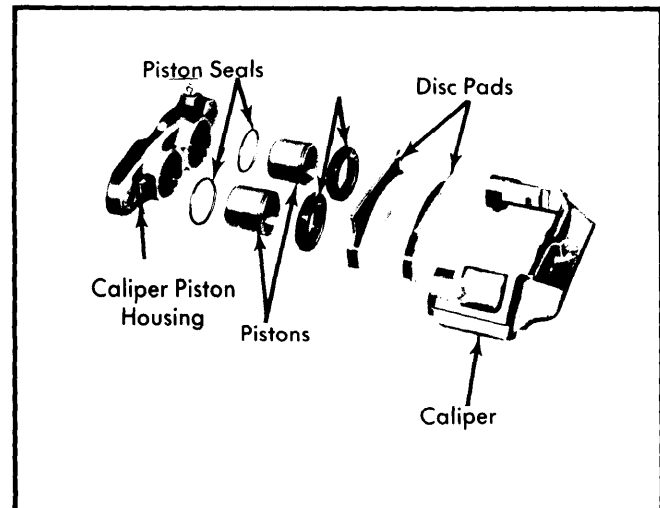


Fig. 3 Exploded View of Dual Piston Caliper

Brake Systems

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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 a wood block over one piston and press into cylinder, taking care not to cock piston. Install other piston in same manner.

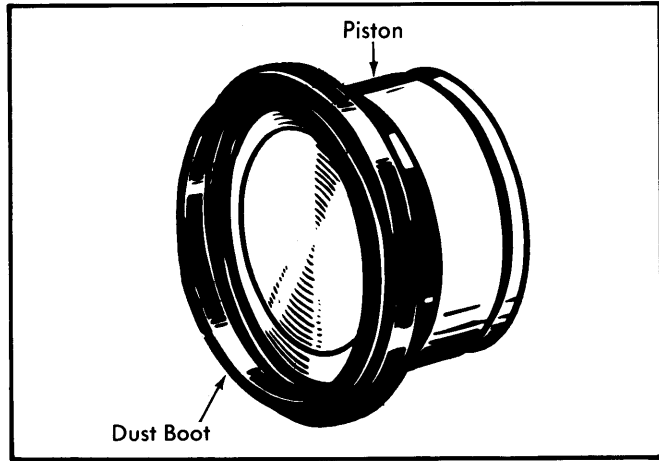


Fig. 4 Dust Boot Installation (Single Piston Type)

DISC ROTOR SERVICING

Maximum of .020" material may be taken equally off each braking surface. Finished braking surfaces of rotor must be parallel within .0007" for integral hub and disc and .001" or separate hub and disc.

BRAKE SPECIFICATIONS

Application	Dimension
Disc Pad Wear Limit.....	.030" Above Rivet Head
Caliper Piston Diameter	
Single Piston Type.....	2.875"
Dual Piston Type.....	2.875"
Disc Rotor Diameter	
Single Piston Type.....	①11.54"
Dual Piston Type.....	12.50"
New Rotor Thickness	
Single Piston Type.....	1.190"
Dual Piston Type.....	1.250"
Resurface Rotor Thickness (Minimum)	
Single Piston Type.....	1.120"
Dual Piston Type.....	1.180"
Rotor Runout (Maximum)	
Integral Hub Type.....	.003"
Separate Hub Type.....	.010"
Rotor Thickness Variation (Maximum)	
Integral Hub Type.....	.0007"
Separate Hub Type.....	.001"

① — Rotor diameter is 12.60" on F-250 models with single piston caliper.