

PANTERA

Pantera

DESCRIPTION

Power assisted hydraulic disc brakes are used on all four wheels. Brake system utilizes two different types of disc brakes. Front wheels use four piston fixed caliper type while rear wheels employ single piston floating calipers. Hydraulic system is designed so front and rear brakes operate off different circuits. Parking brake is mounted between front seats and, when actuated, locks parking brake shoe against rotor drum.

ADJUSTMENT

BRAKE PEDAL

Loosen lock nut and remove pin. Turn push rod in or out to obtain required pedal position. Refit pin and lock nut. Adjust stop screw until there is a $\frac{3}{32}$ - $\frac{1}{8}$ " (2.38-3.17 mm) clearance between contact head and brake pedal lever.

FRONT DISC BRAKE PADS

Front disc brakes are self-adjusting; therefore, no adjustment is required.

REAR DISC BRAKE PADS

Rear disc brakes are self-adjusting; therefore, no adjustment is required.

PARKING BRAKE

Apply parking brake approximately six notches. Raise vehicle, remove cotter pin and withdraw washer from pivot arm. Loosen lock nut and adjust rod forward until rear wheels cannot be turned by hand. Tighten lock nut, reassemble hardware, and check operation.

HYDRAULIC SYSTEM BLEEDING

Attach a bleeder hose to right rear brake caliper bleeder. Immerse other end of hose into a half-filled brake fluid container. Loosen bleeder valve and press down on pedal; release pedal slowly. Continue operation until all air bubbles stop. Hold pedal down and tighten bleeder valve. Repeat procedure on left rear, right front, and left front wheels.

REMOVAL & INSTALLATION

FRONT DISC BRAKE PADS

Removal — Raise vehicle and remove tire and wheel. Siphon a portion of brake fluid from master cylinder. Insert screwdrivers under brake pad support springs. Remove caliper mounting bolts and lift assembly from vehicle. While holding caliper, remove pads from centering pins. Seat pistons and prevent them from fully extending into cylinder. *NOTE* — Do not suspend caliper from brake hose.

Installation — To install brake pads, reverse removal procedure.

REAR DISC BRAKE PADS

Removal — Raise vehicle and remove tire and wheel. Siphon a portion of brake fluid from master cylinder. Remove pad retaining spring, loosen holder retaining bolt and extract old pads and holder.

Installation — Insert screwdriver in direct piston groove and rotate piston 45°. Compress pistons together and press back on indirect piston while forcing yoke toward rotor. Rotate piston to its original position. Install new direct pad. Push direct pad into cylinder and fit new indirect pad. Install retaining spring. *NOTE* — Ensure spring is properly seated and that arrow points in direction of wheel rotation.

FRONT DISC BRAKE CALIPER

Removal — Caliper is removed during brake pad replacement. See *Front Disc Pad Removal*. Disconnect hydraulic lines.

Installation — To install, reverse removal procedure and bleed hydraulic system.

FRONT DISC BRAKE ROTOR

Removal — Raise vehicle and remove wheel. Remove caliper assembly as previously described. Remove grease cap, cotter pin, lock nut, and adjusting nut. Pull rotor and hub assembly from vehicle being careful not to drop outer wheel bearing.

Installation — To install, reverse removal procedure and adjust wheel bearings. See *Pantera Wheel Bearing Adjustment in WHEEL ALIGNMENT Section*.

REAR DISC BRAKE CALIPER

Removal — Open bleeder valve outlet and force out fluid. Remove brake pad retaining spring and holder. Remove brake pads, straighten lock tabs, and extract caliper mounting bolts. Disconnect parking brake and caliper brake hose.

Installation — To install, reverse removal procedure and bleed hydraulic system.

REAR DISC BRAKE ROTOR

Removal — Raise vehicle and remove wheel. Remove caliper as previously described. Remove cotter pin from ball joint and disconnect ball joint from vertical suspension support. Disconnect half shaft "U" joint flange from rear wheel and swing rotor and suspension supports down. Remove retaining nut from one end of lower control arm pivot pin. Using a drift, remove pin retaining lower control arm to vehicle support. Remove spindle, rotor, and support assembly.

Installation — To install, reverse removal procedure.

MASTER CYLINDER

Removal — Drain fluid from reservoir and disconnect brake lines from master cylinder. Remove master cylinder-to-brake booster mounting nuts and separate master cylinder, taking care not to damage vacuum seal.

Installation — Position master cylinder and fluid seal on push rod; attach brake lines. Adjust push rod by turning dome nut until .028-.035" (.711-.889 mm) clearance is obtained between push rod and master cylinder. Install remaining components in reverse order.

POWER BRAKE UNIT

Removal — Remove master cylinder as previously described. Disconnect brake push rod and remove vacuum hose from booster. Remove mounting bolts and withdraw booster unit with seal.

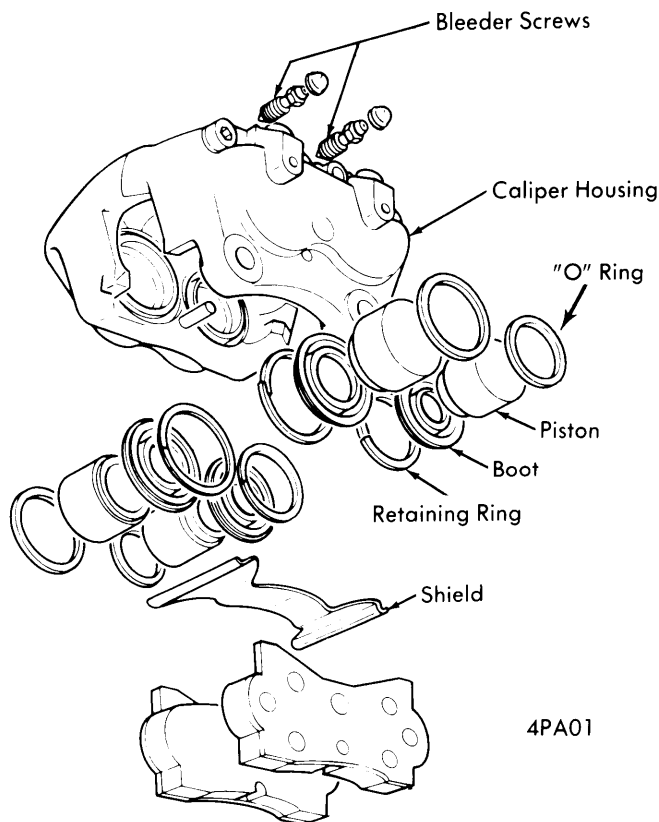
PANTERA (Cont.)

Installation — To install, reverse removal procedure and note the following: Adjust push rod to obtain an overall length of 4.72" (119 mm). This will give proper push rod-to-master cylinder seat clearance.

OVERHAUL

FRONT DISC BRAKE CALIPER

Disassembly — With caliper on bench, use a plastic pick to remove retaining ring and protective boot. Place a small piece of wood between pistons in caliper gap. Using compressed air, force pistons from caliper. Remove "O" rings from seats in caliper bores.



FRONT BRAKE ASSEMBLY

Cleaning & Inspecting — Clean all components in clean brake fluid and visually inspect all parts for wear or fatigue.

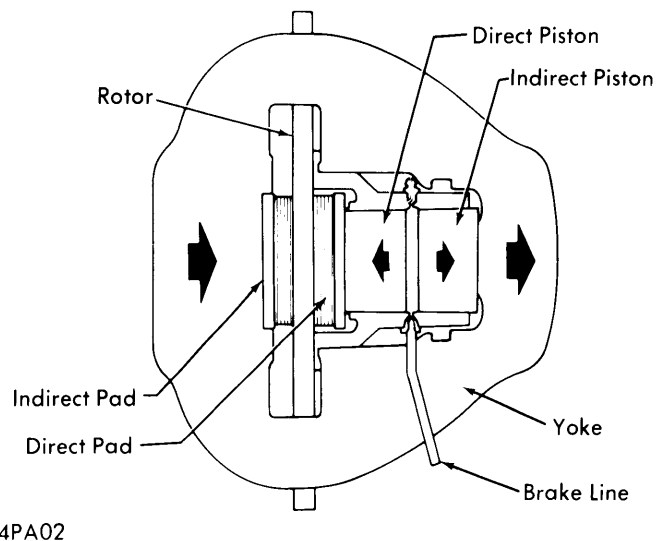
Reassembly — Install new "O" rings in caliper bore. Fit pistons, new boots, and retaining rings. Seat pistons in bores, place pad spring into position and hold with screwdrivers; insert pads.

REAR DISC BRAKE CALIPER

Disassembly — With caliper on bench, separate yoke from cylinder by tapping wider side of yoke on bench. Pull cylinder housing down and remove. Using a plastic pick, remove retaining rings and boots. Raise parking brake lever slightly and remove "C" clip and spring. Rotate direct piston 45° and remove; pull out indirect piston. Extract "O" rings from grooves in caliper.

Cleaning & Inspecting — Clean all components in clean brake fluid and visually inspect all parts for signs of wear or fatigue.

Reassembly — Fit "O" rings in caliper bores, insert pistons into caliper, rotate direct piston 45° into position and carefully install protective boots with retaining rings. Clamp caliper housing in a vise at mounting boss; insert yoke in guide openings and seat into position.



REAR BRAKE ASSEMBLY

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Front Caliper Mounting Bolts.....	50-55 (6.9-7.6)
Upper Ball Joint-to-Support.....	40-45 (5.5-6.2)
Lower Support-to-Lower Control Arm.....	95 (13.1)
Rear Caliper Mounting Bolts.....	35-40 (4.8-5.5)

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DISC BRAKE ROTOR SPECIFICATIONS						
Application	Disc Diameter In. (mm)	Lateral Runout In. (mm)	Parallelism In. (mm)	Original Thickness In. (mm)	Minimum Refinish Thickness In. (mm)	Discard Thickness In. (mm)
Pantera004-.006 (.101-.152)797 ① (20.2)	.672 ② (17.0)

① — Rear .734" (18.6 mm).

② — Rear .609" (15.4 mm).