AUDI 5000

5000

DESCRIPTION

Brake system is hydraulically operated, utilizing a tandem master cylinder and dual diaphragm power brake unit. Front brakes consist of rotors attached to wheel hub and single piston floating calipers. A wear indicator mounts in the outboard brake pad and signals the need for pad replacement via a dashboard light. A pressure regulator mounted under the body is operated by a spring attached to the rear axle. Rear brakes are leading-trailing shoe/drum type, using a dual piston wheel cylinder. Parking brake is cable actuated, operating rear brake assembly.

ADJUSTMENT

FRONT DISC BRAKES

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

REAR DRUM BRAKES

Rear brakes are self-adjusting, therefore, no adjustment in service is required.

PARKING BRAKE

Raise and support vehicle on safety stands. Firmly depress brake pedal once. Set parking brake lever at third notch from fully released position. Tighten adjusting nut at compensator bar until both wheels can just be turned by hand. Release parking brake lever and ensure both wheels rotate freely.

BRAKE WARNING LIGHT

A dual warning light is mounted on the dash. Light should glow when hand brake lever is pulled one notch and go off when lever is fully released (ignition on). Master cylinder reservoir is equipped with sensor which activates the warning lamp if brake fluid level is low. To check, release hand brake and press pin down, bulb should glow (ignition on).

BRAKE PRESSURE REGULATOR

Checking & Adjusting – **1)** Regulator is located on rear frame. Empty vehicle, fill fuel tank and load driver's seat to 165 lbs. (74.8 kg). Bounce rear of car several times and allow vehicle to settle normally. Firmly depress brake pedal and release quickly; regulator should have moved.

2) Measure distance from top of tire rim to lower edge of fender lip (both sides). Install left spring tensioner. Raise vehicle on hoist and insert right spring tensioner (upper end only). Lower vehicle and bounce rear of car several times. Allow car to settle normally and attach right spring tensioner to axle.

3) Raise vehicle and check measurement; adjust if necessary. Connect 1500 psi (110 kg/cm²) gauge to left front caliper and another to right rear wheel cylinder. Bleed gauges and depress brake pedal firmly several times.

4) Depress pedal until front gauge reads 711 psi (50 kg/cm²); rear should read 484-555 psi (34-39 kg/cm²). Increase pedal pressure until front gauge reads 1422 psi (100 kg/cm²); rear should read 811-882 psi (57-62 kg/cm²). Remove gauges and bleed brakes.

5) If pressures are consistently high at rear gauge, release spring tension and move bolt forward. If pressures are consistently low, release spring tension and move bolt rearward. If pressures can not be obtained after adjustment, replace regulator. *See Fig. 1.*

NOTE – *DO NOT adjust regulator with pressure applied to brake pedal.*

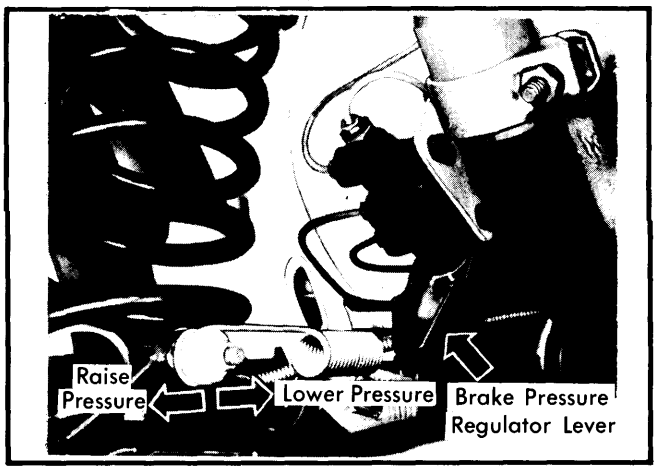

Fig. 1 Brake Pressure Regulator Adjustment

HYDRAULIC SYSTEM BLEEDING

Fill master cylinder reservoir with brake fluid and maintain level throughout bleeding operation. Attach a hose to bleeder screw, and immerse opposite end in a container partially full of brake fluid. Open bleeder screw approximately one-half turn, depress brake pedal, close bleeder screw, and slowly return pedal. Continue operation until bubbles are no longer seen in discharged fluid. Bleeding sequence is right-rear, left-rear, right-front, left-front. When bleeding, push lever on regulator rearward.

REMOVAL & INSTALLATION

FRONT DISC BRAKE PADS

Removal – **1)** Detach wear indicator wire at connector. Remove retaining clip and drive out retaining pins.

2) Pull out inner brake pad. Press floating frame and cylinder outward and remove outer brake pad. Remove wear indicator from hole in pad.

Installation – **1)** Press piston into caliper bore.

NOTE – *Fluid will rise in master cylinder reservoir. Siphon sufficient fluid to prevent overflowing.*

2) Position piston using 20° gauge (VW P84 or equiv.). Insert brake wear indicator in outboard pad and install pads.

3) Slide in retaining pins and install clip. Connect wear indicator wire. Pump brake pedal several times to position pads. Bleed hydraulic system if necessary.

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FRONT DISC BRAKE CALIPER

Removal – Raise and support vehicle; remove tire and wheel. Remove pads and disconnect hydraulic line from caliper. Remove caliper mounting bolts and caliper.

Installation – Reverse removal procedure to complete installation. Bleed hydraulic system.

FRONT DISC BRAKE ROTOR

Removal – With tire and wheel removed, remove caliper mounting bolts and hang caliper from frame with wire. DO NOT remove hydraulic line unless necessary. Remove rotor from hub.

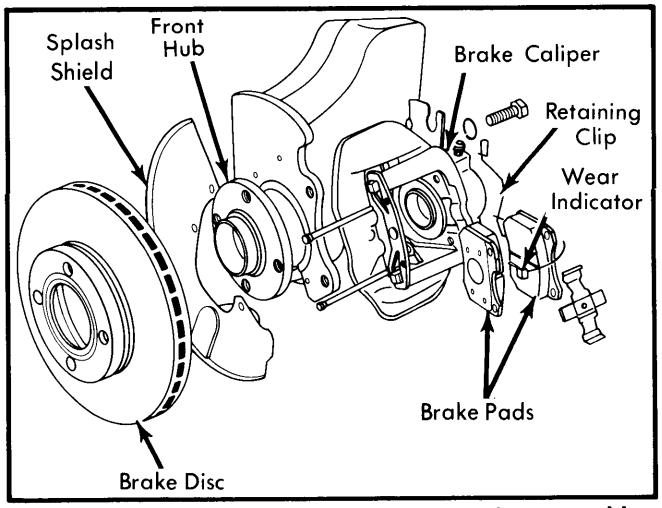

Fig. 2 Exploded View of Front Disc Brake Assembly

Installation – To install rotor assembly, reverse removal procedure. Bleed hydraulic system if necessary.

REAR BRAKE DRUM

Removal – Raise and support vehicle. Before removing right drum, release spring pressure on pressure regulator. Remove one wheel bolt and push adjusting wedge upward with a screwdriver. Reinstall wheel bolt, remove wheel bearing hardware. Remove drum assembly without dropping thrust washer or outer bearing.

Installation – To install, reverse removal procedure and adjust wheel bearings. *See Wheel Bearing Adjustment in WHEEL ALIGNMENT Section.* Depress brake pedal firmly to set self-adjusting mechanism.

REAR BRAKE SHOES

Removal – 1) With drum removed, remove hold-down springs and pins. Remove brake shoes from anchor pins and remove return springs.

2) Disconnect parking brake cable from lever. Disconnect adjusting wedge spring and upper return spring. Remove brake shoes. Place adjuster strut and shoe in vise; remove tension spring. Separate shoe and components.

Installation – To install, reverse removal procedure and note the following: Lug on adjusting wedge faces backing plate. Adjust wheel bearings. *See Wheel Bearing Adjustment in WHEEL ALIGNMENT Section.* After installing drum, depress brake pedal firmly to set adjuster mechanism.

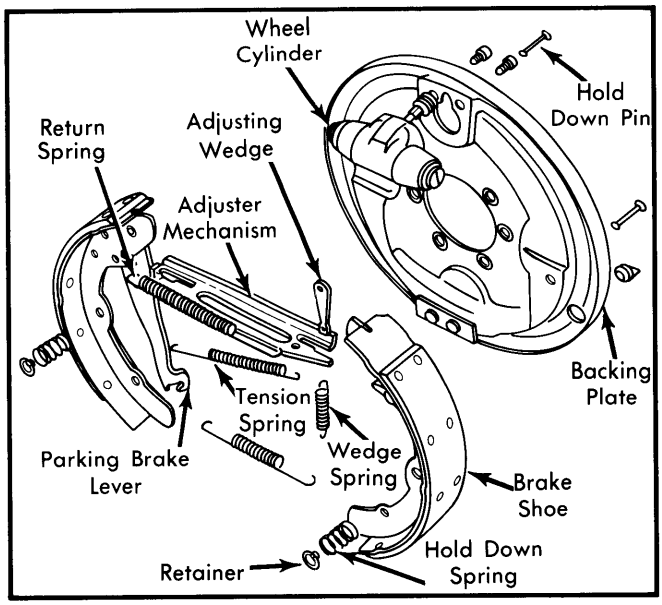

Fig. 3 Exploded View of Rear Brake Assembly

REAR BRAKE WHEEL CYLINDER

Removal & Installation – With drum and shoes removed, remove hydraulic line from wheel cylinder and plug openings. Remove mounting bolts and wheel cylinder. To install, reverse removal procedure and bleed hydraulic system.

MASTER CYLINDER

Removal – Siphon brake fluid from reservoir and remove hydraulic lines from master cylinder. Disconnect warning light electrical lead. Remove mounting bolts and separate master cylinder from power brake unit.

Installation – Replace "O" ring between master cylinder and power brake unit. Reverse removal procedure and bleed hydraulic system.

POWER BRAKE UNIT

Removal – Remove master cylinder from power brake unit. Remove pin at brake pedal and disconnect operating rod. Remove mounting nuts from firewall. Disconnect vacuum line and remove power unit.

Installation – To install, reverse removal procedure and note the following: Replace filter at operating rod end.

NOTE – *Clevis and brake lever each have two holes. Install clevis pin only in holes closest to front of car.*

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Check Valve – Large diameter side fits into power unit. To test, remove vacuum line and check valve. Blow into large diameter hole – valve should open. In the other direction, valve must close. Replace as necessary.

OVERHAUL

FRONT DISC BRAKE CALIPER

Disassembly – Remove pads and wear indicator. Push caliper mounting frame off floating frame. Insert wooden block in floating frame. Separate cylinder and frame with brass drift. Support piston on wooden block and force out with compressed air. Remove piston seal without damaging bore.

Cleaning & Inspection – Clean all parts in alcohol only. Check cylinder bore and piston for damage. Parts are serviced by replacement only.

Reassembly – Coat all parts with ATE brake cylinder paste (or equivalent), reverse disassembly procedure and note the following: Use new seals, dust boots and retaining rings when reassembling. Make sure machined surface of piston face makes a 20° angle to wall of caliper bore. Install disc pads after caliper has been installed on vehicle.

REAR WHEEL CYLINDER

Disassembly – Thoroughly clean outside of cylinder. Remove end boots, piston and seal assemblies and spring. Remove dust cap and bleeder screw.

Cleaning & Inspection – Clean all parts in alcohol only. Check all parts for rust, corrosion or wear. If necessary, replace complete cylinder.

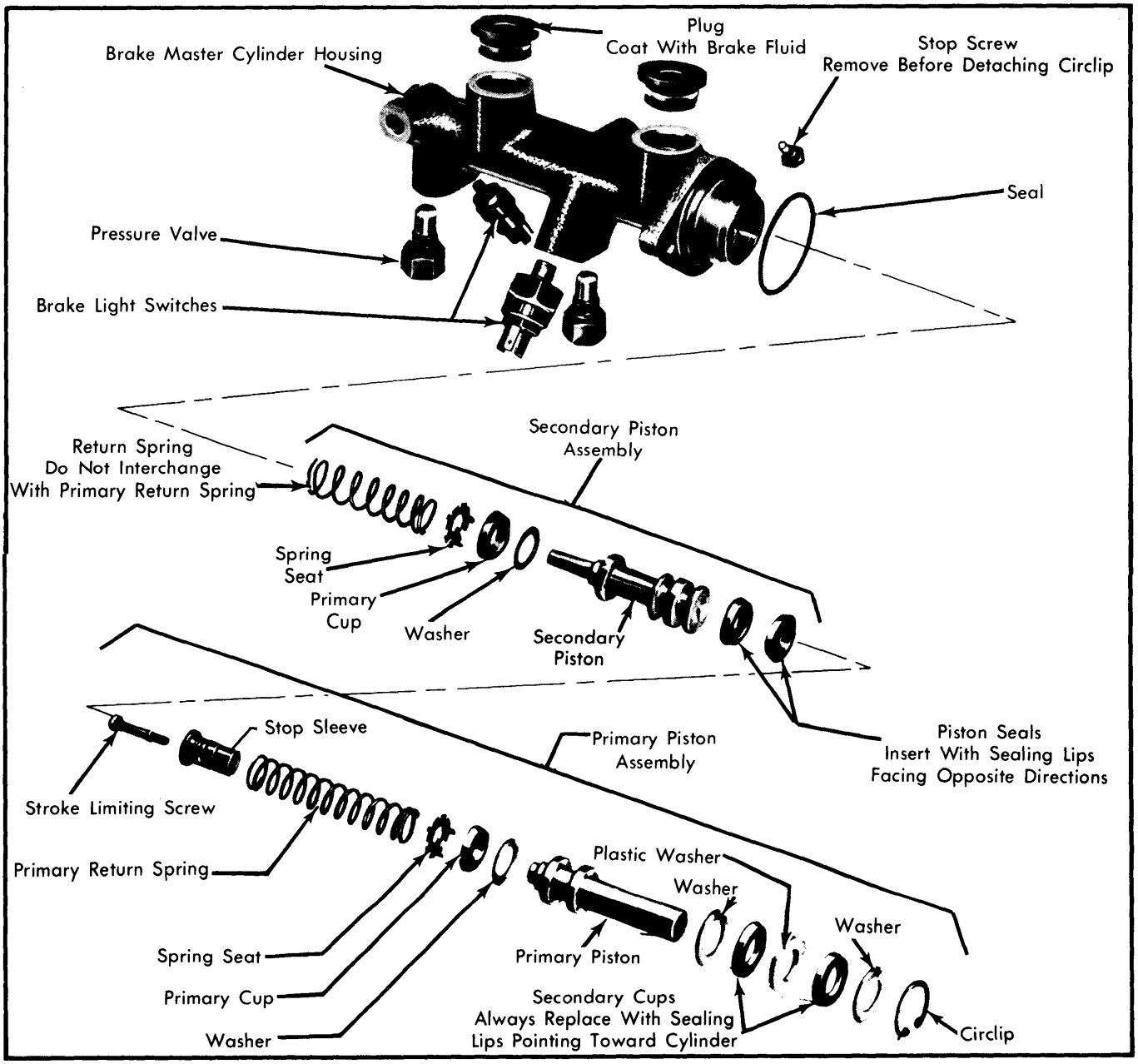

Fig. 4 Master Cylinder Component Relationship

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Reassembly – Reverse disassembly procedure and note the following: Use all new rubber parts. Coat all parts with brake cylinder paste.

MASTER CYLINDER

Disassembly – Thoroughly clean outside of master cylinder. Remove hydraulic fluid reservoir, stop screw and circlip. Withdraw primary and secondary piston assemblies. Disassemble piston assemblies.

Cleaning & Inspection – Clean all parts in alcohol only. Dry with compressed air and check that all passages are free from obstruction. Check cylinder bore for rust, corrosion or other damage. Inspect bore and piston for wear. Replace complete if necessary.

Reassembly – Reverse disassembly procedure and note the following: Lubricate primary piston shaft with silicone grease and all other parts with brake cylinder paste. Replace all rubber parts. DO NOT interchange primary cup and piston seal; piston seal is identified by a groove and chamfered end.

POWER BRAKE UNIT

Manufacturer does not recommend overhaul of power brake unit. Replace as complete assembly if defective.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Caliper Mounting Bolts	83 (11.5)
Master Cylinder Retaining Nuts	18 (2.5)
Power Unit Retaining Nuts	18 (2.5)

BRAKE DRUM SPECIFICATIONS

Application	Drum Diameter In. (mm)	Original Diameter In. (mm)	Maximum Refinish Diameter In. (mm)	Discard Diameter In. (mm)
Audi 5000	9.005 (230)	9.005 (230)	9.094 (231)	9.135 (232)

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)
Audi 5000	10.157 (258)	.004 (.1)	.0008 (.02)	.866 (22)	.....	.807 (20.5)