DATSUN 510 (Cont.)

510

DESCRIPTION

Brake system is hydraulically operated, utilizing a tandem master cylinder and Master-Vac power brake unit. Front disc brakes consist of rotors attached to wheel hubs, and single cylinder, dual-piston, floating-calipers attached to steering knuckles. Rear brakes are leading-trailing shoe/drum type, using a dual piston wheel cylinder. Parking brake is cable actuated, operating on rear wheels.

ADJUSTMENT

PEDAL HEIGHT

Adjust pedal height to specifications by maneuvering brake light switch and operating rod. Secure switch and rod after adjustment.

Pedal Height Specifications

Application	Man. Trans.	Auto. Trans.
Datsun 510	6.06-6.30" (154-160 mm)	6.14-6.38" (156-162 mm)

FRONT DISC BRAKE PADS

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

REAR BRAKE SHOES

Normally, no adjustment is required. Clearance between drum and shoes is automatically compensated when parking brake is operated.

PARKING BRAKE

With rear brakes properly adjusted, adjust parking brake cable turnbuckle until rear brakes are locked when parking brake lever is pulled to sixth or seventh ratchet stop. Release parking brake lever and ensure rear wheels turn freely and that all parts are returned to their original position.

BRAKE WARNING LIGHT

Light indicates parking brake is engaged. To adjust light operation, bend switch plate down until light comes on when brake lever is pulled up 1 notch and goes out when lever is released.

COMBINATION VALVE

Function Test – Accelerate to about 30 mph on a dry concrete surface and harshly apply brakes. If rear wheels lock at same time as fronts do, or if front wheels lock before rears, combination valve is operating properly. If rear wheels lock first, combination valve is malfunctioning; replace valve.

HYDRAULIC SYSTEM BLEEDING

Attach a bleed tube to bleeder screw and immerse opposite end of tube in a container partially filled with brake fluid. Pump brake pedal two or three times, keep pedal fully depressed, open bleeder screw and exhaust air, close bleeder screw, and return brake pedal. Repeat operation until air bubbles are no longer seen in discharged fluid. Repeat procedure on remaining brake lines. Bleed master cylinder first, rear wheels second, and front wheels last.

REMOVAL & INSTALLATION

FRONT DISC BRAKE PADS

Removal – Raise front of vehicle and support with safety stands. Remove wheels. Remove clip securing pad mounting pins. Retain anti-squeal springs with fingers and slide pads out of caliper. Remove anti-squeal springs.

Inspection – Clean pads. If any pad is worn to less than .08"(2 mm) all must be replaced. Always replace pads in sets (pad kit).

Installation – **1)** Clean piston end and area around gripper. See *Fig. 1*. Loosen bleeder, push in outer piston until dust seal groove aligns with end of retaining ring on dust seal. Tighten bleeder. Insert inner pad.

2) Push inner piston in by pulling yoke. Fit outer pad. Grease following locations:

- Cylinder body-to-pad clearance.
- Pad pin-to-pad clearance.
- Pad pin-to-bracket clearance.

3) Refit anti-squeal spring and pad retaining pins. Insert keeper clips. Depress pedal several times to ensure proper operation.

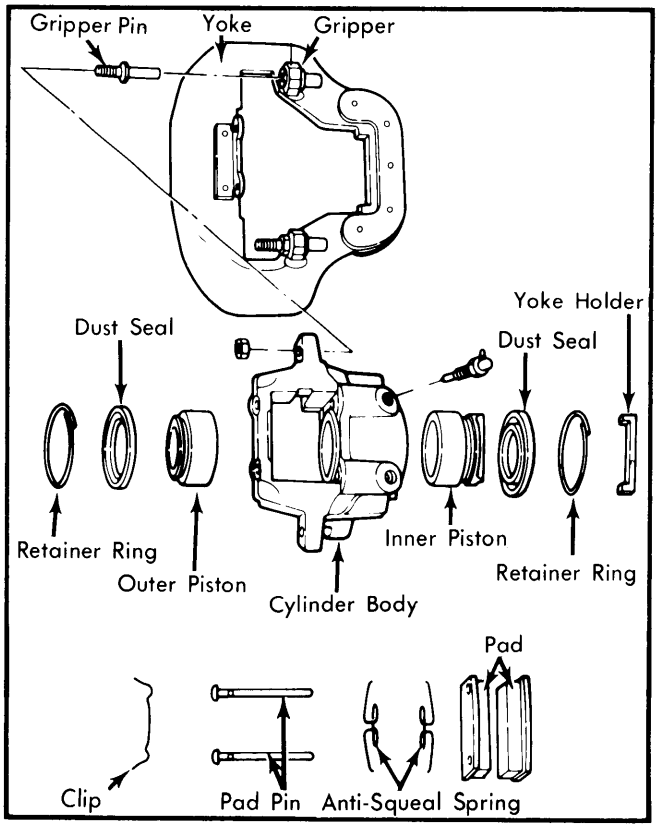

Fig. 1 Exploded View of Datsun 510 Front Disc Brake Assembly

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FRONT DISC BRAKE CALIPER

Removal – Raise vehicle and suitably support on safety stands: remove tire and wheel. Remove brake friction pads as previously described. Disconnect brake line from caliper cylinder. Withdraw caliper mounting bolt and separate caliper from strut.

Installation – To install brake caliper assembly, reverse removal procedures, noting the following: Bleed hydraulic system.

FRONT DISC BRAKE ROTOR

Removal – With caliper removed, remove hub dust cap, cotter pin and nut. Remove hub and rotor assembly with wheel bearing and washer in place. Remove bolts attaching rotor to wheel hub, and separate rotor from hub.

Installation – Reverse removal procedure, tighten rotor-to-hub bolts securly, and adjust wheel bearings.

REAR BRAKE ASSEMBLY

Removal – Raise and support rear of vehicle. Remove brake drum as follows:

- Engage brake lever.
- Pull pin out. See *Fig.* 2. Remove stopper from lever.
- Disengage parking brake lever.

Disconnect brake line and plug open end. Disengage parking brake from back plate. Remove anti-rattle spring and pin. Take off return spring. Remove dust cover and lever with adjuster assembly. Remove wheel cylinder.

Inspection – Replace brake shoes that have worn to .059" (1.5 mm). Examine springs and replace those cracked or fatigued. Piston-to-wheel cylinder clearance must not exceed .059" (1.5 mm).

Installation – Reverse removal process to assemble and install rear brakes. Note that there are left and right hand threaded adjusters.

MASTER CYLINDER

Removal – Disconnect front and rear brake lines from master cylinder. Remove master cylinder attaching nuts and remove master cylinder.

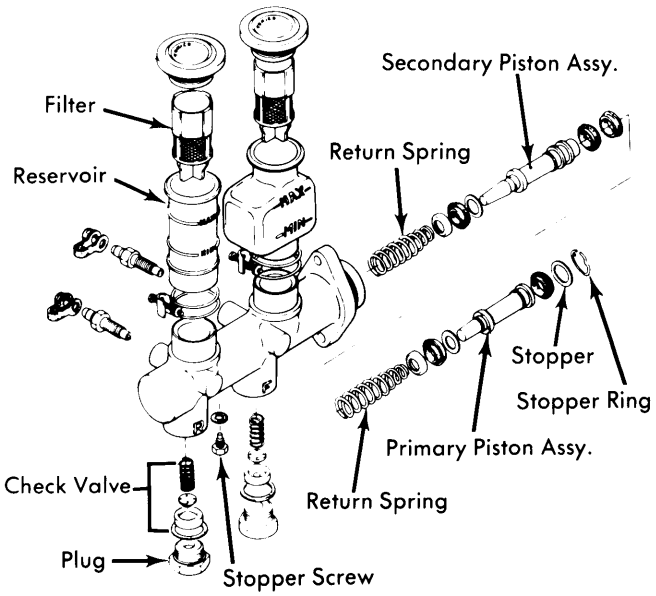

Fig. 3 Exploded View of Tikico Made Master Cylinder. Nabco Made Master Cylinder is Similar But Has Different Piston Configuration

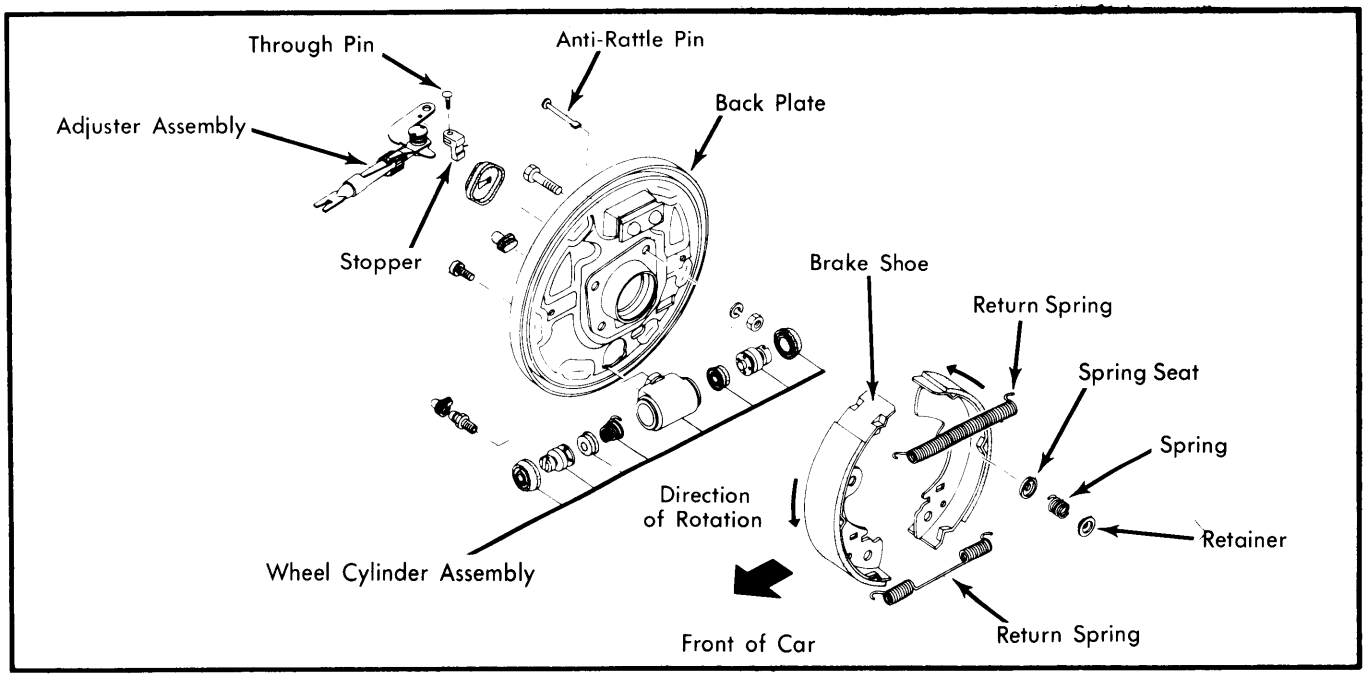

Fig. 2 Exploded View of Rear Brake Assembly

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Installation – To install master cylinder, reverse removal procedures, noting the following: Bleed hydraulic system and check pedal height.

POWER BRAKE UNIT

Removal – Disconnect power unit push rod from brake pedal by removing clevis pin. Disconnect hydraulic lines from master cylinder and vacuum line from power unit, remove master cylinder attaching nuts, and remove master cylinder. Remove nuts attaching power unit to firewall, and remove power unit from engine compartment.

Installation – Reverse removal procedure, adjust brake pedal height, and bleed hydraulic system.

OVERHAUL

FRONT DISC BRAKE CALIPER

Disassembly – **1)** Remove brake fluid from caliper cylinder body. Remove brake pads as previously outlined. Remove gripper pin mounting nuts. *See Fig. 1.*

2) Separate yoke from cylinder body. Take yoke holder out of piston. Remove retainer ring and dust seal from each piston.

3) Force pistons from cylinder using air pressure. Remove piston seals from grooves in cylinder. Only remove gripper if necessary.

Inspection – Check cylinder bore for damage (cracks, wear, etc.) and replace as necessary. Minor emery cloth work is acceptable. Check piston condition. Emery cloth polishing is not to be done on piston because sliding surface is plated.

Reassembly – **1)** Fit new piston seals into place. Lightly coat pistons and cylinder with brake fluid. Insert pistons, one at a time, into cylinder body. Make sure outer piston yoke groove aligns with cylinder yoke groove.

2) Fit dust seals into position and secure with retainer rings. Install yoke holder to inner piston *(See Fig. 1)*. Place gripper on yoke and drive in gripper pin. Install yoke to yoke holder while supporting outer piston, then press yoke into holder with a force not to exceed 60 lbs. (27 kg).

WHEEL CYLINDER

Disassembly – Pull back dust covers. Push inward on one side until opposite side piston is forced out. Slide out cup and spring. Push through opposite direction and force out remaining cup and piston.

NOTE – *There are 2 types of wheel cylinders: Nabco and Tokico. Components are not interchangeable.*

Reassembly – Install spring. Fit cups and pistons with flat surfaces facing each other. Slide dust covers over wheel cylinder housing until they engage retainer groove.

MASTER CYLINDER

NOTE – *Master cylinders are made by 2 different manufactures: Nabco and Tokico. Parts are not interchangeable.*

Disassembly – **1)** Drain fluid out of reservoirs. Using a screwdriver force out stopper rings. Remove stop screw from cylinder body. Pull out primary piston assembly and spring.**2)** Slide secondary piston assembly and spring by stop screw hole and out of housing. Pistons can be further disassembled at this time. Also, inspect return springs for wear.

3) Remove plugs from bottom of cylinder housing to gain access to check valves. Replace check valves or springs found bad.

Inspection – Wash all components in clean brake fluid. Check piston-to-cylinder fit. There should be less than .006" (.15 mm) clearance between piston and cylinder bore.

Reassembly – Reverse disassembly procedure and note: Make sure proper kit is being used to replace worn parts. Bleed master cylinder and brake system.

POWER BRAKE UNIT

Disassembly – **1)** Place power unit in a soft jaw vise with operating rod pointing up. Scribe alignment marks on front and rear shells to assure reassembly in original position. Remove operating rod clevis, lock nut and dust boot.

2) Place Master-Vac wrench (ST08080000) over rear shell mounting studs. Press down on wrench while rotating counterclockwise and separate rear shell from front shell, then remove diaphragm plate assembly, diaphragm spring and push rod assembly. Pry off retainer and remove bearing and valve body seal from rear shell.

3) Remove rubber diaphragm from diaphragm plate assembly, then pry off air silencer retainer and remove silencer and filter. Rotate plate assembly until valve plunger key slot is down, then press in on plunger and shake out stop key. Remove reaction disc from plate assembly. Detach flange from front shell and remove plate and seal assembly.

Cleaning & Inspection – Clean all parts in denatured alcohol and blow dry with compressed air. Inspect front and rear shells for wear or damage. If slight rust is found on inside surface of shell, polish clean with fine emery cloth. Inspect all parts for cracks, nicks, distortion or other damage and replace as necessary.

Reassembly – Reverse disassembly procedure and note the following: Apply a thin coat of silicone grease to parts before reassembly. When assembling front shell to rear shell, ensure marks made during disassembly are aligned. After reassembly, measure distance from master cylinder mounting surface of power unit to end of power unit push rod; distance should be .38-.39" (9.8-10.0 mm). If distance is not to specifications, correct by adjusting tip of push rod.

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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)
510	9.625 (245)	.0047① (.12)	.0028 (.07)	.394 (10.0)	.331 (8.4)	②

① — Maximum.

② — Less than minimum refinish thickness.

BRAKE DRUM SPECIFICATIONS

Application	Drum Diameter In. (mm)	Original Diameter In. (mm)	Maximum Refinish Diameter In. (mm)	Discard Diameter In. (mm)
510	9.00 (228.6)	9.00 (228.6)	9.055 (230)	①

① — More than maximum refinish diameter.

BRAKE SYSTEM SPECIFICATIONS

Application	Drum Diam. In. (mm)	Wheel Cylinder Diameter		Master Cylinder
		Front In. (mm)	Rear In. (mm)	Diameter In. (mm)
510	9.00 (228.6)	①2.012 (51.1)	.811 (20.6)	.811 (20.6)

① — Caliper cylinder diameter.