

DATSUN 210, 310, 510, 810 & PICKUPS

DESCRIPTION

Brake system is hydraulically operated using tandem master cylinder and vacuum power unit. All models except 810 are equipped with single cylinder, dual piston, fixed caliper, sliding yoke type front disc brakes. 810 models are equipped with single piston sliding caliper disc brakes. Rear brake systems are duo-servo drum on pickups and leading/trailing drum on all other models. All models are equipped with combination valves to prevent premature rear wheel lock-up. The combination valve on pickups is mounted at a 10 degree incline on frame to change braking power of rear wheels in response to changes in load and brake fluid pressures. Parking brake systems are cable operated at rear wheels.

NOTE — Some 810 models may be equipped with optional rear disc brakes. See article on Datsun 200SX, 280ZX & 810 4-Wheel Disc Brakes in this section for coverage of front and rear disc brakes.

ADJUSTMENT

DRUM BRAKES

Pickups — Raise and support vehicle. Release parking brake and remove dust boot from backing plate. Lightly tap adjuster housing and move it forward. Rotate adjuster down with a screwdriver until drum locks. Back off adjuster 12 notches for correct shoe-to-drum clearance. Rotate brake drum by hand and ensure no excessive drag is present. Readjust clearance if necessary. Reinstall rubber boot and lower vehicle.

All Other Models — Drum brakes are self-adjusting and no adjustment in service is required.

PEDAL HEIGHT & FREE PLAY

Adjust pedal height (measured from pedal pad to floor) to specification shown in table by moving stop light switch. Loosen operating rod lock nut and turn operating rod to attain proper height, tighten lock nut and adjust stop light switch. Pedal free play should be .04-.20" (1-5 mm). If specification is exceeded, adjust push rod length.

Pedal Height Specifications

Application	Pedal Height In. (mm)
210	5.6-5.9 (143-149)
310	7.1-7.3 (180-186)
510	6.1-6.3 (156-160)
Pickup	6.6-6.9 (168-174)

STOP LIGHT SWITCH

Stop light switch is located under dash panel at brake pedal. Adjust travel during pedal height adjustment. After obtaining correct pedal height, position stop light switch until it just contacts brake pedal arm. Tighten lock nut.

PARKING BRAKE

Pickup — Adjust parking brake by applying parking brake with 44 lbs. (20 kg) force to obtain lever stroke of 6-10

notches. Adjust equalizer link with adjusting nut until rear wheels are locked. Release parking brake. Ensure rear wheels turn freely. After adjustment, parking brake should operate smoothly without noise or drag.

All Other Models — Adjust parking brake by rotating turnbuckle. Rear wheels should lock when lever is pulled 7-8 notches with a force of 44 lbs. (20 kg). Release parking brake. Ensure rear wheels turn freely. After adjustment, ensure cables are slack and all parts are in original positions.

BRAKE WARNING LIGHT

Light indicates parking brake is engaged. To adjust light operation, bend switch plate until light comes on when brake lever is pulled 1 notch and goes out when lever is released (ignition on). On all models except pickups, light also indicates low fluid level when parking brake is released. To check warning light operation, release parking brake and raise master cylinder reservoir cap. Warning light should glow; if not, check switch and wire connector.

REMOVAL & INSTALLATION

FRONT DISC BRAKE PADS

Removal — Raise and support vehicle; remove tire and wheel. Remove retaining clip and then remove pad pins while holding anti-squeal springs. Remove disc brake pads, using suitable pliers if necessary. Remove pad spring (210 and 310) and shims (310) with brake pads.

CAUTION — DO NOT force piston groove inside piston seal. Piston seal could be damaged and caliper will have to be disassembled.

Installation — 1) Clean and apply P.B.C. grease or equivalent to cylinder body yoke guide groove, yoke sliding contact points and piston end surface. Loosen bleeder screw and push outer piston into cylinder until piston end surface coincides with boot retaining ring end surface. Tighten bleeder screw and install inner brake pad.

NOTE — Make sure arrow mark on pad shims of 310 are installed in forward rotating direction.

2) Push inner piston into cylinder by pulling on yoke, then install outer pad. Install anti-squeal springs, coil springs (210 and 310), retaining pins and clip. Depress brake pedal several times to seat pads, and bleed hydraulic system if necessary.

FRONT DISC BRAKE CALIPER

Removal — Raise and support vehicle; remove tire and wheel. Disconnect hydraulic line from caliper and plug all openings. On 310 models, remove strut assembly and knuckle arm mounting bolt. On all models, remove caliper mounting bolts and remove caliper.

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

FRONT DISC BRAKE ROTOR

Removal (4WD Pickup) — 1) Raise and support vehicle. Remove tire and wheel. Remove caliper as previously

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described and hang from frame with wire. DO NOT disconnect hydraulic line. Set locking hub to "Lock" position and remove cover assembly bolts and cover.

2) Remove snap ring and remove clutch assembly by turning clockwise. Ensure lock pin is retained without damage. Remove drive shaft. Remove knuckle arm-to-knuckle bolt. Loosen but do not remove upper and lower ball joint nuts. Using ball joint tool (ST29020001), separate ball joints from spindle. Raise lower link with a jack and remove ball joint nuts. Remove knuckle assembly.

3) Straighten wheel lock washer and remove lock washer. Using lock nut remover (KV40102500), remove lock nut, lock washer and bearing washer. Push bearing support out of wheel hub. Using suitable puller, remove knuckle from hub. Remove hub-to-rotor bolts and remove rotor.

Installation — **1)** Install hub-to-rotor bolts and tighten. Press knuckle onto hub, then install bearing support, bearing washer, lock washer and lock nut. Rotate hub several times to seat bearings and check bearing preload. Bend lock washer lip up into a lock nut groove.

2) Install spindle assembly and tighten suspension components. After installing drive shaft, check that axle shaft end play is .004-.012" (.1-.3 mm). Adjust axle shaft end play with proper thickness of snap ring. Mount caliper and tighten; bleed hydraulic system if necessary.

Removal (310) — With caliper removed, remove cotter pin. Remove hub nut from drive shaft end while holding hub with suitable tool. Using a puller, remove hub and rotor assembly. Remove hub-to-rotor bolts. With rotor supported on wooden blocks, remove hub from rotor with suitable press and drift.

Installation — To install, reverse removal procedure. Tighten hub-to-rotor bolts evenly and adjust wheel bearings. See *Wheel Bearing Adjustment* in *SUSPENSION* Section. Bleed hydraulic system.

Removal (All Other Models) — With caliper removed, remove hub dust cap, "O" ring, cotter pin, adjusting cap and lock nut. Remove hub and rotor assembly from spindle without dropping outer bearing and washer. Remove outer bearing and washer and hub-to-rotor bolts. Separate hub and rotor.

NOTE — Avoid damaging dust cap "O" ring while removing hub dust cap.

Installation — To install, reverse removal procedure. Tighten hub-to-rotor bolts evenly and adjust wheel bearings. See *Wheel Bearing Adjustment* in *SUSPENSION* Section. Bleed hydraulic system.

REAR BRAKE SHOES

Removal (Pickups) — **1)** Raise and support vehicle on safety stands; remove tire and wheel. Loosen parking brake and remove brake drum. Remove retainers, anti-rattle springs, spring seats and anti-rattle pins.

2) Remove 2 return springs (lower). Open brake shoe outward, remove return spring (upper) and extension link. Remove brake shoes. Separate secondary shoe from toggle lever by removing pin.

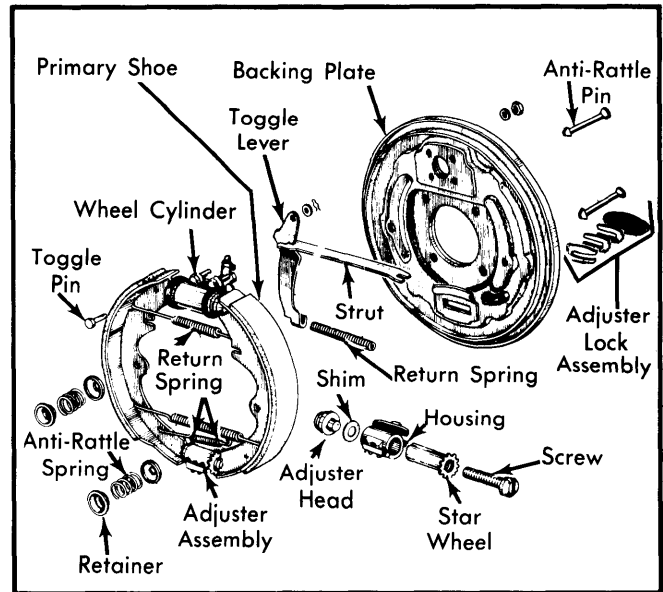


Fig. 1 Exploded View of Pickup Rear Brake Assembly

Installation — To install, reverse removal procedure and note the following: Apply brake grease to moving parts of adjuster assembly and all metal contact surfaces of brake shoes. Adjuster sliding resistance (measured with spring scale) should be 11-26 lbs. (5-12 kg); if not, install new adjuster shim.

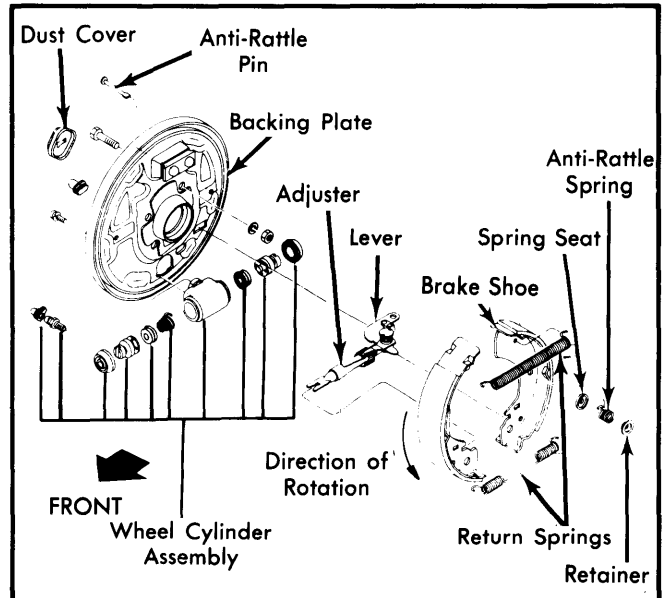


Fig. 2 Exploded View of Rear Brake Assembly (All Models Except Pickup)

Removal (All Other Models) — **1)** Raise and support vehicle. Remove tire and wheel. Apply parking brake and remove stopper pin. Remove stopper from lever. Release parking brake and remove brake drum.

2) Remove parking brake cable from backing plate. Remove retainers, anti-rattle springs, pins and spring seats. Remove return springs and brake shoes. Remove dust cover and toggle lever with adjuster assembly.

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Installation — Apply brake grease to all contact points and mating surfaces; reverse removal procedure to install brake shoes and note the following: Make sure adjuster operates properly, readjust shoe-to-drum clearance and bleed hydraulic system, if necessary.

MASTER CYLINDER

Removal — Disconnect electrical wiring at cylinder reservoir (if equipped). Disconnect and plug hydraulic lines at master cylinder and drain cylinder. Remove cylinder mounting nuts and remove master cylinder.

Installation — To install master cylinder, reverse removal procedure and note the following: Bleed hydraulic system and check pedal height.

POWER BRAKE UNIT

NOTE — Before removal, test check valve. Using a brake booster tester, apply 19.7" (500 mm) of Hg to brake unit side of check valve. If pressure drops more than .39" (10 mm) of Hg for 310, 510 and 810 or .98" (25 mm) of Hg for 210 and Pickup in 15 seconds, replace check valve. Also, if valve does not open when pressure is applied to brake unit side of check valve, replace valve. If check valve is not defective, check brake system and vacuum lines for leaks; replace booster as an assembly.

Removal — With master cylinder removed, disconnect vacuum line from power unit. From inside vehicle, disconnect pedal return spring, push rod from brake pedal, and power unit mounting nuts. Remove power unit from engine compartment.

Installation — Reverse removal procedure and adjust push rod length to .38-.39" (9.75-10.0 mm) by turning tip of push rod. Check pedal height and free play and bleed hydraulic system.

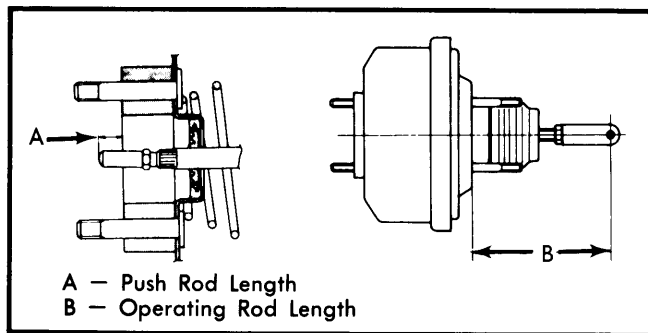


Fig. 3 Location for Measuring Push Rod and Operating Rod Lengths

Operating Rod Lengths

Application	Length In. (mm)
210 & 510	5.3 (135)
310	5.1 (130)
810	5.7 (145)
Pickup	10.8 (275)

Check Valve Removal — Check valve is located in vacuum line between intake manifold and power unit. To remove, disconnect retaining clip, remove hose clamps, separate hoses from valve and remove check valve. To install, reverse removal procedure.

OVERHAUL

FRONT DISC BRAKE CALIPER

NOTE — For overhaul procedures of 810 front disc brakes, see article on Datsun 200SX, 280ZX and 810 4-Wheel Disc Brakes in this Section.

Disassembly (510 & Pickup) — With caliper and pads removed, drain any remaining fluid from cylinder. Remove gripper pin attaching bolts. Separate yoke and cylinder body. Remove retaining rings and dust seals from piston. Push both pistons out in one direction on pickup. On 510, push pistons out by feeding compressed air into cylinder inlet gradually. Remove piston seals. Remove gripper, if necessary.

Cleaning & Inspection — Clean all parts with brake fluid and check all components for wear or damage. If minor corrosion can not be removed from cylinder bore with emery cloth, cylinder must be replaced. All seals must be replaced during overhaul.

NOTE — Piston surfaces are plated and must be replaced if corroded or worn. DO NOT polish with emery cloth.

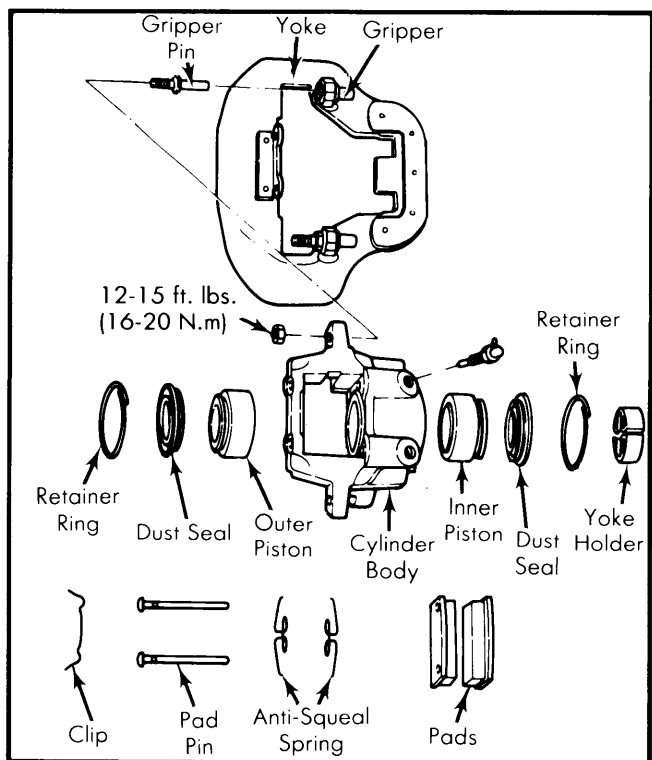


Fig. 4 Exploded View of Front Disc Brake Caliper (510 Shown, Pickup Similar)

Reassembly — 1) Install piston seals without damaging seals. Coat cylinder bore and pistons with brake fluid. Push outer piston into cylinder until piston end surface coincides with boot retaining ring end surface. DO NOT force piston groove inside piston seal. Push inner piston into cylinder bore by holding cylinder body.

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2) Apply brake grease to sealing surface of dust seal and install dust seal; clamping securely with retaining ring. Install yoke holder to inner piston. Install gripper to yoke. Apply 1% soap solution to inner gripper wall and drive gripper pin into position. Install yoke to yoke holder by supporting outer piston end and pressing yoke into yoke holder with 44-66 lb. (20-30 kg) force. No clearance should be present between piston and yoke.

Disassembly (210 & 310) — With caliper and pads removed, drain any fluid from cylinder. Tap the yoke lightly with a hammer to separate cylinder from yoke. Remove bias ring from inner piston, then remove retaining rings and boots from pistons. Push both pistons out by applying compressed air gradually. Remove piston seals. Remove yoke spring from yoke.

Cleaning & Inspection — Clean all parts with brake fluid and check all components for wear or damage. If minor corrosion cannot be removed from cylinder bore with emery cloth, cylinder must be replaced. Piston seals, dust covers and bias ring must be replaced during overhaul.

NOTE — Piston surfaces are plated and must be replaced if corroded or worn. DO NOT polish with emery cloth.

Reassembly — 1) Apply brake fluid to cylinder bore and install piston seal. Insert bias ring into inner piston with rounded end in bottom of piston bore. Lightly coat piston with brake fluid and insert inner piston until yoke groove of bias ring aligns with cylinder groove. DO NOT force piston groove inside piston seal. Push outer piston into cylinder bore by holding cylinder body.

2) Install dust boots and retaining rings. Install yoke springs on yoke and bias springs to yoke. Apply P.B.C. grease (or equivalent) to yoke sliding surfaces of cylinder. Align bias ring so that it coincides with yoke. With yoke springs lightly inserted in cylinder groove, assemble cylinder body and yoke by tapping lightly.

REAR WHEEL CYLINDER

Disassembly — With rear wheel cylinder removed, remove dust covers and remove components.

Cleaning & Inspection — Clean all parts in brake fluid and check cylinder bore and pistons for excessive wear or damage. If piston-to-cylinder clearance is greater than .006" (.15 mm), replace necessary parts. Replace any torn or damaged rubber parts.

NOTE — Wheel cylinders are produced by two companies and parts are not interchangeable. Ensure repair kit matches wheel cylinder.

Reassembly — Apply brake fluid to cylinder bore, pistons and piston cups. Reverse disassembly procedure and install parts.

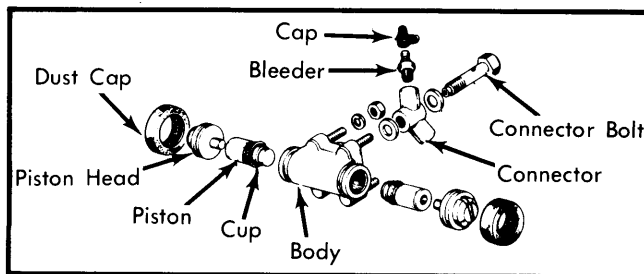


Fig. 6 Exploded View of Typical Wheel Cylinder

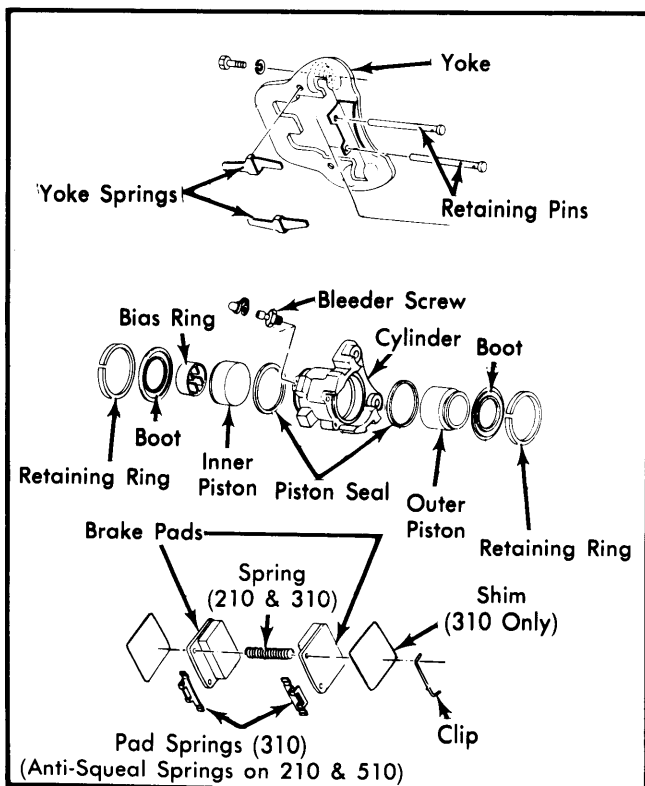


Fig. 5 Exploded View of Front Disc Brake Caliper (210 & 310 Models)

MASTER CYLINDER

NOTE — Do not remove reservoir tanks. If tanks are removed for any reason, discard and install new tanks.

Disassembly — Remove master cylinder reservoir caps and filters and drain brake fluid. Using a screwdriver, pry off stopper ring. Remove stopper screw and pull out primary piston assembly, spring and secondary piston assembly. Remove plugs and pull out front and rear check valves.

Cleaning & Inspection — Clean all parts in brake fluid and check components for excessive wear or damage. If piston-to-cylinder clearance is greater than .006" (.15 mm), replace necessary part. Caps, gaskets and valves must be replaced during overhaul.

NOTE — Master cylinders are produced by two companies and parts are not interchangeable. Ensure repair kit matches master cylinder.

Reassembly — Reverse disassembly procedure and note the following: Coat all parts with brake fluid (rubber parts with brake grease) when assembling.

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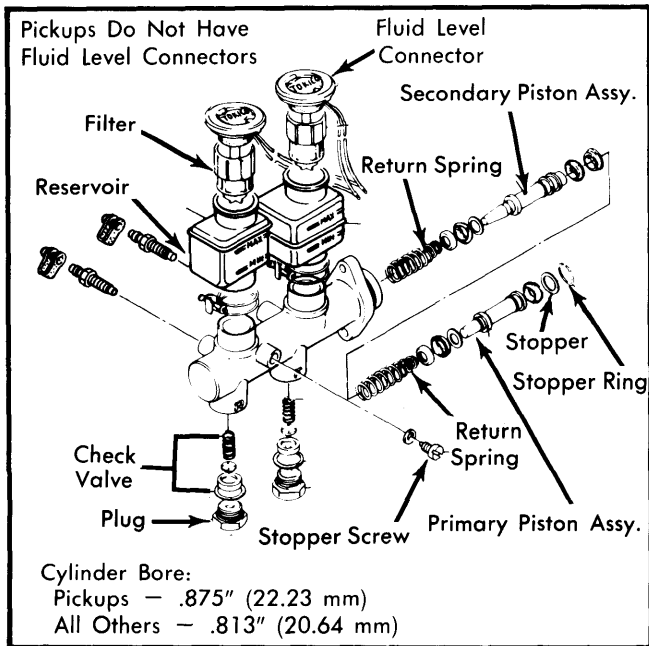


Fig. 7 Exploded View of Tokico Dual Reservoir Master Cylinder. Some Models Use Single Reservoir Cylinder. Nabco Cylinders Similar But Have Different Piston Configuration.

POWER BRAKE UNIT

NOTE — Manufacturer does not recommend disassembly of this unit. If a problem is determined to be in booster unit, complete assembly must be replaced. Do not disassemble booster unit.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N m)
Hub-to-Rotor Bolts	
310	18-25 (25-34)
810	36-51 (49-69)
All Other Models	53-72 (72-98)
Caliper Mounting Bolts	
310	40-47 (54-64)
810	12-15 (16-20)
All Other Models	53-72 (72-98)
4WD Only	
Locking Hub	18-25 (25-34)
Drive Shaft-to-Carrier	20-27 (27-37)
Spindle Nut	87-108 (118-147)

DISC BRAKE SPECIFICATIONS

Application	Caliper Bore Diameter In. (mm)	Lateral Runout In. (mm)	Parallelism In. (mm)	Original Thickness In. (mm)	Minimum Refinish Thickness In. (mm)	Discard Thickness In. (mm)
210	2.012 (51.1)	.005 (.12)	.001 (.03)	.394 (10)	.....	.331 (8.4)
310	1.894 (48.1)	.005 (.12)	.001 (.03)	.378 (9.6)	.....	.339 (8.6)
510	2.012 (51.1)	.005 (.12)	.003 (.07)	.394 (10)	.....	.331 (8.4)
Pickups	2.125 (53.98)	.006 (.15)	.003 (.07)	.492 (12.5)	.....	.413 (10.5)

DRUM BRAKE SPECIFICATIONS

Application	Wheel Cyl. Bore Diameter In. (mm)	Drum Diameter In. (mm)	Original Diameter In. (mm)	Maximum Refinish Diameter In. (mm)	Discard Diameter In. (mm)
210	.813 (20.64)	8.00 (203)	8.00 (203)	.....	8.05 (204.5)
310	.687 (17.46)	8.00 (203)	8.00 (203)	.....	8.05 (204.5)
510 & 810 [Ⓛ]	.813 (20.64)	9.00 (228.6)	9.00 (228.6)	.....	9.06 (230)
Pickups	.625 (15.88)	10.00 (254)	10.00 (254)	.....	10.06 (255.5)

[Ⓛ]— 810 wheel cylinder .875" (22.23 mm) diameter.