

TOYOTA

Celica ST
Corolla
Corona
Corona MK II
Hi-Lux
Land Cruiser

Brake Pedal Height

Application	Height
Celica ST	6 ³ / ₈
Corolla	6 ⁵ / ₈
Corona	6 ¹ / ₂
Corona Mk II	6 ¹ / ₄
Hi-Lux	6 ¹ / ₂

DESCRIPTION

Two brake systems are used; one system utilizes drum brakes on all four wheels, the second system utilizes disc brakes on front wheels and drum brakes on rear wheels. Dual piston master cylinders are used with both systems and a pressure control valve is used on systems incorporating disc brakes. Either system may be equipped with a power brake assist unit. Not all units are the same. All Parking brakes are cable actuated, internal expanding shoe type. Land Cruiser parking brake is mounted on rear of the transfer case, all other models use a parking brake incorporated in rear wheel brakes.

Land Cruiser – On models with power brake unit, loosen stop light switch and adjust pedal height with push rod. Readjust stop light switch to make proper contact. On models without power brake unit, loosen push rod and adjust pedal height by turning stop light switch.

BRAKE PEDAL HEIGHT

All Models (Exc. Land Cruiser) – Loosen stop light switch lock nut and turn switch to obtain correct brake pedal height. If correct height cannot be obtained by adjusting switch, loosen push rod lock nut and lengthen or shorten push rod as necessary to obtain correct height.

Brake Pedal Height

Application	W/Power Brakes	W/O Power Brakes
FJ 40 Series	8 ¹ / ₂	7 ³ / ₄
FJ 55 Series	7 ¹ / ₄	6 ³ / ₄

DISC BRAKES

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

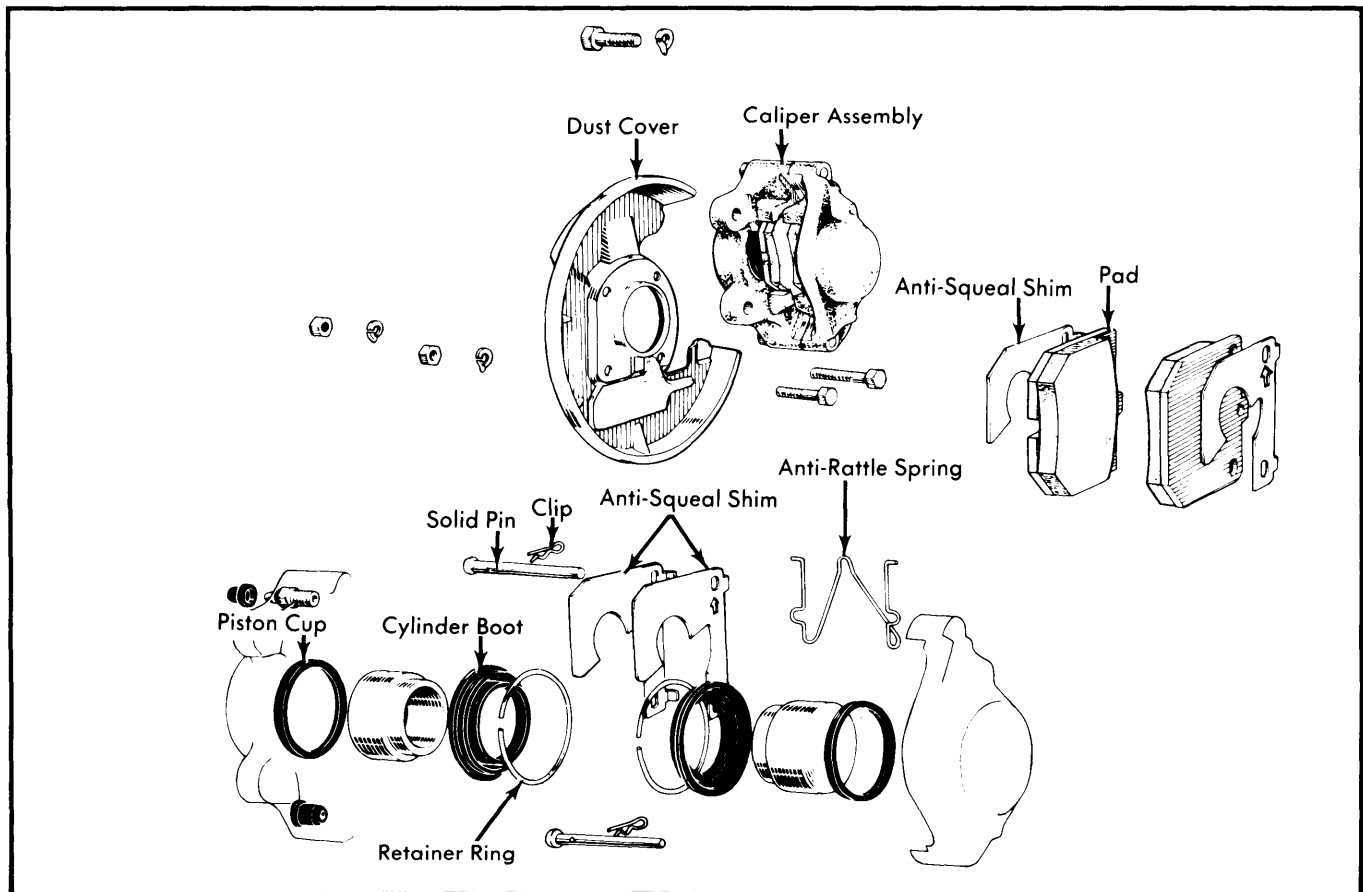


Fig. 1 Exploded View of Girling Type Disc Brake Components

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DRUM BRAKES

Manual Adjusting — One or two adjusting screws may be used on some vehicles. **CAUTION** — *On double adjusting screw type, do not adjust both screws at the same time.* Pump brake pedal several times, and ensure brake cylinder reservoir is full. Raise vehicle and remove adjusting hole plug from backing plate. Using a suitable adjusting tool, turn adjusting screw until shoes make full contact with brake drum, and wheel will not turn. Pump brake pedal, then turn adjuster back until wheel turns with light shoe drag.

Self Adjusting — Adjustment, except at time of overhaul, should not be required. If self adjusters are not functioning properly, hold self adjuster screw and perform procedure described under manual adjusting.

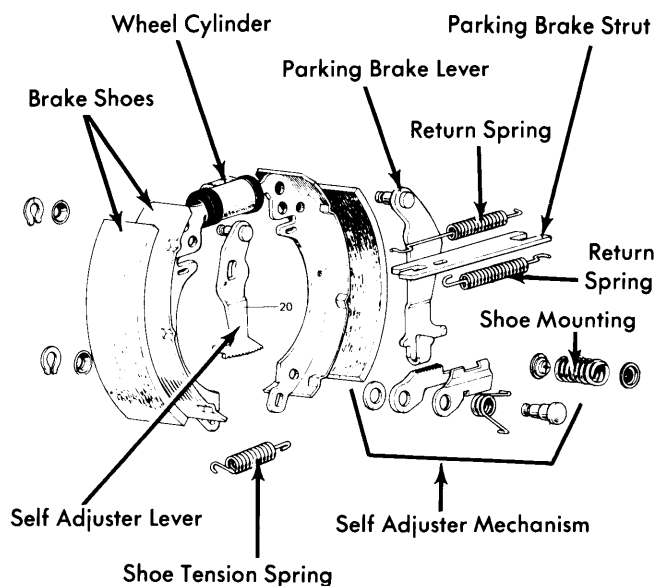


Fig. 2 Typical Self-Adjuster Type Rear Brake Assembly (Corona Mk II Shown)

PARKING BRAKE

Land Cruiser — With brake handle fully released, turn shaft of adjusting cam (on brake backing plate) counterclockwise until shoe seats against drum. Back off adjuster one notch at a time until drum locks when foot brake is applied, and spins freely when released. After adjusting shoes, adjust brake handle for travel of 6-9 notches from released to applied position. Adjust by turning cable adjusting nut or turnbuckle.

All Others (Instrument Panel Mounted) — With brake handle fully released, turn cable adjusting nut at equalizer on frame until cables to rear wheels are slightly slack, and there is no drag on rear wheels. After adjustment, brake handle travel should be about eight notches, and brake warning light should be off. If light remains on, adjust switch position so light is on when brake is applied, and off when handle is released.

All Others (Floor Mounted) — Correct adjustment is obtained when rear wheels are locked, and brake lever travel is 5-8 notches. To adjust, remove cable adjusting cap at rear of

lever, and turn cable adjusting nut until correct lever travel is obtained. Replace and lightly tighten adjusting cap. Check and adjust brake warning light switch so that light is off when brake lever is released.

HYDRAULIC BRAKE BLEEDING

NOTE — *Master cylinder reservoir(s) must be kept full at all times during bleeding.* Starting at wheel cylinder farthest from master cylinder, connect a tube to bleeder screw and put other end of tube in a glass container half full of clean brake fluid. Slowly pump brake pedal several times, then hold pedal in depressed position. Open bleeder screw slightly, and close screw when fluid stops flowing from tube. Repeat procedure until fluid coming from tube shows no sign of air.

REMOVAL & INSTALLATION

DISC BRAKE PADS

Removal, F Type — Raise and support front of vehicle; remove wheel. Pull four spring clips out and remove cylinder guides. Hang disc cylinder assembly out of way. Remove disc pads and inspect for wear.

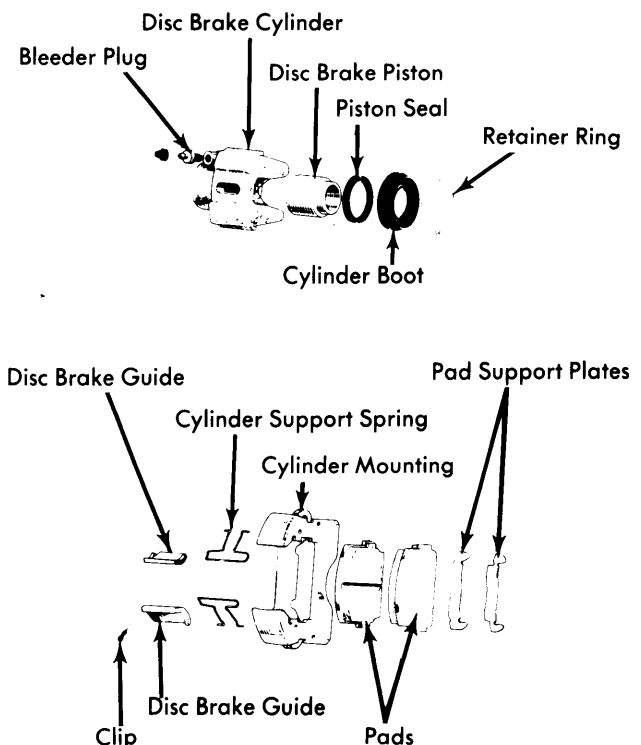


Fig. 3 Expanded View of F Type Disc Brake Components

Installation — Clean piston and cylinder assembly, then seat piston into cylinder bore. If piston won't easily reseed into cylinder bore, crack bleed valve to relieve pressure. Insert cylinder assembly into position. Refit new disc pads, cylinder guides, and spring clips. If hydraulic line has been disconnected, bleed brake system.

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Removal & Installation, PS Type — Raise and support front of vehicle; remove wheel. Take out pad protector, anti-rattle springs, spring pins, and pads. Clean dirt from pin portion of torque plate. After cleaning piston assembly, seat into cylinder bore. Insert pads and install retaining pins, anti-rattle springs, and protector.

Removal, Girling Type — Raise and support front of vehicle; remove wheel. Remove clips, pins, and springs; then take out pads and anti-squeal shims. If vehicle is equipped with Electrical Sensor Panel, separate wire harness from steering knuckle wire harness clamp. Pull out pads and separate connection between pad and wear sensor.

Installation — Install by fitting anti-squeal shim so folded portion will be facing pad and arrow will face in direction of rotation. If ESP equipped, mount wear sensor in inner side pad before installing pad. Install springs, pins, and clips. Refit ESP wiring, ensuring wiring harness is not kinked.

Removal, Corona Mk II — Raise vehicle and support front; remove wheel. Pull out the two spring clips, remove solid pins, and anti-rattle (damper) spring. Take out disc pads and anti-squeal shims.

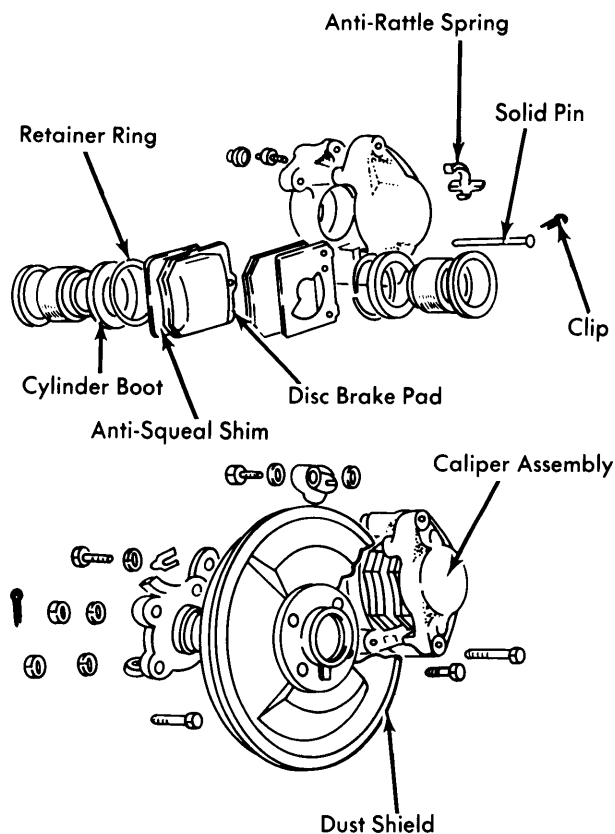


Fig. 4 Corona Mk II Disc Brake Components

Installation — To install, reverse removal procedure and note the following: Position anti-squeal shim so folded part will face pad, and arrow mark in direction of rotation. Lightly coat both sides of anti-squeal shim with lubricant.

DISC BRAKE CALIPER

Removal, F Type — Raise and support front of vehicle; remove wheel. Pull four clips out and remove cylinder guides. Hang disc cylinder assembly out of way. Remove disc pads. Remove two bolts from rear of disc brake cylinder mounting and remove mounting along with cylinder support springs and pad support plates.

Installation — To install F type brake caliper, reverse removal procedure and note the following: It may be necessary to manually seat piston in cylinder bore to ease installation. Ensure cylinder guides and clips are in good condition.

Removal, All Others — Raise and support front of vehicle; remove wheel. Remove disc brake pads as previously outlined. Disconnect hydraulic fluid line from caliper inlet port. Remove caliper mounting bolts and carefully lift off caliper assembly.

Installation — To install, reverse removal procedure and note the following: Ensure caliper mounting bolts are properly torqued. Make sure disc pads are installed according to previously outlined procedure.

DISC BRAKE ROTOR

Removal, All Models — Raise and support vehicle; remove tire. Before removing rotor, measure runout and check against specifications. Proceed by removing hub grease cap, cotter pin, washer, and castle nut; carefully ease outer wheel bearing from hub. Remove caliper assembly as previously outlined. Pull hub and rotor from vehicle as an assembly. If necessary, hub and rotor can be further disassembled after indexing marking their relationship.

Installation — To install hub and rotor assembly, reverse removal procedure and note the following: Ensure wheel bearings are packed with grease and that wheel bearing grease seal is satisfactory. Make sure wheel bearings are properly adjusted. See *Wheel Bearing Adjustment* in *WHEEL ALIGNMENT* Section.

BRAKE DRUM

Removal, Land Cruiser Front — Raise and support vehicle; remove wheel. Loosen brake shoe adjuster to ease drum removal. Work drum back and fourth until it is free enough to slide off front hub assembly.

Installation — To install, reverse removal procedure and readjust brakes.

Removal, All Models Rear — Raise and support rear of vehicle; remove wheel. Remove set screws from brake drum, if equipped. Using hands only, pull drum from vehicle. It may be necessary to first loosen brake shoes if an adjustment hole is provided.

Brakes

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Installation — To install, reverse removal procedure and readjust brake shoes, if necessary.

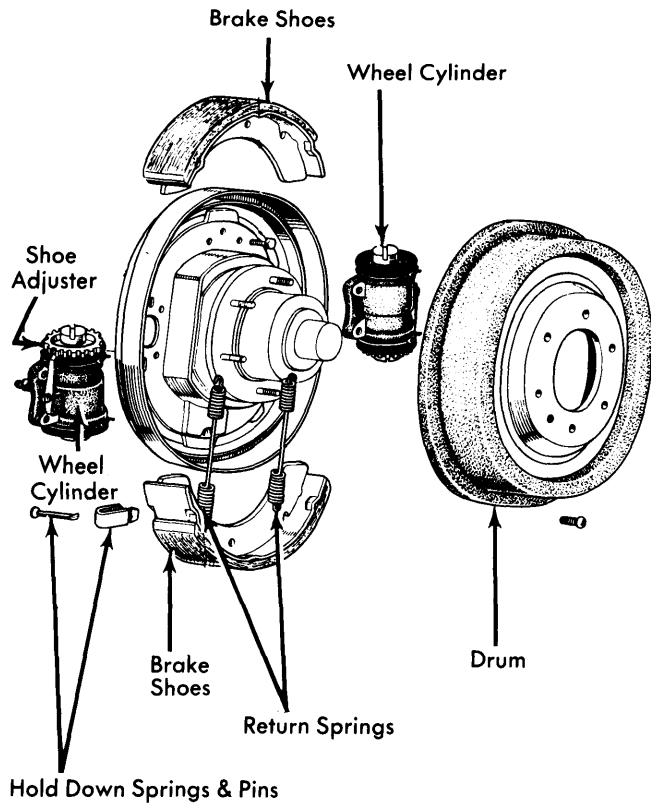


Fig. 5 Exploded View of Land Cruiser Front Brakes

BRAKE SHOES

Removal, Land Cruiser Front — Raise and support vehicle. Remove wheel and drum. Take out tension and return springs,

then disengage hold down pins and spring clips. Remove shoes from backing plate. If necessary, wheel cylinders with brake adjuster mechanisms can now be removed.

Installation — To install, reverse removal procedure, apply lubricant to friction points on backing plate and brake shoes.

Removal, All Models Rear — Raise and support vehicle. Remove wheel and brake drum. Remove parking brake cable from lever, and remove tension springs from shoes. Remove self adjuster mechanism (if equipped). Remove shoe guide plate, shoe hold down pins and springs. Take out parking brake strut. Remove brake shoes from backing plate. Remove parking brake actuating lever, self adjusting lever, and latch from brake shoe.

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

MASTER CYLINDER

Removal, All Models — Disconnect any electrical lead from master cylinder switches. Separate hydraulic outlet lines and plug open ends of line. Remove nuts mounting master cylinder to power unit, if equipped. If vehicle is not power brake equipped, disconnect master cylinder push rod and lift from vehicle.

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

POWER BRAKE UNIT

Removal & Installation — Remove master cylinder assembly from vehicle. Disconnect push rod clevis at brake pedal. Remove power booster attaching hardware, and remove booster assembly from vehicle. To install, reverse removal procedure.

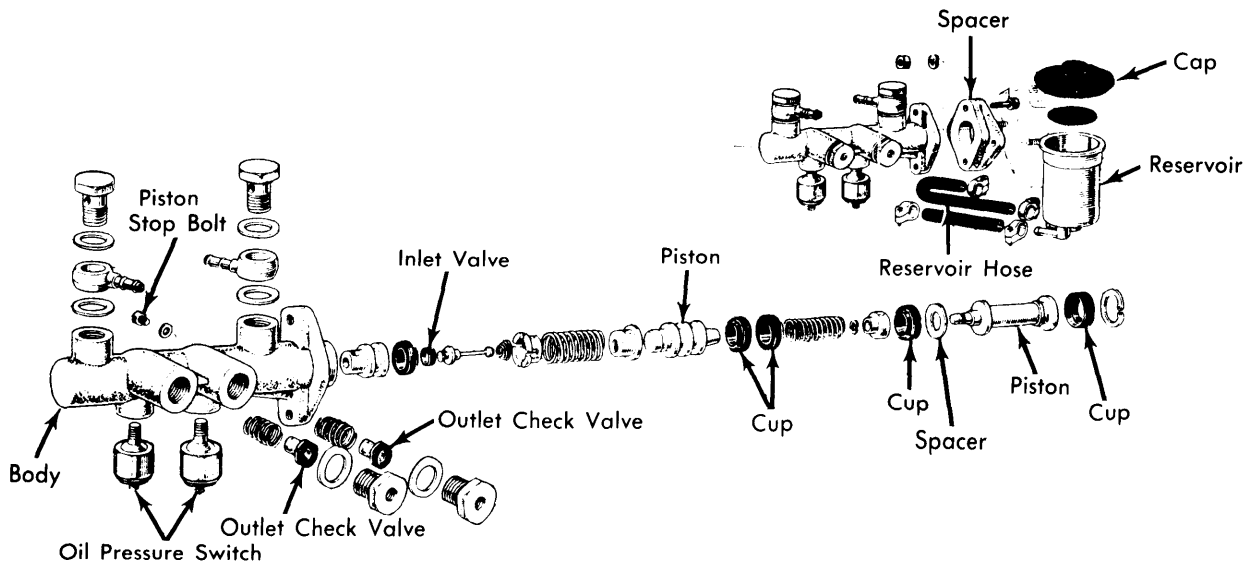


Fig. 6 Exploded View of a Typical Master Cylinder with Detail of Each Component

TOYOTA (Cont.)

OVERHAUL

NOTE — When overhauling caliper, wheel cylinder, or master cylinder assemblies, all rubber components should be replaced. If cylinder bores in any part are pitted, or scored more than light honing will repair, entire assembly should be replaced.

DISC BRAKE CALIPER

Disassembly, F Type — Remove retainer ring and take off cylinder boot. Apply light air pressure to fluid inlet port and force piston from cylinder. Remove seal from cylinder, being careful not to damage cylinder bore.

Inspection — Clean and inspect all components. Replace any parts found defective.

Reassembly — To reassemble, reverse disassembly procedure and note the following: Apply light coat of suitable grease/brake fluid to all components before reassembly. Bleed hydraulic system after installation.

Disassembly, PS Type — Loosen the two bridge bolts (caliper half mounting bolts) and separate cylinder casting from outer body, then pull out torque plate. Remove retainer ring and dust boot. Force light air pressure through fluid inlet port and expel piston. From the caliper remove the following components: Piston seal, bushings, hole plug, retainers, and dust seals.

Inspection — Inspect all parts for wear or damage and replace as necessary. If torque plate pins are excessively worn

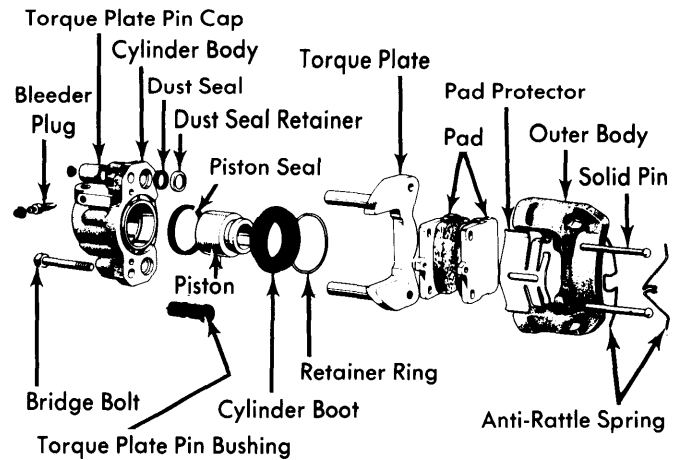


Fig. 7 PS Type Disc Brake Components

or if pin weld parts are abnormally corroded, caliper must be replaced.

Reassembly — Lightly coat all parts in clean brake fluid prior to reassembly. Fit dust seals, retainers, and bushings to cylinder. Ensure pin sliding surfaces and bushing bores are clean and smear with suitable grease from repair kit. Fit piston seal on cylinder and push piston in by hand. Install dust boot and ring. Reassemble torque plate pins in cylinder body. Make sure torque plate is free to slide smoothly. Install bridge bolts and torque to specifications.

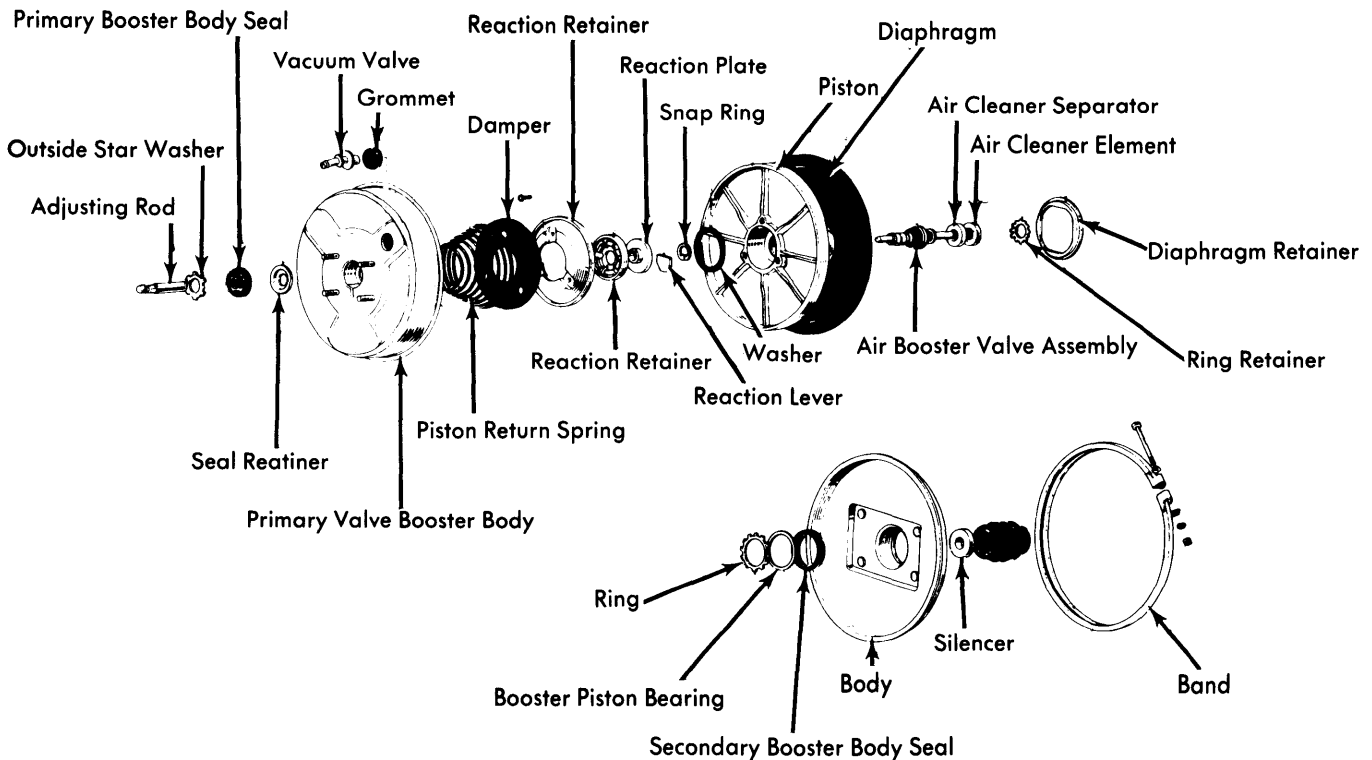


Fig. 8 Exploded View of ASCO Type Brake Booster Unit

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Disassembly, Girling Type — Remove retainer ring from dust boot and pull off dust boot. Insert a small block of wood between pistons and apply light air pressure to inlet port to force pistons from cylinder bores. Remove seals from grooves in cylinder bores. **NOTE** — Do not separate caliper halves.

Inspection — Clean and inspect all components. Replace any parts found defective.

Reassembly — Lightly coat all components with brake fluid, then insert seal into cylinder bore groove. Carefully push pistons into cylinder, install rubber dust boots and retainer rings.

Disassembly, Corona Mk II — Remove spring clips, solid pins, pads and anti-squeal shims. Remove dust boot retainer and pull boot off. Insert a small block of wood into caliper cavity, then apply compressed air to fluid inlet port of caliper. After pistons have been expelled, remove seals from cylinder grooves. Ensure cylinder bores are not damaged when removing seals. **NOTE** — Do not loosen bridge bolts or separate caliper halves.

Inspection — Clean all components and inspect for excessive damage or wear. Replace any components found defective.

Reassembly — To reassemble, reverse disassembly procedure and note the following: Lightly coat surfaces of all components with grease/brake fluid before reassembly. Ensure new "O" ring is used on piston.

MASTER CYLINDER

Disassembly, All Models — Remove pressure switches and clamp cylinder flange in a soft jawed vice. Remove unions and bolts, outlet plugs, valves, and springs. Remove push rod boot. Take off snap ring, then remove push rod and rear piston assembly. Remove stop bolt from side of cylinder and remove front piston. Remove inlet valve seat and inlet valve. Disassemble pistons by removing springs, retainers, and cups.

Reassembly — To reassemble, reverse disassembly procedure using all new rubber parts and lubricating all components with clean brake fluid.

WHEEL CYLINDER

NOTE — Removal of wheel cylinder from backing plate is not necessary, except when replacement of cylinder assembly is required.

Disassembly — Remove adjuster lock spring and adjuster (if equipped). Remove bleeder screw. Remove cylinder boot(s), piston(s), cup(s), spring seat (if equipped), and spring.

Inspection — Clean all parts with solvent, and blow dry with compressed air. Check cylinder bore for out-of-round, corrosion, or scoring.

Reassembly — To reassemble, reverse disassembly procedure, using new rubber parts.

Disassembly, ASCO Type — Remove booster push rod. Remove clamping band and separate primary and secondary booster body halves. Remove boot and booster piston assembly from secondary body half. Remove outside star washer from secondary body and remove bearing and body seal. From primary body, remove seal and retainer. Disassemble booster piston by removing reaction retainers, lever, air valve, air cleaner element and separator. Using suitable remove tool (SST 09736-30020), take out diaphragm rotating it 45°, then remove diaphragm from piston. Remove vacuum check valve and grommet from booster body.

Inspection — Wash all parts in suitable cleaner. Inspect all components for excessive wear or damage and replace those that are found damaged.

Reassembly — To reassemble, reverse disassembly procedure and note the following: When assembling booster body seal to seal retainer, ensure seal retainer side is in the body inner side. When assembling body halves, align index marks.

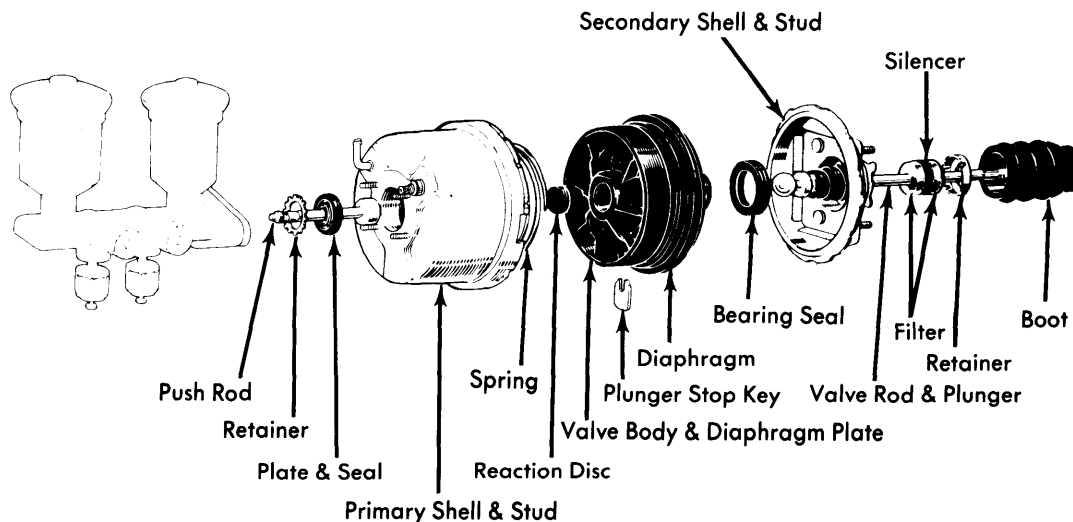


Fig. 9 Exploded View of JKK Type Brake Booster Unit

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Disassembly, JKK Type — Remove push rod clevis, nut, and boot. Index mark primary and secondary shell halves. Separate halves using suitable tool (SST 09738-22012). Remove diaphragm spring and push rod. Take out diaphragm plate and diaphragm spring from secondary shell half. Disengage the diaphragm from plate, then remove silencer. Remove plunger stop key by lining up valve rod and plunger toward key hole with pieces facing downward; then remove valve and plunger rod from diaphragm plate. *NOTE* — *Valve rod and plunger assembly can not be further disassembled.* Remove reaction disc from diaphragm plate. If necessary, remove retainer and seal from primary shell. With a press, force bearing seal from secondary shell.

Inspection — Wash all parts in suitable cleaner. Inspect all components for any damage and replace those found defective. Ensure all rubber pieces are replaced during each overhaul.

Reassembly — To reassemble, reverse disassembly procedure and note the following: Ensure retainer is fully seated in secondary shell half. Properly locate plunger key stop. Coat reaction disc with silicon grease. Make sure diaphragm edge has oil coating before final tightening.

Disassembly, Aisan Type — 1) Remove booster push rod, clips mounting booster body connector, and push rod clevis. Using suitable tool (SST 09738-20010) and a press, apply pressure to body; then turn booster body connector until slots (and body halves) are disengaged.

2) Remove the following from secondary shell half: Boot, booster piston assembly, and bearing. From primary shell side, remove outside star washer retainer ring and body seal.

3) Disassemble following parts from front of booster piston: Reaction retainer, plate, lever, and snap ring. From rear of booster piston take off: Mounting ring, air cleaner elements, separators and booster air valves. Remove diaphragm retainer using suitable tool (SST 09736-30020) and rotating retainer 45°. Take off diaphragm from piston.

Inspection — Wash all parts in suitable cleaner. Inspect all components for any damage and replace those found defective.

Reassembly — To reassemble, reverse disassembly procedure and note the following: Ensure that seal retainer is assembled to inner primary shell. Make sure when assembly is installed on dash panel, sunken part of primary body will be positioned downward.

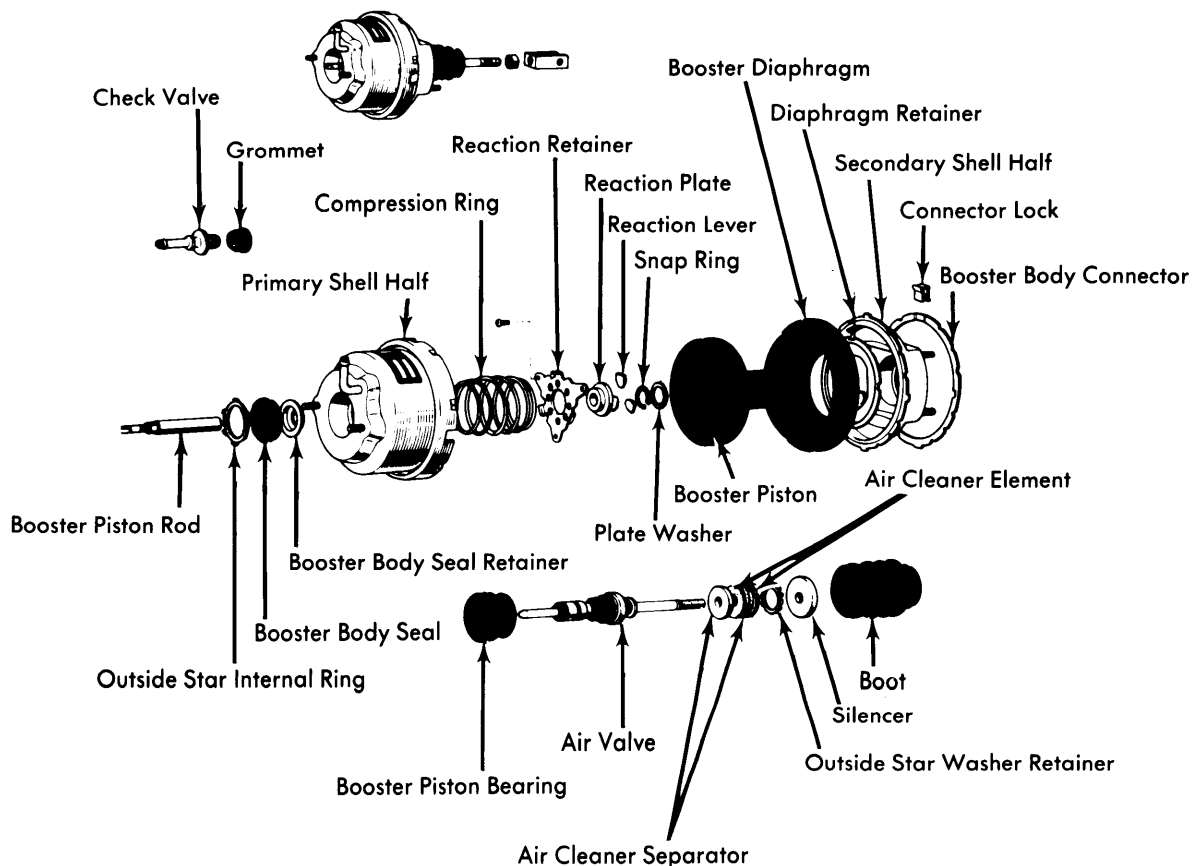


Fig. 10 Exploded View of Aisan Type Brake Booster Assembly

Brakes

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NOTE — Overhaul procedures for Land Cruiser power brake booster unit were not available at time of publication. Refer to

the following exploded view illustration for disassembly and reassembly procedures.

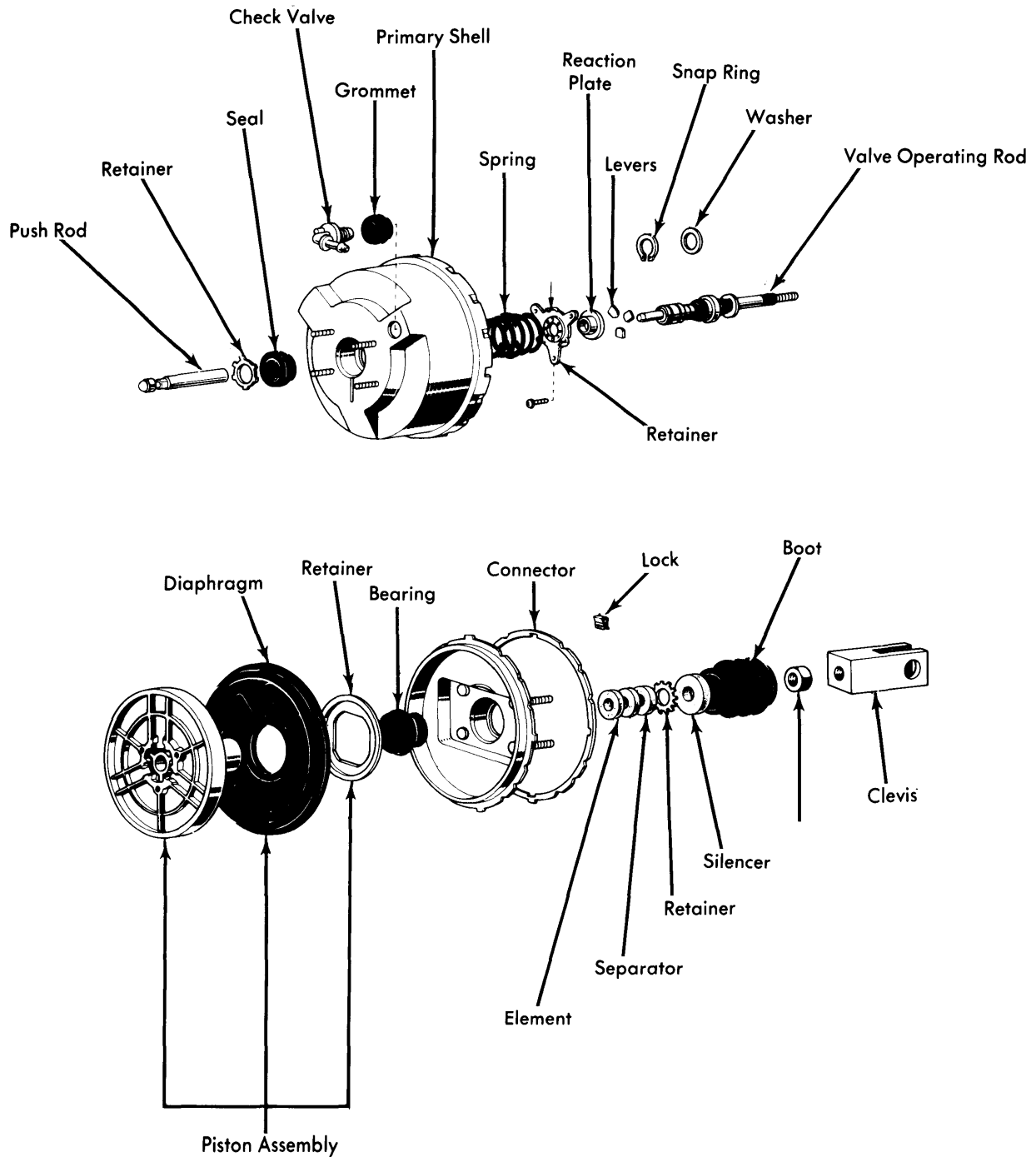


Fig. 11 Exploded View of Land Cruiser Power Brake Booster Assembly

Brakes

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DISC BRAKE ROTOR SPECIFICATIONS						
Application	Disc Diameter	Lateral Runout	Parallelism	Original Thickness	Minimum Refinish Thickness	Discard Thickness
Celica F Type006	.....	.394	.354	.....
	(.15)	.....	(10)	(9.0)	.....
Corolla PS Type006	.....	.394	.354	.....
	(.15)	.....	(10)	(9.0)	.....
F Type006	.....	.394	.354	.....
	(.15)	.....	(10)	(9.0)	.....
Mk II006	.....	.492	.453	.....
	(.15)	.....	(12.5)	(11.5)	.....
Corona F Type006	.....	.492	.453	.....
	(.15)	.....	(12.5)	(11.5)	.....
Girling Type006	.....	.492	.453	.....
	(.15)	.....	(12.5)	(11.5)	.....

BRAKE DRUM SPECIFICATIONS				
Application	Drum Diameter	Original Diameter	Maximum Refinish Diameter	Discard Diameter
Corolla, Celica Corona & Mk II	9.0	9.0	.....	9.079
	(228.6)	228.6	.....	(230.6)
Hi-Lux	10.0	10.0	.....	10.078
	(254)	(254)	.....	(256)
Land Cruiser Front	.....	.....	.....	11.50
	.....	.....	.....	(292)
Rear	.....	.....	.....	11.50
	.....	.....	.....	(292)

TIGHTENING SPECIFICATIONS	
Application	Ft. Lbs. (mkg)
Caliper Mounting Bolts	
F Type	
Corolla	39-54 (5.4-7.5)
Corona	50-65 (6.9-9.0)
PS Type.....	29-40 (4.0-5.5)
Girling Type.....	67-87 (9.3-12.0)
Parking Brake Drum Nut	
Land Cruiser	80-101 (11-14)
Caliper Bridge Bolt	
PS Type.....	58-69 (8.0-9.5)
Rotor-to-Hub	
Mk II	29-40 (4.0-5.5)