DATSUN 280Z

280Z

DESCRIPTION

Brake system is hydraulically operated, using a tandem master cylinder and a Master-Vac power brake unit. Front brakes are Girling-Sumitomo dual piston fixed caliper type. Rear brakes are leading-trailing, shoe/drum type. Brake system is equipped with a combination valve to prevent premature locking of rear wheels. A brake warning light works off the combination valve and indicates when a pressure drop occurs in either front or rear circuit. Parking brake is mechanically actuated through cables and levers. Parking brake locks rear drums.

ADJUSTMENT

BRAKE PEDAL

Loosen lock nut, turn push rod clevis, and adjust push rod length so that height of pedal, measured from pedal pad to floor, is 8.11" (206 mm). **NOTE** – *Make sure pedal stopper (stop light switch) does not contact pedal arm at this time.* With push rod adjusted, adjust stop light switch until pedal height is reduced to 7.99" (203 mm).

FRONT DISC BRAKE PADS

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

REAR DRUM BRAKE SHOES

Rear drum brakes are self-adjusting (actuated by parking brake), therefore, no adjustment in service is required.

PARKING BRAKE

Adjust shoe-to-drum clearance on rear brakes. Loosen adjusting rod lock nut and rotate adjuster nut to reduce linkage play. Actuate parking brake lever several times to stabilize cable. Make sure cables are free to operate.

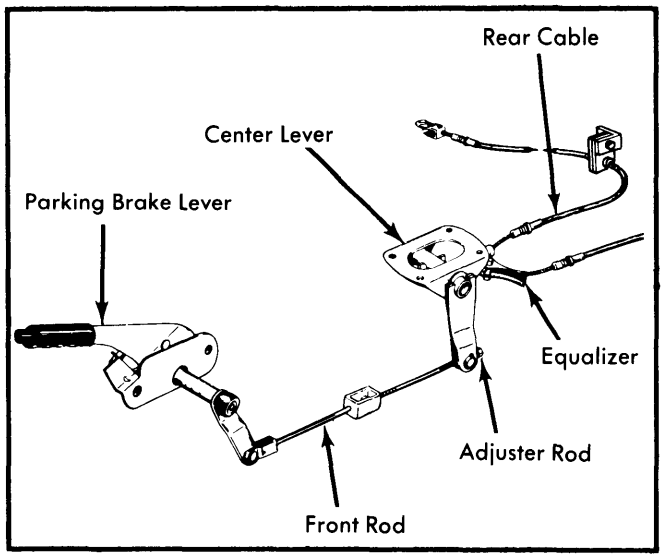

Fig. 1 280Z Parking Brake Adjustment Point Adjuster Rod

COMBINATION VALVE

Function Test – Accelerate engine to 30 mph and quickly apply brakes. If rear wheels lock before front wheels, malfunction of combination valve is indicated.

Warning Light Operation and Reset – Instrument panel light will come on when a pressure difference of between 71-244 psi is evident between front and rear hydraulic systems. Combination valve shuttle moves to side of low pressure and grounds electrical circuit, causing waring light to come on. When hydraulic problem has been corrected and brakes have been bled, system should have normal psi. Shuttle will then return to position and light will go out.

REMOVAL & INSTALLATION

FRONT DISC BRAKE PADS

Removal – Remove tire and wheel. Remove clip, retaining pin, damper spring and remove pad with shim.

Installation – Depress piston into cylinder so new pad may be inserted. Install pad, shim, damper spring and retaining pin securing with clip. Depress pedal several times to position new pads.

FRONT DISC BRAKE CALIPER

Removal - With disc pads removed, disconnect hydraulic line from caliper and plug openings. Remove caliper mounting bolts and separate caliper from steering knuckle and rotor.

Installation – Reverse removal procedure, tighten caliper mounting bolts securely, and bleed hydraulic system.

FRONT DISC BRAKE ROTOR

Removal – With caliper assembly removed, remove wheel hub dust cap, cotter pin, and adjusting nut. Remove wheel hub and rotor assembly, wheel bearing, and washer from spindle as an assembly. Remove bolts attaching rotor to wheel hub, and detach rotor.

Installation – Reverse removal procedure and adjust front wheel bearings. *See Wheel Bearing Adjustment in WHEEL ALIGNMENT Section.*

REAR BRAKE SHOES

Removal – Remove tire. Pull off brake drum. If drum is hard to remove, apply parking brake and drive out clevis pin. Release brake and pull on drum. Once drum is removed, disconnect all springs, clips and release brake shoes. Wheel cylinders are now accessible.

Installation – Apply brake grease to adjuster and all pivot points on backing plate. Refit brake shoes, springs, and clips. Refit drum. Connect parking brake and continually apply until click sound from adjuster is gone.

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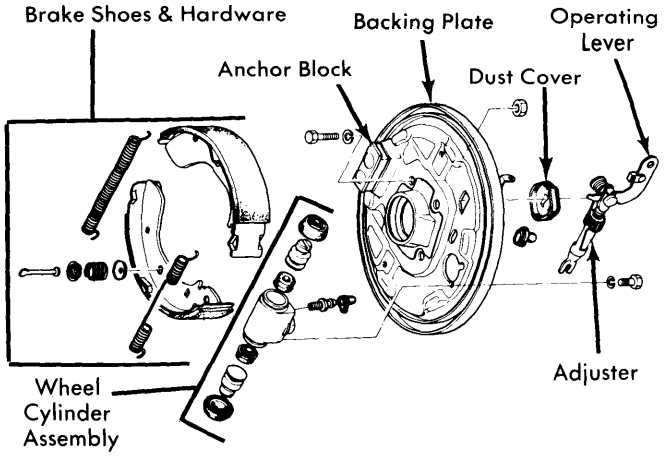

Fig. 2 Exploded View of Rear Brake Assembly

REAR WHEEL CYLINDER

Removal – Remove rear brake shoes. Disconnect and plug hydraulic line. Separate parking brake linkage. Remove mounting bolt and slide off cylinder.

Installation – Reverse removal procedure and note the following: Apply brake grease (or equivalent) to wheel cylinder, backing plate, and adjusting plate sliding surfaces; also lubricate wheel cylinder lever fulcrum and ensure wheel cylinder assembly operates freely.

MASTER CYLINDER

Removal – Disconnect hydraulic lines from master cylinder, remove nuts attaching cylinder to power unit, and separate master cylinder from power brake unit.

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

POWER BRAKE UNIT

Removal – Disconnect power unit push rod from brake pedal by removing clevis pin. Disconnect hydraulic lines from master cylinder, vacuum line from power unit, remove master cylinder mounting 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.

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

COMBINATION VALVE

Removal – Disconnect all hydraulic lines from combination valve. Plug openings. Remove mounting bolts and take off valve.

NOTE – *280Z combination valve looks similar to some used on other models. DO NOT mix-up or interchange valves.*

Installation – To install, reverse removal procedure and note: "F" mark indicates where front brake circuit is attached. Arrows indicate where to attach rear brake circuit. Note that there are arrows to show where inlet and outlet lines attach.

OVERHAUL

FRONT DISC BRAKE CALIPER

Disassembly – Clean exterior of brake caliper. Remove retaining ring and dust seal. Using a small block of wood, (or equivalent), hold one piston and blow air into brake line inlet to force piston from bore. Remove piston seal from cylinder bore. Remove other piston in similar manner.

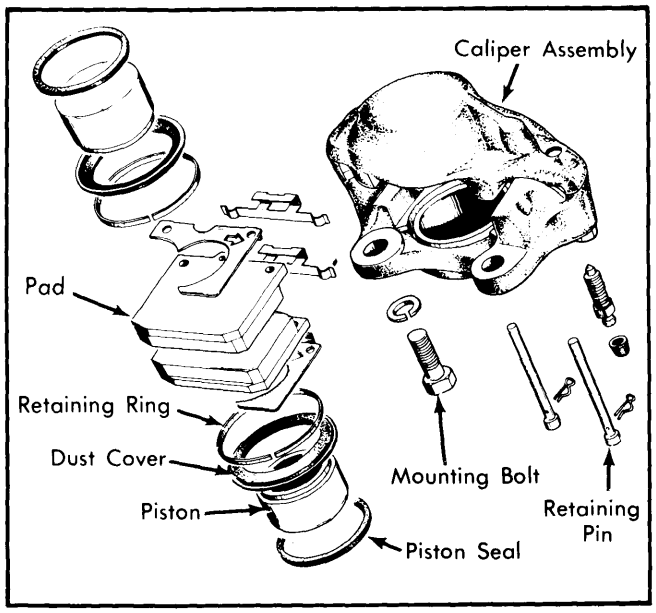

Fig. 3 Exploded View of Front Disc Brake Caliper

Cleaning & Inspection – Clean all parts in alcohol or brake fluid. CAUTION – *DO NOT use mineral based solvents.* Inspect caliper bores for wear, rust, corrosion, or other damage; minor deposits or scratches may be removed with fine emery cloth. Check piston for wear or damage NOTE – *DO NOT use abrasives on piston plated surfaces.*

Reassembly – NOTE – *Manufacturer recommends replacing rubber parts whenever caliper is being overhauled.* Coat piston seal with rubber grease and install into caliper bore. Install dust seal on piston, insert piston into caliper, and install retaining ring. Install opposite piston assembly in same manner.

REAR WHEEL CYLINDER

Disassembly – Remove dust boots. Pull out cylinder pistons and return spring.

Cleaning & Inspection – Clean all parts in alcohol or brake fluid. CAUTION – *DO NOT use mineral based solvents.* Check all parts for wear or damage; replace parts as necessary. Check clearance between cylinder bore and piston; if clearance exceeds .006", replace cylinder or piston as

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necessary. Check spring for damage or distortion. NOTE – *Manufacturer recommends replacing seal whenever wheel cylinder has been disassembled.*

Reassembly – Reverse disassembly procedure and note the following: Apply rubber grease to all parts when reassembling to prevent damage.

MASTER CYLINDER

Disassembly – Remove reservoir filler caps, drain brake fluid, and remove secondary piston stop bolt. Remove snap ring and withdraw primary piston, secondary piston and return springs. Remove valve caps and withdraw check valve assemblies. NOTE – *Do not remove reservoirs unless necessary.*

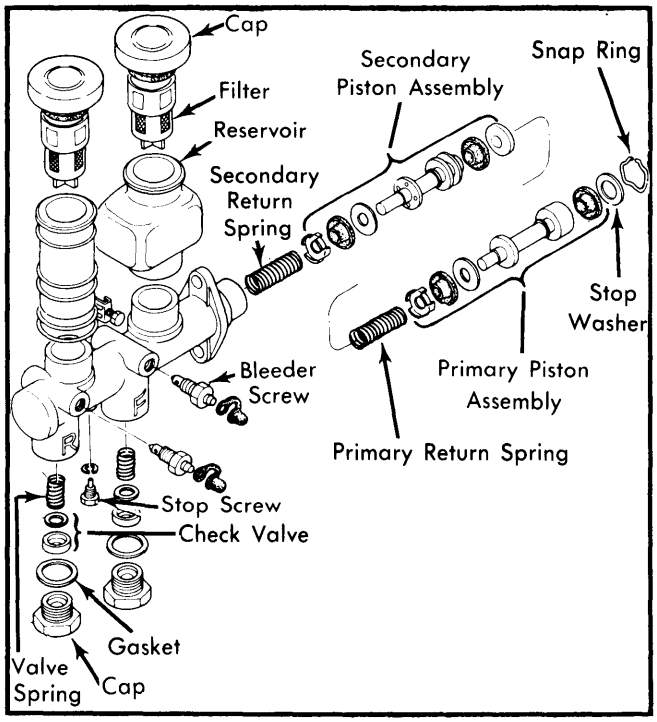

Fig. 4 Master Cylinder Reservoir, Body and Piston Assembly

Cleaning & Inspection – Clean all parts in alcohol or brake fluid and inspect for wear or damage. Check clearance between cylinder bore and pistons; if clearance exceeds .006", replace cylinder or pistons as necessary. NOTE – *Manufacturer recommends replacing piston cups, gaskets, and valves whenever master cylinder has been disassembled.*

Reassembly – Reverse disassembly procedure and note the following: Apply rubber grease to all rubber parts and brake fluid to remaining parts when assembling to prevent damage.

POWER BRAKE UNIT

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

2) Place a suitable wrench (ST08080000) over rear shell mounting studs. Press down on wrench while rotating counterclockwise and remove rear 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 diaphragm from diaphragm plate assembly, then pry off air silencer retainer and remove silencer and filter. Rotate diaphragm 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 inside of front and rear shells for wear or damage and replace as necessary. If slight rust is found on inside surface of shells, 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 installation. When assembling front shell to rear shell ensure marks made at disassembly are aligned. After reassembly, measure distance from master cylinder mounting surface 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 end of push rod.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Caliper-to-Knuckle Flange	53-72 (7.3-9.9)
Rotor-to-Hub	28-38 (3.9-5.3)
Hydraulic Lines	11-13 (1.5-1.8)
Master Cylinder	
Piston Stop Screw	3-4 (.4-.5)
Check Valve Caps	58-65 (8-9)
Anchor Block-to-Backing Plate	10-13 (1.4-1.8)

BRAKE SYSTEM SPECIFICATIONS

Application	Drum Diam. In. (mm)	Wheel Cylinder Diameter		Master Cylinder
		Front In. (mm)	Rear In. (mm)	Diameter In. (mm)
280Z	9.0① (229)	2.125② (53.9)	.875 (22.2)	.875 (22.2)

① – Rear drum.
② – Caliper bore diameter.

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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)
280Z	10.67 (271)	.0059 (.15)	.0028① (.07)	.492 (12.5)	.413 (10.5)	②

① — Maximum allowable.
② — Less than Minimum Refinish Thickness.

BRAKE LINING SPECIFICATION

Application	Drum Dia. In. (mm)	Width		Length		Thickness	
		Front In. (mm)	Rear In. (mm)	Primary In. (mm)	Secondary In. (mm)	Primary In. (mm)	Secondary In. (mm)
280Z (Rear)	9.0 (229)	①	1.575 (40)	8.64 (220)	8.64 (220)	.177 (4.5)	.177 (4.5)

① — Front disc brake equipped.

BRAKE DRUM SPECIFICATIONS

Application	Drum Diameter In. (mm)	Original Diameter In. (mm)	Maximum Refinish Diameter In. (mm)	Discard Diameter In. (mm)
280Z (Rear)	9.0 (229)	9.0 (229)	9.055 (230)	①

① — More than Maximum Refinish Diameter.