Chapter 9 Brakes

Contents

Specifications

General

Brake fluid type	See Chapter 1
Master cylinder piston-to-pushrod clearance	0.004 to 0.020 in (0.1 to 0.5 mm)

Disc brakes

Minimum brake pad thickness	See Chapter 1
Disc standard thickness	
All 1981 and earlier models, B2000 to 1984	0.4724 in (12 mm)
1984 and earlier B2200, 1986 and later 2WD	0.7874 in (20 mm)
4WD	0.87 in (22 mm)
Disc minimum thickness*	
All 1981 and earlier models, B2000 to 1984	0.4331 in (11 mm)
1984 and earlier B2200	0.7480 in (19 mm)
1986 and later 2WD	0.71 in (18 mm)
4WD	0.79 in (20 mm)
Lateral runout	
1984 and earlier (all)	0.0039 in (0.10 mm)
1986 and 1987	0.002 in (0.04 mm)
1988 and later	0.006 in (0.15 mm)

** Refer to marks stamped on the disc (they supercede information printed here)*

Drum brakes

Minimum brake shoe lining thickness	See Chapter 1
Brake drums (all)	
Standard drum diameter	10.2364 in (260 mm)
Maximum drum diameter*	
1984 and earlier	10.2758 in (261 mm)
1986 and 1987	10.31 in (262 mm)
1988 and later	10.30 in 261.5 mm)

** Refer to marks stamped on the drum (they supercede information printed here)*

Torque specifications

	Ft-lbs
Brake caliper mounting bolts	23 to 30
Caliper bracket-to-steering knuckle bolts	36 to 55
Caliper inlet fitting bolt (1986 and later)	16 to 19
Disc-to-hub bolts	33 to 42
Wheel cylinder mounting bolts	
Leading/trailing arrangement	9 to 12
Duo-servo arrangement	15 to 18
Brake backing plate-to-axle housing	
1984 and earlier	33 to 36
1986 and later 2WD	65 to 80
4WD	72 to 87

Torque specifications (continued)

	Ft-lbs
Master cylinder mounting nuts	7 to 12
Brake pedal pivot shaft nut	14 to 25
Power brake booster mounting nuts	12 to 17
Wheel lug nuts	
1981 and earlier	58 to 65
1982 thru 1984	
Standard wheels	72 to 80
Styled wheels	87 to 94
1986 and later	87 to 108

1 General information

The vehicles covered by this manual are equipped with hydraulically operated front and rear brake systems **(see illustrations)**. The front brakes on early models are drum type, while 1977 and later models employ front disc brakes. The rear brakes on all models are drum type.

Some early models use a single master cylinder, but the majority are equipped with a dual master cylinder which allows the operation of half of the system if the other half fails. This system also incorporates a proportioning bypass valve which limits pressure to the rear brakes under heavy braking to prevent rear wheel lock-up.

1990 models are equipped with a rear-wheel Anti-Lock Brake System (ABS) on the rear wheels. This system monitors the rear wheel speed, and when it senses a drop in wheel speed, modulates the hydraulic pressure to the rear brakes, inhibiting their tendency to lock up. The system consists of a control unit located under the driver's seat, the hydraulic unit which contains solenoids to pulse the brake line pressure, the speed sensor mounted in the axle housing, a system electrical check connector, a pressure differential switch located near the master cylinder and a system fuse **(see illustration)**.

Each time the vehicle is started, the amber ABS warning light on the dashboard illuminates for a brief time and then goes out, indicating that the system is operating properly. If the dashboard light comes on and stays on while the vehicle is in operation, the ABS system requires attention. About the only check the home mechanic can make at this point is to inspect the ABS fuse to determine if it is burned out. Due to the complicated nature of this system, further diagnosis of the ABS system should be left to a dealer.

On four wheel drive models, the proportioning bypass valve is substituted with a load-sensing G valve (LSGV).

Most models are equipped with a power brake booster which utilizes engine vacuum to assist in application of the brakes.

Early model drum brakes must be adjusted at specified intervals, but late model (rear only) drum brakes are adjusted automatically. The front disc brakes adjust for pad wear automatically, as well.

The parking brake operates the rear brakes only, through cable actuation.

Precautions

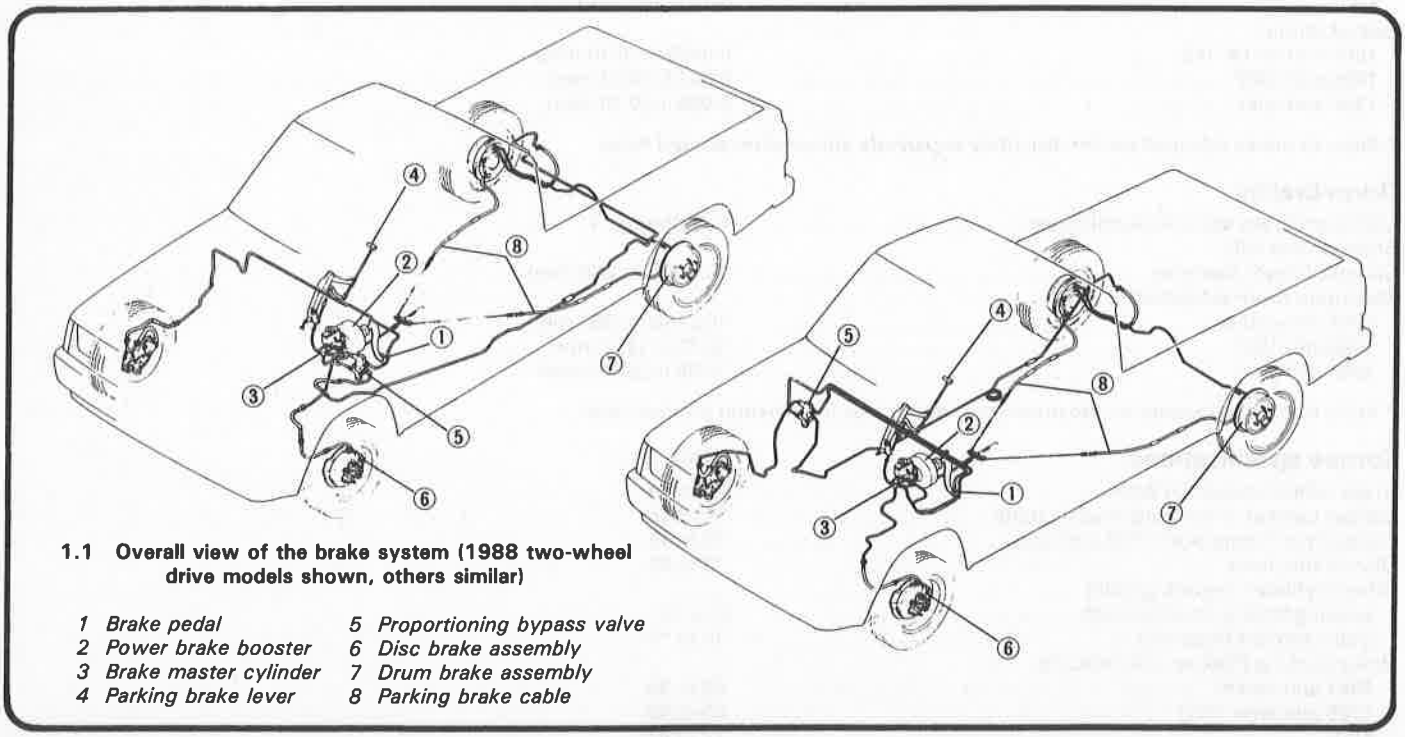
There are some notes and cautions involving the brake system on this vehicle:

a) Use only DOT 3 brake fluid in this system

b) The brake pads and linings contain asbestos fibers which are hazardous to your health if inhaled. Whenever you work on the brake system components, carefully clean all parts with brake cleaner. Do not allow the fine asbestos dust to become airborne.

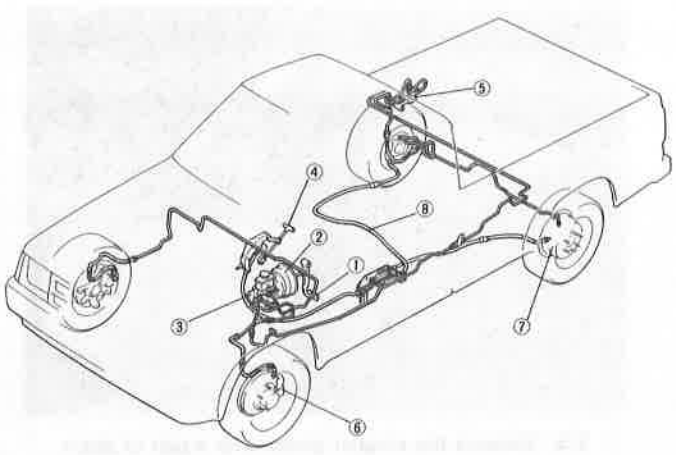
c) Safety should be paramount whenever any servicing of the brake components is performed. Do not use parts or fasteners which are not in perfect condition, and be sure that all clearances and torque specifications are adhered to. If you are at all unsure about a certain procedure, seek professional advice. Upon completion of any brake system work, test the brakes carefully in a controlled area before putting the vehicle into normal service. If a problem is suspected in the brake system, do not drive the vehicle until the fault is corrected.

d) Tires, load and front end alignment are factors which also affect braking performance.



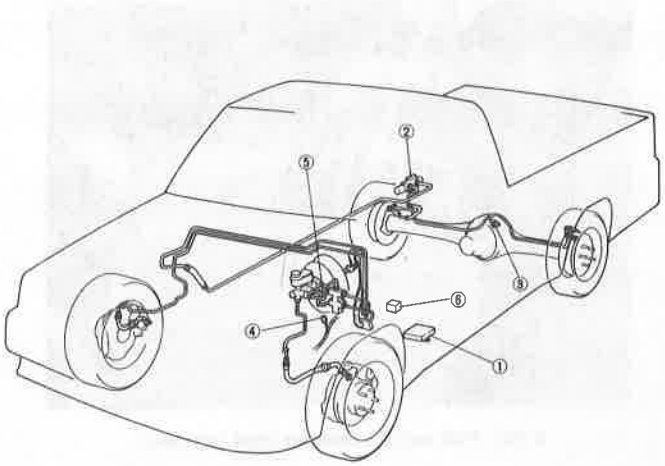
1.1 Overall view of the brake system (1988 two-wheel drive models shown, others similar)

1 Brake pedal
2 Power brake booster
3 Brake master cylinder
4 Parking brake lever
5 Proportioning bypass valve
6 Disc brake assembly
7 Drum brake assembly
8 Parking brake cable



1.2 Overall view of the brake system (4WD models)

1 Brake pedal
2 Power brake booster
3 Brake master cylinder
4 Parking brake lever
5 Load-sensing G valve (LSGV)
6 Disc brake assembly
7 Drum brake assembly
8 Parking brake cable



1.3 Overall view of the 1990 model, showing the ABS system

1 Control unit
2 Hydraulic unit
3 Speed sensor
4 System check connector
5 Pressure differential switch
6 ABS fuse

2 Front brake pads — replacement

Warning: *Disc brake pads must be replaced on both front wheels at the same time — never replace the pads on only one wheel. Also, the dust created by the brake system contains asbestos, which is harmful to your health. Never blow it out with with compressed air and don't inhale any of it. An approved filtering mask should be worn when working on the brakes. Do not, under any circumstances, use petroleum-based solvents to clean brake parts. Use brake cleaner or denatured alcohol only!*

Note: *When servicing the disc brakes, use only high quality, nationally recognized name brand pads.*

1 Remove the master cylinder reservoir cap and siphon out approximately half of the fluid into a container. Be careful not to spill fluid onto any of the painted surfaces — it will damage the paint.

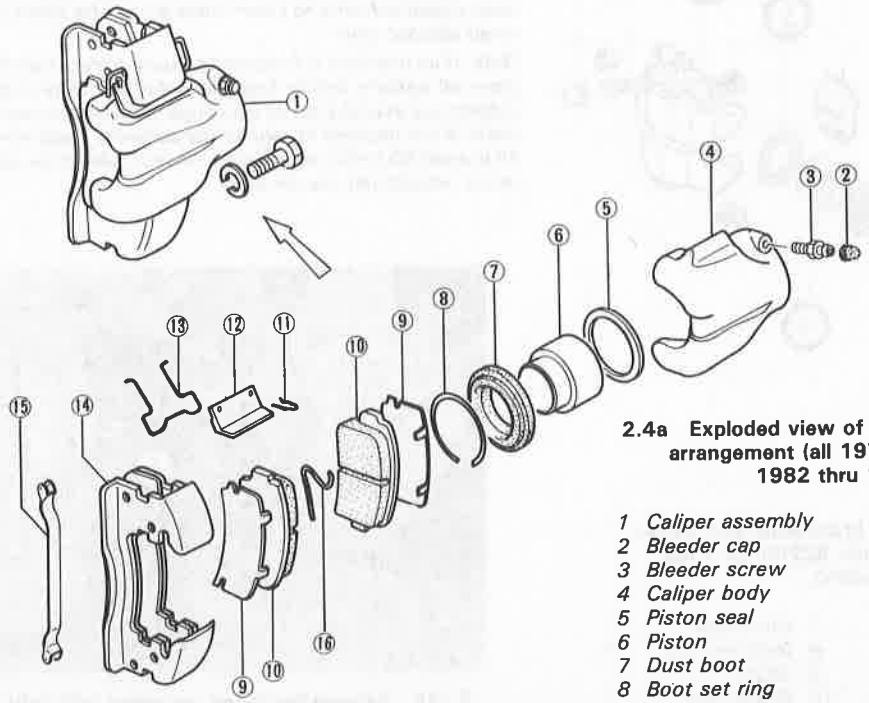
2 Loosen the wheel lug nuts, raise the vehicle and support it securely on jackstands. Remove the wheels. Work on one brake assembly at a time, using the assembled brake for reference if necessary.

3 Using a large C-clamp, bottom the piston back into the caliper bore. The frame end of the C-clamp should be positioned on the backside of the caliper body and the screw should bear on the outer brake pad.

1977 thru 1981 models (all), 1982 thru 1984 B2000

Refer to illustrations 2.4a, 2.4b and 2.5

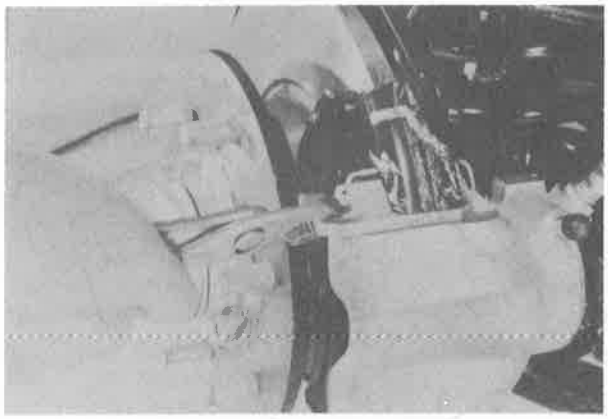
4 Remove the four locking clips **(see illustrations)**.



2.4a Exploded view of the brake pads and caliper arrangement (all 1977 thru 1981 models, 1982 thru 1984 B2000)

1 Caliper assembly
2 Bleeder cap
3 Bleeder screw
4 Caliper body
5 Piston seal
6 Piston
7 Dust boot
8 Boot set ring
9 Shim
10 Brake pad
11 Locking clip
12 Stopper plate
13 Spring
14 Caliper bracket
15 Anti-rattle spring clip
16 Anti-rattle spring

2.4b Pull out the locking clips (arrows)



2.5 Remove the stopper plates with a pair of pliers

5 Pull out the stopper plates **(see illustration)** and lift the caliper and anti-rattle springs from the caliper bracket. Support the caliper by a piece of wire — don't allow it to hang by the brake hose.
6 Remove the brake pads and anti-squeal shims from the caliper bracket.
7 Apply a thin coat of disc brake grease to the brake pad backing plates.
8 Install the pads and shims into the caliper bracket.
9 Install the anti-rattle springs then slide the caliper over the pads. Coat the stopper plates with a thin film of disc brake grease and drive them into place. Install the locking clips.
10 Repeat the procedure on the other wheel then proceed to Step 15.

1982 thru 1984 B2200, all 1986 and later models

Refer to illustrations 2.11a and 2.11b

11 Remove the caliper lower mounting bolt and rotate the caliper upward to allow removal of the pads **(see illustrations)**. Remove the anti-rattle springs and pull the brake pads and shims from the caliper bracket.
12 Coat the pad backing plate with disc brake grease and install the pads and shims into the caliper bracket.
13 Install the anti-rattle springs then swing the caliper down over the pads. Install the lower mounting bolt, tightening it to the specified torque.
14 Repeat the procedure on the other wheel.

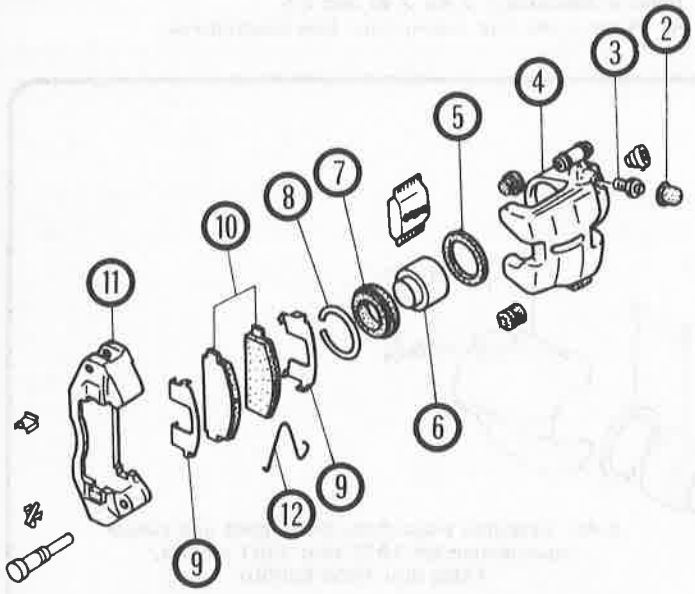
All models

15 Firmly depress the brake pedal a few times to bring the pads into contact with the disc. Check the fluid level in the master cylinder, topping it up if necessary.
16 Road test the vehicle carefully before placing it into normal use.

3 Disc brake caliper — removal, overhaul and installation

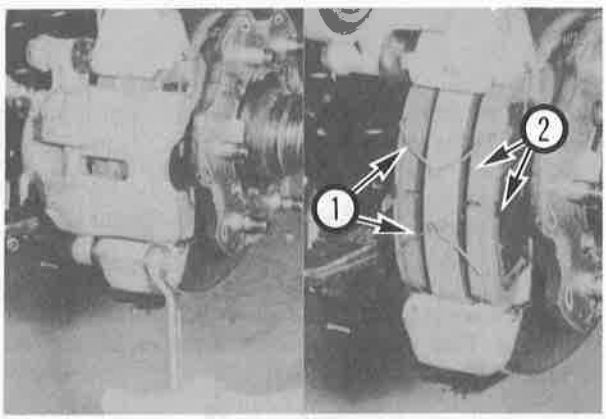
Warning: *Dust created by the brake system contains asbestos, which is harmful to your health. Never blow it out with compressed air and don't inhale any of it. An approved filtering mask should be worn when working on the brakes. Do not, under any circumstances, use petroleum-based solvents to clean brake parts. Use brake cleaner or denatured alcohol only!*

Note: *If an overhaul is indicated (usually because of fluid leakage) explore all options before beginning the job. New and factory rebuilt calipers are available on an exchange basis, which makes this job quite easy. If it's decided to rebuild the calipers, make sure that a rebuild kit is available before proceeding. Always rebuild the calipers in pairs — never rebuild just one of them.*



2.11a Exploded view of the brake pads and caliper arrangement (1982 thru 1984 B2200, all 1986 and later models)

1 Not used
2 Bleeder cap
3 Bleeder screw
4 Caliper body
5 Piston seal
6 Piston
7 Dust boot
8 Boot set ring
9 Shim
10 Brake pads
11 Caliper bracket
12 Anti-rattle spring



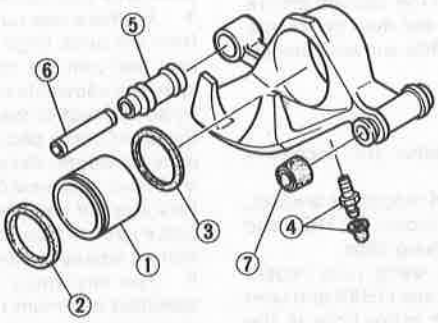
2.11b Remove the lower mounting bolt (left), rotate the caliper upward then remove the springs (1) and the pad and shim assemblies (2)

3.7a Using a screwdriver, remove the boot set ring

3.7b Remove the boot from the cylinder

3.8 Apply compressed air to the brake fluid hose connection on the caliper body. Position a wood block between the piston and caliper to prevent damage

3.9 Because metal tools may cause damage, a wooden or plastic tool should be used to dig the piston seal out of its groove (a sharp pencil works well)



3.10a Exploded view of the later model caliper

1 *Piston*
2 *Dust boot*
3 *Piston seal*
4 *Bleeder screw and cap*
5 *Boot*
6 *Pin*
7 *Bushing*

3.10b On each side of the caliper, push the sliding bushing up through the boot and pull it free, then remove the dust boots

Removal

1 Remove the cap from the brake fluid reservoir, siphon off two-thirds of the fluid into a container and discard it.

2 Loosen the wheel lug nuts, raise the front of the vehicle and support it securely on jackstands. Remove the front wheels.

3 On 1984 and earlier models, disconnect the brake hose from the brake line at the frame bracket. Use a flare nut wrench on the line fitting to avoid rounding-off the peaks of the nut. After the fitting is completely loosened, pull the hose retaining clip out with a pair of pliers. The hose can now be unscrewed from the cliper. Plug the line to prevent excessive fluid loss and contamination.

4 On 1986 and later models, remove the brake hose inlet fitting bolt and detach the hose. Have a rag handy to catch spilled fluid and wrap a plastic bag tightly around the end of the hose to prevent fluid loss and contamination.

5 Remove the caliper, referring to Section 2 — it's part of the brake pad removal procedure.

Overhaul

Refer to illustrations 3.7a, 3.7b, 3.8, 3.9, 3.10a, 3.10b, 3.14 and 3.17

6 Clean the exterior of the caliper with brake cleaner or denatured alcohol. **Never use gasoline, kerosene or petroleum-based cleaning solvents.** Place the caliper on a clean workbench.

7 Remove the set ring and the rubber boot **(see illustrations)**.

8 Position a wooden block or several shop rags in the caliper as a cushion, then use compressed air to remove the piston from the caliper **(see illustration)**. Use only enough air pressure to ease the piston out of the bore. If the piston is blown out, even with the cushion in place, it may be damaged. **Warning:** *Never place your fingers in front of the piston in an attempt to catch or protect it when applying compressed air, as serious injury could occur.*

9 Using a wood or plastic tool, remove the piston seal from the groove in the caliper bore **(see illustration)**. Metal tools may cause bore damage.

10 Remove the caliper bleeder screw, then remove the sliding bushings and dust boots from the caliper ears (1986 and later models only). Discard all rubber parts **(see illustrations)**.

11 Clean the remaining parts with brake system cleaner or denatured alcohol then blow them dry with compressed air.

12 Carefully examine the piston for nicks and burrs and loss of plating. If surface defects are present, the parts must be replaced.

13 Check the caliper bore in a similar way. Light polishing with crocus cloth is permissible to remove light corrosion and stains. Discard the mounting bolts if they're corroded or damaged.

3.14 Position the seal in the caliper bore groove, making sure it isn't twisted

14 When assembling, lubricate the piston bore and seal with clean brake fluid. Position the seal in the caliper bore groove **(see illustration).**
15 Lubricate the piston with clean brake fluid, insert the piston squarely in the caliper bore, then apply force to bottom the piston in the bore.
16 Install the new rubber boot and set ring.
17 Lubricate the sliding bushings and boots with the silicone grease supplied in the rebuild kit **(see illustration).** Push the dust boots into the caliper ears, then install the sliding bushings (1986 and later models only).

Installation

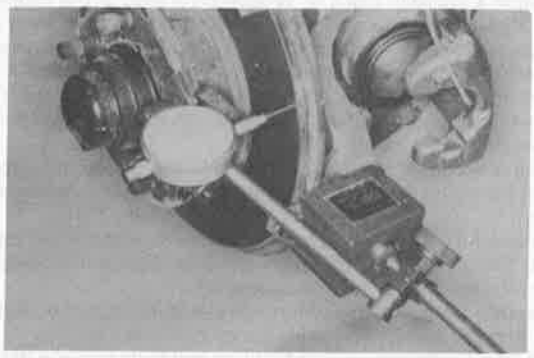
18 Inspect the mounting bolts or stopper plates for excessive corrosion.
19 Place the caliper in position over the disc and mounting bracket, install the bolts and tighten them to the specified torque. On 1984 and earlier models, install the stopper plates and locking clips.
20 Install the brake hose and inlet fitting bolt, using new copper washers, then tighten the bolt to the specified torque (1986 and later models). On 1984 and earlier models, install the brake hose to the caliper and attach it to the frame bracket. Install the clip, then tighten the fitting securely. Be sure to bleed the brakes (Section 11).
21 Install the wheels and lower the vehicle.
22 After the job has been completed, firmly depress the brake pedal a few times to bring the pads into contact with the disc.

4 Brake disc — inspection, removal and installation

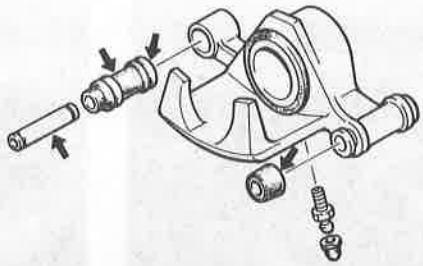
Refer to illustrations 4.4a, 4.4b, 4.5 and 4.8

Inspection

1 Loosen the wheel lug nuts, raise the vehicle and support it securely on jackstands. Remove the wheel.



4.4a Check disc runout with a dial indicator positioned approximately 1/2-inch from the edge of the disc — if the reading exceeds the maximum allowable runout, the disc will have to be resurfaced or replaced



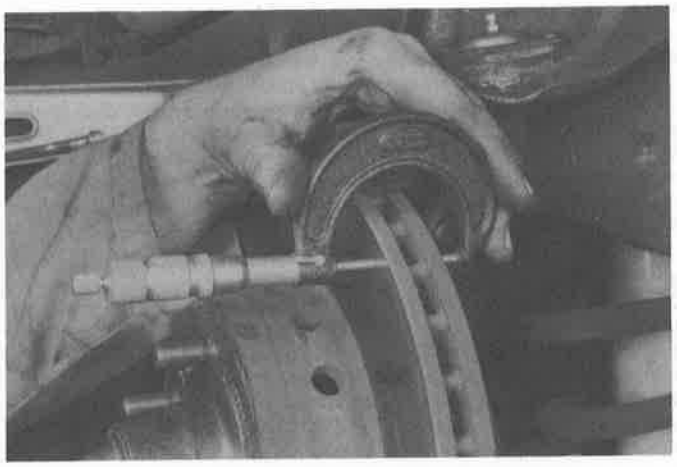
3.17 Apply silicone grease (included in the rebuild kit) to the areas indicated

2 Remove the brake caliper as outlined in Section 3. It's not necessary to disconnect the brake hose. After removing the caliper bolts, suspend the caliper out of the way with a piece of wire. Don't let the caliper hang by the hose and don't stretch or twist the hose.
3 Visually check the disc surface for score marks and other damage. Light scratches and shallow grooves are normal after use and may not always be detrimental to brake operation, but deep score marks — over 0.015-inch (0.38 mm) — require disc removal and refinishing by an automotive machine shop. Be sure to check both sides of the disc. If pulsating has been noticed during application of the brakes, suspect excessive disc runout.
4 To check disc runout, place a dial indicator at a point about 1/2-inch from the outer edge of the disc **(see illustration).** Set the indicator to zero and turn the disc. The indicator reading should not exceed the specified allowable runout limit. If it does, the disc should be refinished by an automotive machine shop. **Note:** *Professionals recommend resurfacing of brake discs regardless of the dial indicator reading (to produce a smooth, flat surface, that will eliminate brake pedal pulsations and other undesirable symptoms related to questionable discs). At the very least, if you elect not to have the discs resurfaced, deglaze the brake pad surface with medium-grit emery cloth (use a swirling motion to ensure a non-directional finish)* **(see illustration).**
5 The disc must not be machined to a thickness less than the specified minimum refinish thickness. The minimum wear thickness is cast into the inside of the disc. The disc thickness can be checked with a micrometer **(see illustration).**

Removal

6 Remove the caliper bracket-to-steering knuckle bolts and lift the bracket off.
7 Remove the hub/disc assembly, referring to Chapter 1, *Front wheel bearing check, repack and adjustment.*
8 Unbolt the disc from the hub **(see illustration).**

4.4b Using a swirling motion, remove the glaze from the disc with sandpaper or emery cloth



4.5 Use a micrometer to measure the thickness of the disc

Installation

9 Install the disc to the hub, tightening the bolts to the specified torque in a criss-cross pattern.

10 Install the disc and hub assembly and adjust the wheel bearing (Chapter 1).

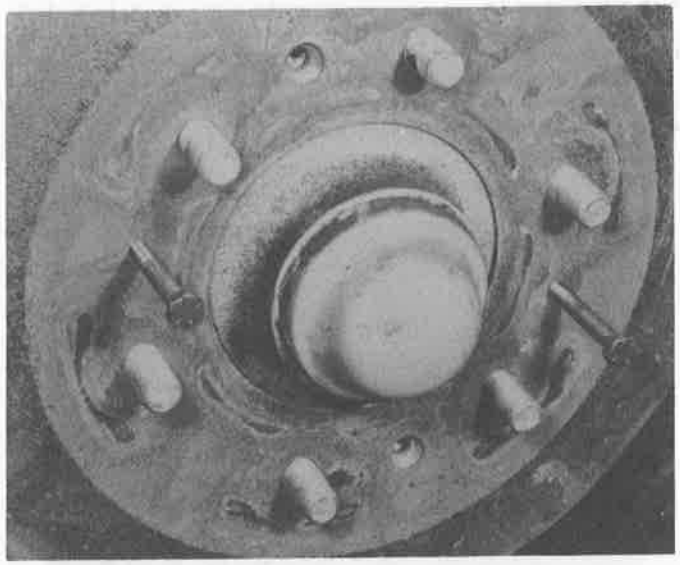
11 Install the caliper/bracket, tightening the mounting bolts to the specified torque. Position the pads in the bracket and install the caliper (refer to Section 3 for the caliper installation procedure, if necessary). Tighten the caliper bolts to the specified torque (1986 and later models).

12 Install the wheel, then lower the vehicle to the ground. Depress the brake pedal a few times to bring the brake pads into contact with the disc. Bleeding of the system will not be necessary unless the brake hose was disconnected from the caliper. Check the operation of the brakes carefully before placing the vehicle into normal service.

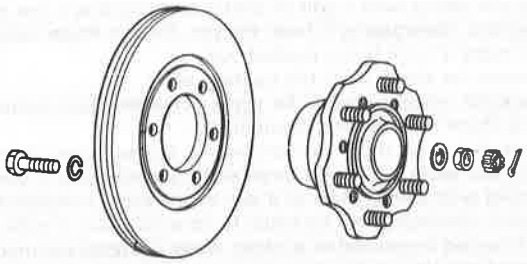
5 Front brake shoes — replacement

Refer to illustrations 5.2 and 5.4

Warning: *Drum brake shoes must be replaced on both front wheels at the same time — never replace the shoes on only one wheel. Also, the dust created by the brake system contains asbestos, which is harmful to your health. Never blow it out with compressed air and don't inhale any of it. An approved filtering mask should be worn when working on the brakes. Do not, under any circumstances, use petroleum-based solvents to clean brake parts. Use brake cleaner or denatured alcohol only!* **Caution:** *Whenever the brake shoes are replaced, the retractor and hold-down springs should also be replaced. Due to the continous heating/cooling cycle that the springs are subjected to, they lose their tension over a period of time and may allow the shoes to drag on the drum and wear at a much faster rate than normal. When replacing the front brake shoes, use only high quality nationally recognized brand-name parts.*



5.2 If the brake drum refuses to slide off the hub, screw two bolts of the proper size and thread pitch into the threaded holes and tighten them evenly, a little at a time. The drum will be pushed off by the bolts



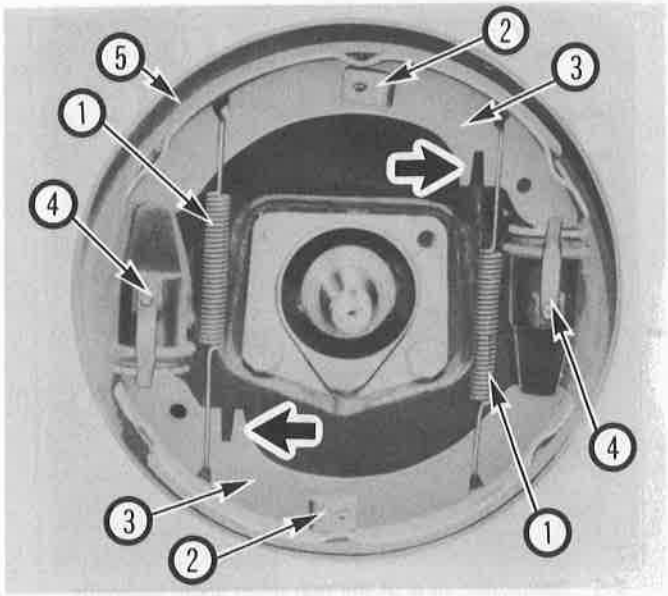
4.8 Remove the bolts from the backside of the disc/hub assembly, then separate the two components. It may be necessary to tap the disc off the hub with a hammer and a block of wood

1 Loosen the wheel lug nuts, raise the vehicle and support it securely on jackstands. Remove the wheel.

2 Remove the brake drum attaching screws and pull the drum off the hub. If it is stuck, install two bolts of the correct size and thread pitch into the threaded holes in the drum. Tighten the bolts a little at a time until the drum is free **(see illustration)**.

3 Before removing anything, clean the brake assembly with brake cleaner or denatured alcohol — DO NOT use compressed air to blow the dust from the brake assembly!

4 Remove the brake shoe retracting springs **(see illustration)**.



5.4 Assembled view of the front drum brake assembly (hub removed for clarity). The notches in the shoes (arrows) must be on the same side as the adjusters

1 Retracting spring
2 Hold-down spring and pin
3 Brake shoe
4 Wheel cylinder
5 Backing plate

5 Remove the hold-down springs and pins. This is accomplished by grasping the spring with a pair of pliers, pushing down and rotating it 90 degrees, disengaging it from the pin. Place a finger behind the pin to prevent it from being pushed out.
6 Remove the shoes from the backing plate.
7 Check the wheel cylinders for signs of leaking fluid, replacing or rebuilding them if necessary (Section 8).
8 Check the brake drum for hard spots, cracks, score marks and grooves. Hard spots will appear as small discolored areas. If they can't be removed with emery cloth or if any of the other conditions listed above exist, the drum must be taken to an automotive machine shop to have it turned (machined on a lathe). **Note:** *Professional mechanics recommend resurfacing the drums whenever a brake job is performed. Resurfacing will eliminate the possibility of out-of-round drums.*
9 Unscrew the brake adjusters from the wheel cylinders, clean them and apply a little high temperature grease to the adjuster screw threads and star wheels. Install the adjusters into the wheel cylinders, turning them in completely.
10 Lubricate the brake shoe contact areas on the backing plate. Position the new shoes on the backing plate, making sure that the slots in the brake shoes are on the same side as the adjuster screw star wheel and the ends of the brake shoes mesh with the slots in the wheel cylinders **(see illustration 5.4)**.
11 Install the hold-down pins and springs.
12 Install the retractor springs.
13 Slide the brake drum over the hub and install the retaining screws.
14 Install the wheel and lug nuts. Adjust the brake as described in Section 7. Tighten the lug nuts to the specified torque.
15 Repeat the operation on the other wheel.
16 Road test the vehicle carefully before placing it into normal use.

6 Rear brake shoes — replacement

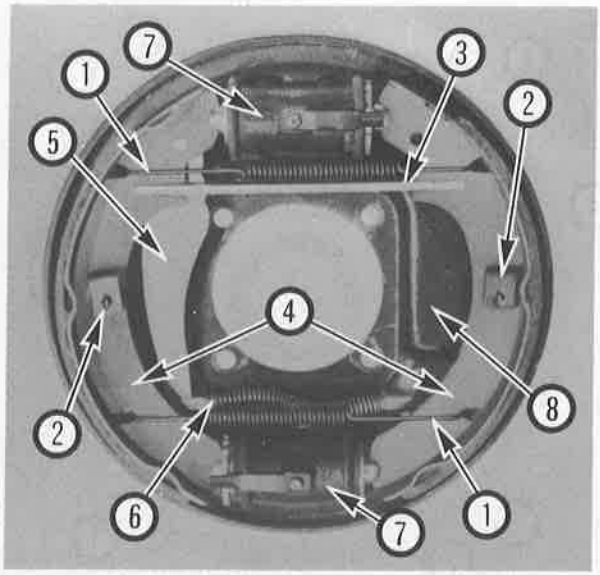
Warning: *Drum brake shoes must be replaced on both rear wheels at the same time — never replace the shoes on only one wheel. Also, the dust created by the brake system contains asbestos, which is harmful to your health. Never blow it out with compressed air and don't inhale any of it. An approved filtering mask should be worn when working on the brakes. Do not, under any circumstances, use petroleum-based solvents to clean brake parts. Use brake cleaner or denatured alcohol only!* **Caution:** *Whenever the brake shoes are replaced, the retractor and hold-down springs should also be replaced. Due to the continous heating/cooling cycle that the springs are subjected to, they lose their tension over a period of time and may allow the shoes to drag on the drum and wear at a much faster rate than normal. When replacing the brake shoes, use only high quality nationally recognized brand-name parts.*

1 Loosen the wheel lug nuts, raise the vehicle and support it securely on jackstands. Remove the wheel.
2 Remove the brake drum attaching screws and pull the drum off the axle flange. If it is stuck, install two bolts of the correct size and thread pitch into the threaded holes in the drum. Tighten the bolts a little at a time until the drum is free **(see illustration 5.2)**.
3 Before removing anything, clean the brake assembly with brake cleaner or denatured alcohol — DO NOT use compressed air to blow the dust from the brake assembly!

Early style (two wheel cylinders)

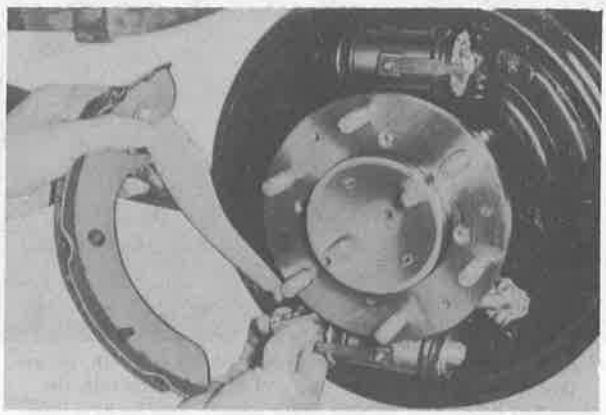
Refer to illustrations 6.4 and 6.7

4 Remove the brake shoe retracting springs **(see illustration)**.
5 Remove the hold-down springs and pins. This is accomplished by grasping the spring with a pair of pliers, pushing down and rotating it 90 degrees, disengaging it from the pin. Place a finger behind the pin to prevent it from being pushed out.
6 Remove the shoes and parking brake strut from the backing plate.
7 Disconnect the parking brake cable from the parking brake lever **(see illustration)**.
8 Remove the pin retaining clip and pin, separating the parking brake lever from the brake shoe.
9 Check the wheel cylinders for signs of leaking fluid, replacing or rebuilding them if necessary (Section 8).
10 Check the brake drum for hard spots, cracks, score marks and grooves. Hard spots will appear as small discolored areas. If they can't be removed with emery cloth or if any of the other conditions listed above exist, the drum must be taken to an automotive machine shop to have it turned (machined on a lathe). **Note:** *Professional mechanics recommend resurfacing the drums whenever a brake job is performed. Resurfacing will eliminate the possibility of out-of-round drums.*
11 Unscrew the brake adjusters from the wheel cylinders, clean them and apply a little high temperature grease to the adjuster screw threads and star wheels. Install the adjuster screws into the wheel cylinders, turning them in completely.
12 Lubricate the brake shoe contact areas on the backing plate with high temperature grease. Connect the parking brake lever to the trailing brake shoe. Attach the parking brake cable to the hook on the lever. Position the new shoes on the backing plate, making sure that the slots in the brake shoes are on the same side as the adjuster screw star wheel and the ends of the brake shoes mesh with the slots in the wheel cylinders **(see illustration 6.4)**.



6.4 Assembled view of the rear drum brake assembly (early style)

1 Retracting spring
2 Hold-down spring and pin
3 Parking brake strut
4 Brake shoe
5 Parking brake lever
6 Parking brake cable
7 Wheel cylinder
8 Backing plate



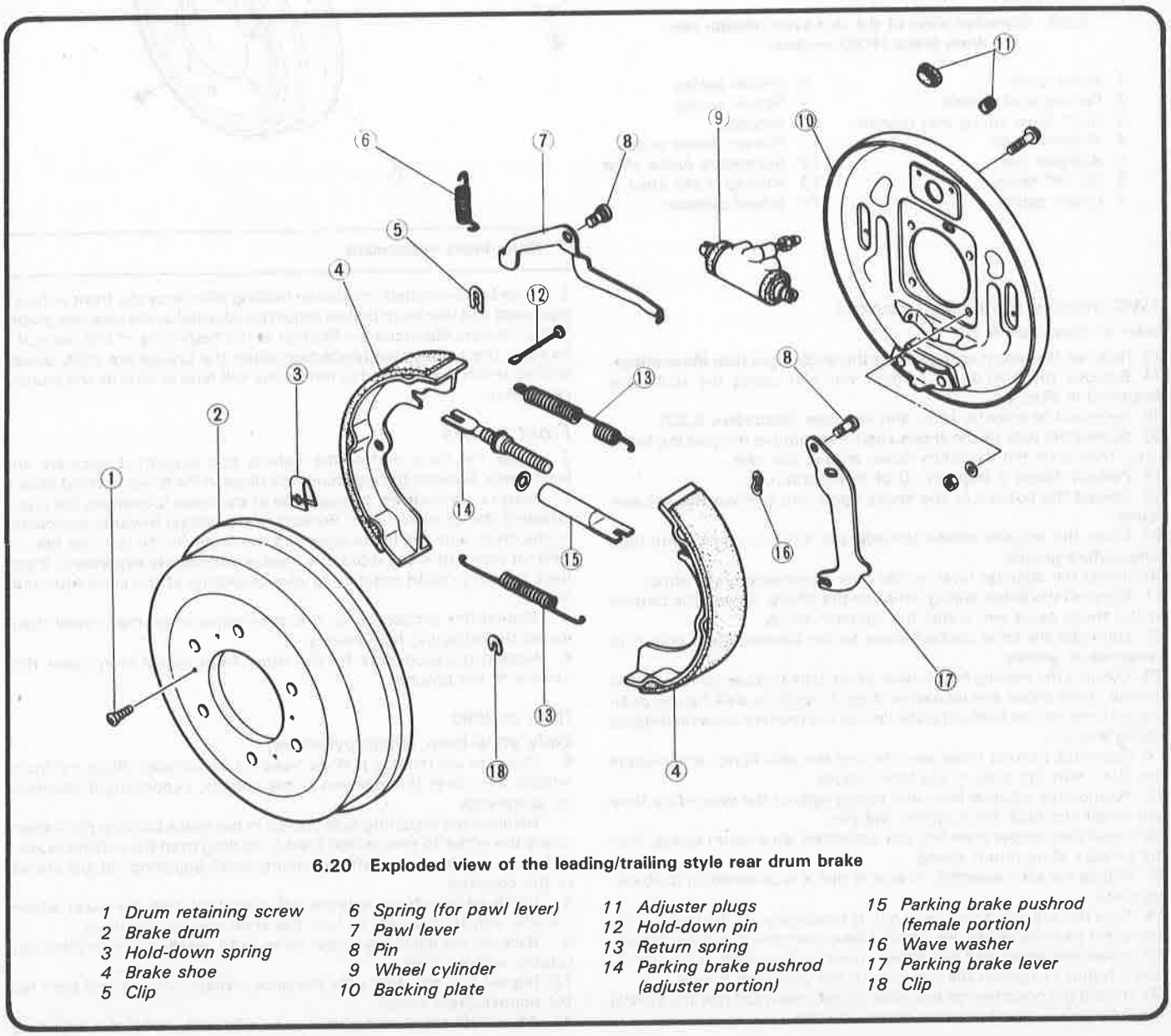
6.7 Unhook the parking brake lever from the cable end

13 Spread the tops of the shoes slightly and install the parking brake strut. Make sure the slots in the strut engage with the slots on the brake shoes.
14 Install the hold-down pins and springs.
15 Install the retractor springs.
16 Slide the brake drum over the axle flange and install the retaining screws.
17 Install the wheel and lug nuts. Adjust the brake as described in Section 7. Tighten the lug nuts to the specified torque.
18 Repeat the operation on the other wheel.
19 Road test the vehicle carefully before placing it into normal service.

Later style (leading/trailing type) (except 4WD models)

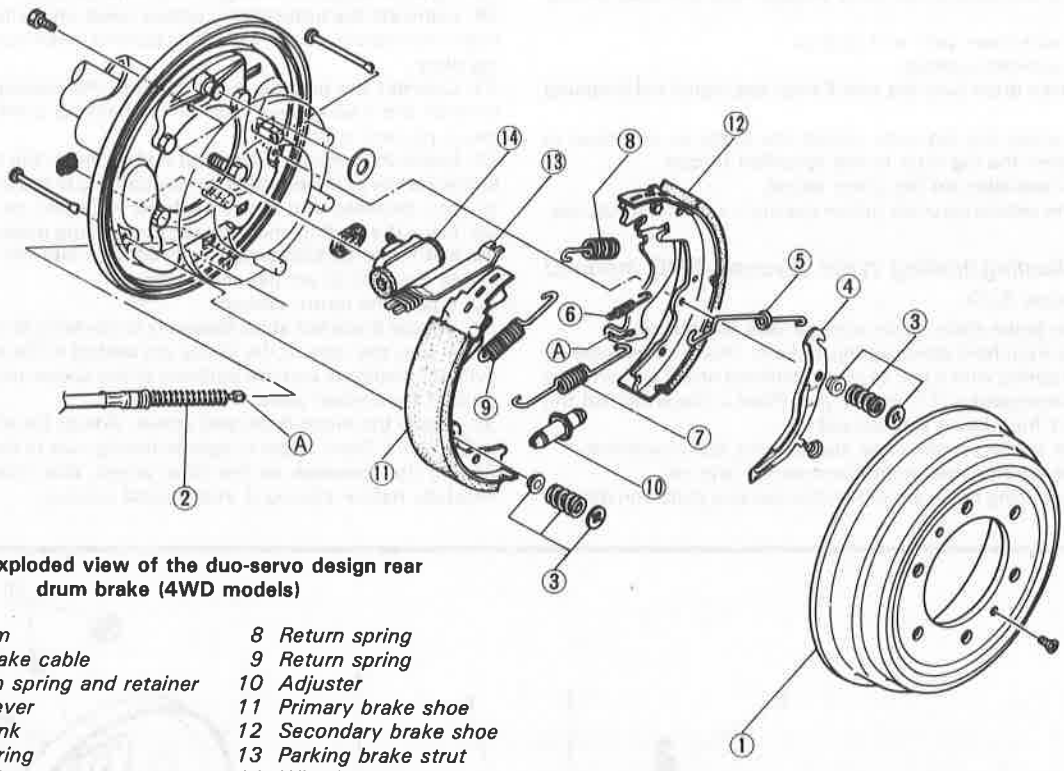
Refer to illustration 6.20

20 Remove the brake shoe return springs **(see illustration)**.
21 Remove the front hold-down spring and pin. This is accomplished by grasping the spring with a pair of pliers, pushing down and rotating it 90 degrees, disengaging it from the pin. Place a finger behind the pin to prevent it from being pushed out.
22 Remove the leading brake shoe and parking brake pushrod.
23 Remove the trailing shoe hold down-spring and pin.
24 Remove the trailing brake shoe from the backing plate and disconnect the parking brake cable from the parking brake lever.
25 Perform Steps 7 through 11 of this Section.
26 Lubricate the brake shoe contact areas on the backing plate with high temperature grease. Install the parking brake lever to the new trailing shoe.
27 Connect the parking brake cable to the parking brake lever and position the trailing shoe against the backing plate. Install the hold-down pin and spring.
28 Install the adjuster pawl lever and spring to the new leading shoe. Lubricate the adjuster screw on the parking brake pushrod and install the non-threaded end of the pushrod to its slot on the trailing shoe.
29 Place the leading shoe against the backing plate, making sure that the slot in the parking brake pushrod slips into the slot on the shoe. Install the hold-down pin and spring.
30 Install the return springs.
31 Wiggle the brake shoe assembly to center it on the backing plate. Make sure the tops of the shoes are seated in the slots of the wheel cylinder pushrods and the bottoms of the shoes are resting under the tabs of the anchor plate.
32 Install the brake drum and wheel. Adjust the shoes as described in Section 7. Don't forget to tighten the lug nuts to the specified torque. Repeat the operation on the other wheel, then road test the vehicle carefully before placing it into normal service.



6.20 Exploded view of the leading/trailing style rear drum brake

1 *Drum retaining screw*
2 *Brake drum*
3 *Hold-down spring*
4 *Brake shoe*
5 *Clip*
6 *Spring (for pawl lever)*
7 *Pawl lever*
8 *Pin*
9 *Wheel cylinder*
10 *Backing plate*
11 *Adjuster plugs*
12 *Hold-down pin*
13 *Return spring*
14 *Parking brake pushrod (adjuster portion)*
15 *Parking brake pushrod (female portion)*
16 *Wave washer*
17 *Parking brake lever*
18 *Clip*



6.33 Exploded view of the duo-servo design rear drum brake (4WD models)

1 *Brake drum*
2 *Parking brake cable*
3 *Hold down spring and retainer*
4 *Adjuster lever*
5 *Adjuster link*
6 *Pull-off spring*
7 *Lower spring*
8 *Return spring*
9 *Return spring*
10 *Adjuster*
11 *Primary brake shoe*
12 *Secondary brake shoe*
13 *Parking brake strut*
14 *Wheel cylinder*

4WD models (duo-servo design)

Refer to illustration 6.33

33 Remove the return springs from the anchor pin **(see illustration)**.
34 Remove the hold-down springs and pins using the technique described in Step 21.
35 Remove the adjuster lever and link **(see illustration 6.33)**.
36 Spread the tops of the shoes apart and remove the parking brake strut, then slide the assembly down around the axle.
37 Perform Steps 7 through 10 of this Section.
38 Spread the bottom of the shoes apart and remove the adjuster screw.
39 Clean the adjuster screw threads and lubricate them with high temperature grease.
40 Install the adjuster lever to the new secondary brake shoe.
41 Connect the lower spring between the shoes, spread the bottom of the shoes apart and install the adjuster screw.
42 Lubricate the shoe contact areas on the backing plate with high temperature grease.
43 Connect the parking brake cable to the parking brake lever. Spread the top of the shoes and maneuver them around the axle flange, positioning them on the backing plate. Install the primary shoe hold-down spring and pin.
44 Guide the parking brake strut behind the axle flange and engage the slots with the slots in the brake shoes.
45 Position the adjuster lever and spring against the secondary shoe and install the hold-down spring and pin.
46 Install the adjuster lever link and secondary shoe return spring, then the primary shoe return spring.
47 Wiggle the shoe assembly to ensure that it is centered on the backing plate.
48 Turn the adjuster screw in or out as necessary, so the brake drum just slides over the shoes. Install the brake drum and retaining screws.
49 Install the wheel and adjust the shoes as described in Section 7. Don't forget to tighten the lug nuts to the specified torque.
50 Repeat the operation on the other wheel, then road test the vehicle carefully before placing it into normal service.

7 Drum brake adjustment

1 In order to maintain maximum braking efficiency the front (where equipped) and rear drum brakes should be adjusted at the intervals given in the Routine Maintenance Section at the beginning of this manual. Perform the adjustment procedure when the brakes are cold, since brakes which are adjusted to hot drums will tend to bind as the drums cool down.

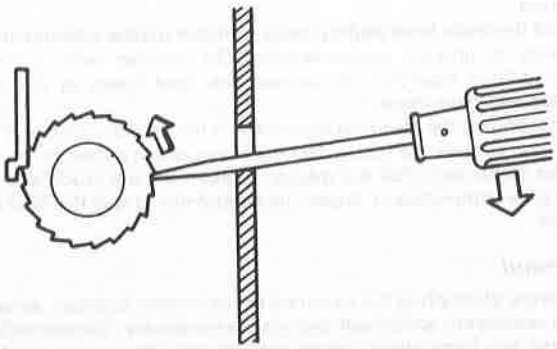
Front brakes

2 Raise the front end of the vehicle and support it securely on jackstands. Remove the adjusting hole plugs in the brake backing plate.
3 Insert a screwdriver through one of the holes to contact the star-wheel of the wheel cylinder. Rotate the star-wheel towards the inside of the drum until the brake shoe hits the drum (try to turn the tire — when it won't turn any more, the shoe is sufficiently expanded), then back off six to eight notches to give clearance of the shoe from the drum.
4 Repeat this procedure for the other adjuster on that wheel then install the adjusting hole covers.
5 Repeat the procedure for the other front wheel then lower the vehicle to the ground.

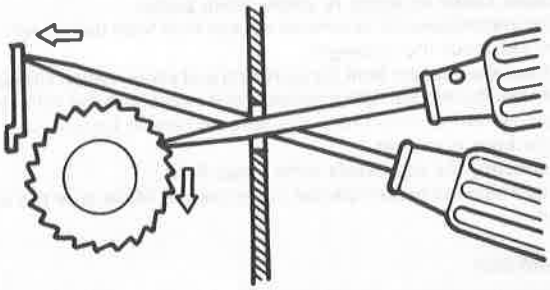
Rear brakes

Early style (two wheel cylinders)

6 Check to see that the parking brake is fully released. Block the front wheels then raise the rear end of the vehicle, supporting it securely on jackstands.
7 Remove the adjusting hole covers in the brake backing plate then rotate the wheel to ensure that there is no drag from the parking brake. If there is any drag, back off the parking brake adjusting nut just ahead of the equalizer.
8 Using a screwdriver or brake adjusting tool, turn the lower wheel cylinder adjusting wheel to lock the shoe against the drum.
9 Back off the adjusting screw six to eight notches so that the drum rotates without drag.
10 Repeat this procedure for the upper wheel cylinder and then for the opposite rear wheel.
11 After both rear brakes have been adjusted, install the adjusting



7.15a Insert a screwdriver through the hole in the backing plate and turn the adjuster star wheel in the direction shown until the brake shoes drag on the drum . . .



7.15b . . . then, using another screwdriver, push the pawl lever off the adjuster wheel and back it off 8 to 10 clicks

hole covers, If the parking brake adjusting nut was loosened, refer to Section 13 for the parking brake adjustment procedure.
12 Lower the vehicle to the ground and test drive the car to check for proper brake operation.

Later styles (all)

Refer to illustrations 7.15a and 7.15b

Note: *These rear brakes are self adjusting and require a manual adjustment only after replacement of the brake shoes.*
13 Check to see that the parking brake is fully released. Block the front wheels then raise the rear end of the vehicle, supporting it securely on jackstands.
14 Remove the adjusting hole covers in the brake backing plate then rotate the wheel to ensure that there is no drag from the parking brake. If there is any drag, back off the parking brake adjusting nut just ahead of the equalizer.
15 Using a screwdriver inserted through the correct hole (the slotted hole on two-wheel drive models and the rearmost hole on 4x4 models), turn the adjuster star-wheel until the drum is locked in place **(see illustration)**. Now, back off the star-wheel 8 to 10 notches so that the drum rotates freely. To accomplish this it will be necessary to disengage the pawl lever from the star wheel by inserting a thin screwdriver or punch through the other hole in the backing plate, pushing the pawl off the wheel **(see illustration)**.
16 Adjust the parking brake if necessary, referring to Section 13.
17 Lower the vehicle and road test it for proper braking operation before placing it into normal service.

8 Wheel cylinder — removal, overhaul and installation

Refer to illustrations 8.7a and 8.7b

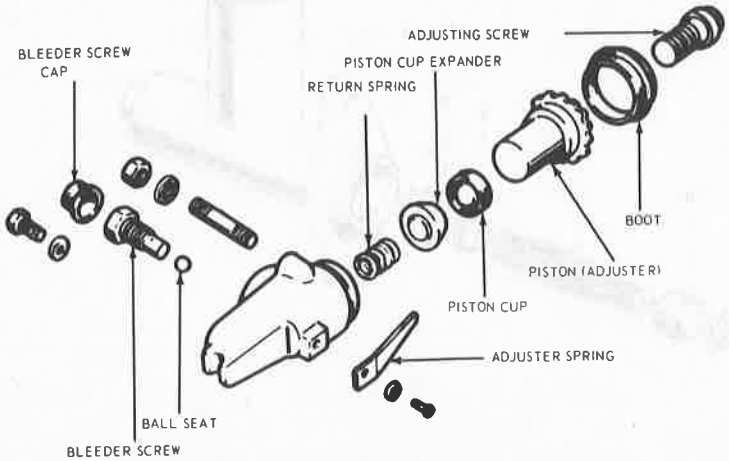
Note: *If an overhaul is indicated (usually because of fluid leakage or sticky operation) explore all options before beginning the job. New wheel cylinders are available, which make this job quite easy. If it's decided to rebuild the wheel cylinder, make sure that a rebuild kit is available before proceeding. Never overhaul only one wheel cylinder — always rebuild both of them at the same time.*

Removal

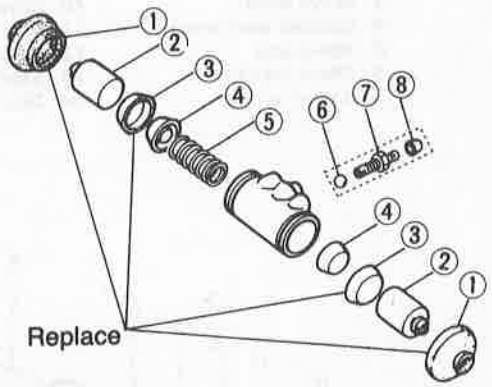
1 Raise the vehicle and support it securely on jackstands. Block the wheels to keep the vehicle from rolling.
2 Remove the brake shoe assembly (Section 5 or 6).
3 Remove all dirt and foreign material from around the wheel cylinder.
4 Disconnect the brake line using a flare nut wrench. Don't pull the brake line away from the wheel cylinder.
5 Remove the wheel cylinder mounting bolts.
6 Detach the wheel cylinder from the brake backing plate and place it on a clean workbench. Immediately plug the brake line to prevent fluid loss and contamination.

Overhaul

7 Remove the bleeder screw, piston cups, pistons, boots and spring assembly from the wheel cylinder body **(see illustrations)**.



8.7a Exploded view of a front wheel cylinder (1977 and earlier models)



8.7b Exploded view of a rear wheel cylinder

1 Dust boot
2 Piston
3 Piston cup
4 Expander
5 Spring
6 Cap
7 Bleeder screw
8 Steel ball

8 Clean the wheel cylinder with brake fluid, denatured alcohol or brake system cleaner. **Warning:** *Do not, under any circumstances, use petroleum based solvents to clean brake parts!*
9 Use compressed air to remove excess fluid from the wheel cylinder and to blow out the passages.
10 Check the cylinder bore for corrosion and score marks. Crocus cloth can be used to remove light corrosion and stains, but the cylinder must be replaced with a new one if the defects cannot be removed easily, or if the bore is scored.
11 Lubricate the new seals with brake fluid.
12 Assemble the brake cylinder components. Make sure the seal lips face in.

Installation

13 Place the wheel cylinder in position and install the bolts.
14 Connect the brake line and install the brake shoe assembly.
15 Bleed the brakes (Section 11).

9 Master cylinder — removal, overhaul and installation

Refer to illustrations 9.10, 9.11a, 9.11b and 9.14

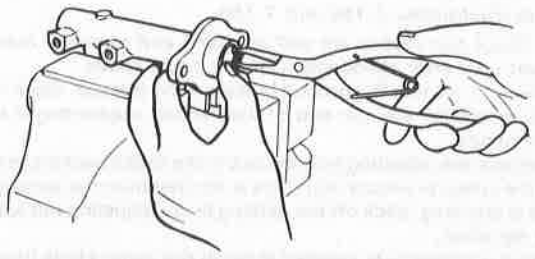
Note: *This procedure describes a dual master cylinder overhaul, although it also applies to the older, single piston models. Simply ignore the steps which do not apply, and refer to the appropriate exploded view illustration. Before deciding to overhaul the master cylinder, check on the availability and cost of a new or factory rebuilt unit and also the availability of a rebuild kit.*

Removal

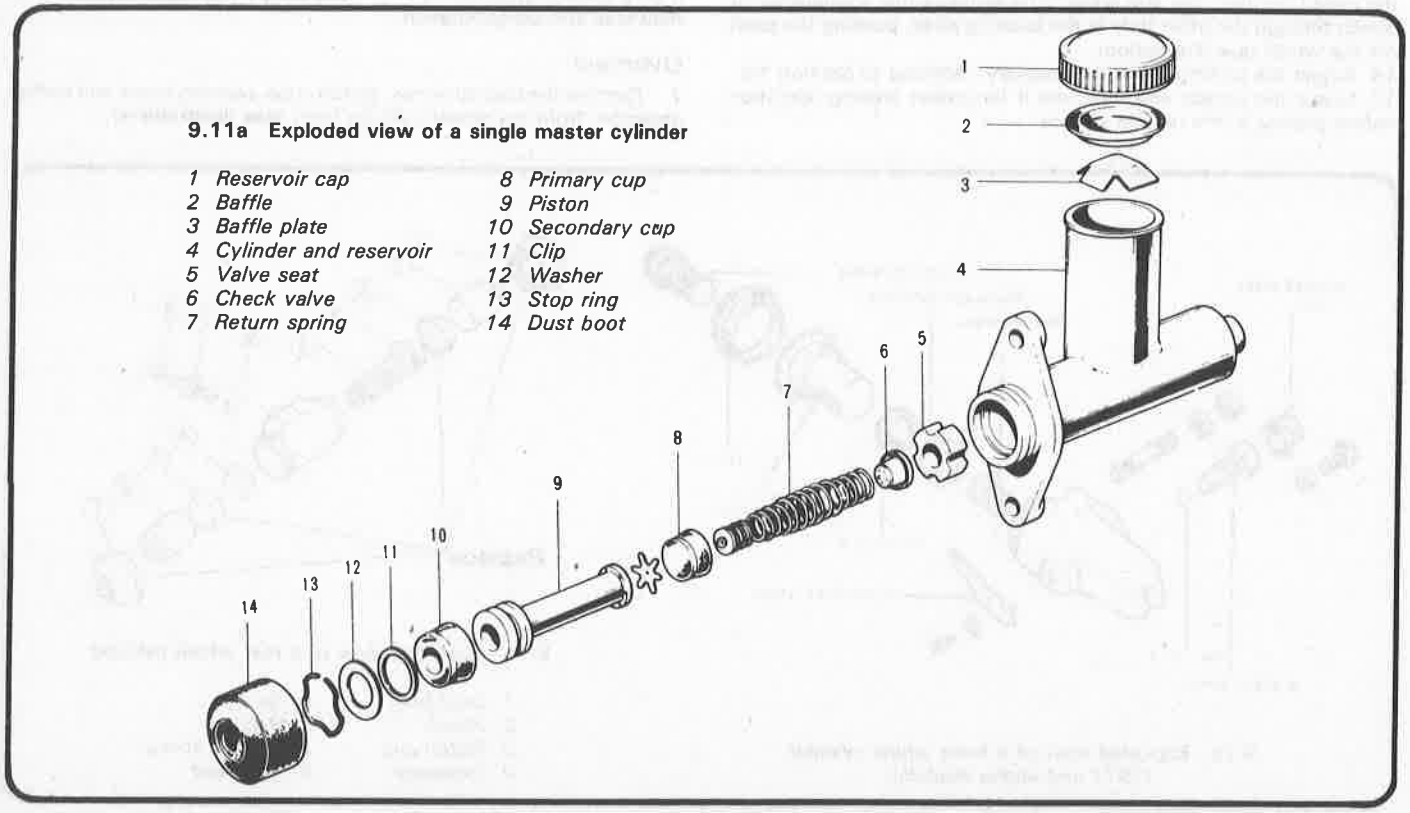
1 The master cylinder is located in the engine compartment, mounted to the power brake booster.
2 Remove as much fluid as you can from the reservoir with a syringe.
3 Place rags under the fluid fittings and prepare caps or plastic bags to cover the ends of the lines once they are disconnected. **Caution:** *Brake fluid will damage paint. Cover all body parts and be careful not to spill fluid during this procedure.*
4 Loosen the tube nuts at the ends of the brake lines where they enter the master cylinder. To prevent rounding off the flats on these nuts, the use of a flare nut wrench, which wraps around the nut, is preferred.
5 Pull the brake lines slightly away from the master cylinder and plug the ends to prevent contamination. On vehicles with a remotely mounted fluid reservoir, disconnect the feed hoses at the master cylinder and plug them.
6 Disconnect the electrical connector at the master cylinder (if equipped), then remove the nuts attaching the master cylinder to the power booster or firewall. Pull the master cylinder off the studs and out of the engine compartment. Again, be careful not to spill the fluid as this is done.

Overhaul

7 Before attempting the overhaul of the master cylinder, obtain the proper rebuild kit, which will contain the necessary replacement parts and also any instructions which may be specific to your model.
8 Inspect the reservoir or inlet grommet(s) for indications of leakage near the base of the reservoir (except fixed reservoir style). Remove the reservoir.
9 Place the cylinder in a vise and use a punch or Phillips screwdriver to fully depress the pistons until they bottom against the other end of the master cylinder. Hold the pistons in this position and remove the stop bolt on the side of the master cylinder. Remove the two outlet plugs and the copper gaskets.



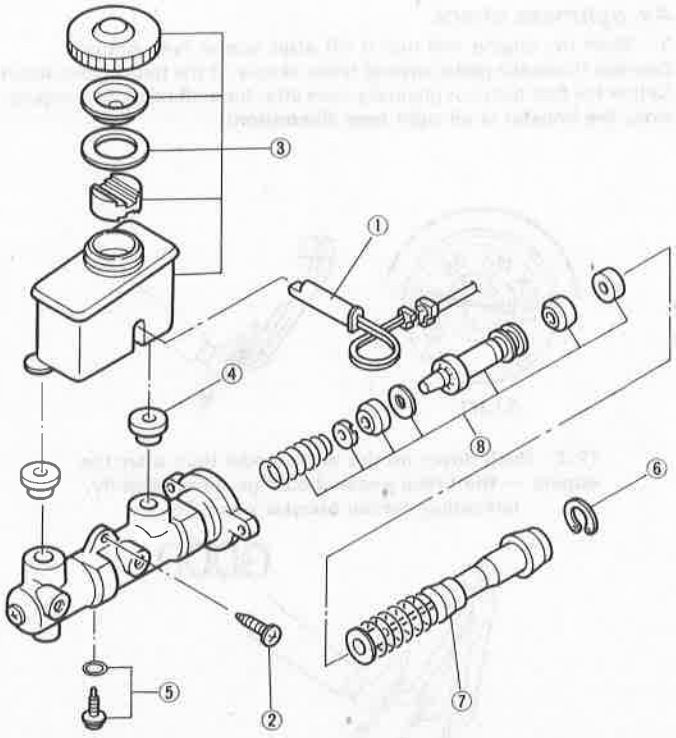
9.10 Push the pistons into the bore and remove the snap-ring



9.11a Exploded view of a single master cylinder

1 Reservoir cap
2 Baffle
3 Baffle plate
4 Cylinder and reservoir
5 Valve seat
6 Check valve
7 Return spring
8 Primary cup
9 Piston
10 Secondary cup
11 Clip
12 Washer
13 Stop ring
14 Dust boot

10 Depress the pistons once again, then carefully remove the snap-ring at the end of the master cylinder **(see illustration)**.
11 The internal components can now be removed from the cylinder bore **(see illustrations)**. Make a note of the proper order of the components so they can be returned to their original locations. **Note:** *The two springs are of different tension, so pay particular attention to their order.*
12 Carefully inspect the bore of the master cylinder. Any deep scoring or other damage will mean a new master cylinder is required.
13 Replace all parts included in the rebuild kit, following any instructions in the kit. Clean all reused parts with clean brake fluid or denatured alcohol. Do not use any petroleum-based cleaners. During assembly, lubricate all parts liberally with clean brake fluid. Be sure to tighten all fittings and connections to the specified torque.
14 Install a guide pin (such as the blunt end of a drill bit) into the stop bolt hole **(see illustration)**. Push the assembled components into the bore, bottoming them against the end of the master cylinder. Remove the guide pin and install the stop bolt.
15 Install the new snap-ring, making sure it is seated properly in the groove.
16 Before installing the new master cylinder it should be bench bled. Because it will be necessary to apply pressure to the master cylinder piston and, at the same time, control flow from the brake line outlets, it is recommended that the master cylinder be mounted in a vise, with the jaws of the vise clamping on the mounting flange.
17 Insert threaded plugs into the brake line outlet holes and snug them down so that there will be no air leakage past them, but not so tight that they cannot be easily loosened.
18 Fill the reservoir with brake fluid of the recommended type (see Chapter 1).
19 Remove one plug and push the piston assembly into the master cylinder bore to expell the air from the master cylinder. A large Phillips screwdriver can be used to push on the piston assembly.
20 To prevent air from being drawn back into the master cylinder the plug must be replaced and snugged down before releasing the pressure on the piston assembly.



9.11b Exploded view of a dual master cylinder

1 Fluid level sensor
2 Screw
3 Reservoir assembly
4 Grommets
5 Stop bolt
6 Snap-ring
7 Primary piston assembly
8 Secondary piston assembly

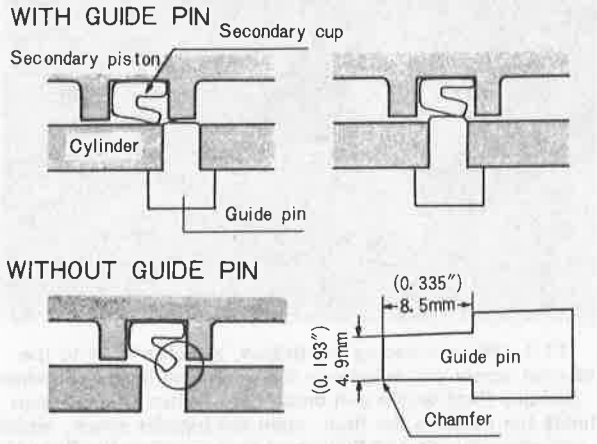
21 Repeat the procedure until only brake fluid is expelled from the brake line outlet hole. When only brake fluid is expelled, repeat the procedure with the other outlet hole and plug. Be sure to keep the master cylinder reservoir filled with brake fluid to prevent the introduction of air into the system.
22 Since high pressure is not involved in the bench bleeding procedure, an alternative to the removal and replacement of the plugs with each stroke of the piston assembly is available. Before pushing in on the piston assembly, remove the plug as described in Step 19. Before releasing the piston, however, instead of replacing the plug, simply put your finger tightly over the hole to keep air from being drawn back into the master cylinder. Wait several seconds for brake fluid to be drawn from the reservoir into the piston bore, then depress the piston again, removing your finger as brake fluid is expelled. Be sure to put your finger back over the hole each time before releasing the piston, and when the bleeding procedure is complete for that outlet, replace the plug and snug it before going on to the other port.

Installation

23 Install the master cylinder over the studs on the power brake booster and tighten the attaching nuts only finger tight at this time.
24 Thread the brake line fittings into the master cylinder. Since the master cylinder is still a bit loose, it can be moved slightly in order for the fittings to thread in easily. Do not strip the threads as the fittings are tightened.
25 Fully tighten the mounting nuts and the brake fittings.
26 Fill the master cylinder reservoir with fluid, then bleed the master cylinder (only if the cylinder has not been bench bled) and the brake system as described in Section 11. To bleed the cylinder on the vehicle, have an assistant pump the brake pedal several times and then hold the pedal to the floor. Loosen the fitting nut to allow air and fluid to escape. Repeat this procedure on both fittings until the fluid is clear of air bubbles. Test the operation of the brake system carefully before placing the vehicle in normal service.

10 Brake lines and hoses — inspection and replacement

1 About every six months the flexible hoses which connect the steel brake lines with the front and rear brakes should be inspected for cracks, chafing of the outer cover, leaks, blisters, and other damage (see Chapter 1).
2 Replacement steel and flexible brake lines are commonly available from dealer parts departments and auto parts stores. Do not, under any circumstances, use anything other than genuine steel lines or approved flexible brake hoses as replacement items.
3 When installing the brake line, leave at least 0.75 in (19 mm) clearance between the line and any moving or vibrating parts.
4 When disconnecting a hose and line, first remove the spring clip. Then, using a normal wrench to hold the hose and a flare-nut wrench to hold the tube, make the disconnection. Use the wrenches in the



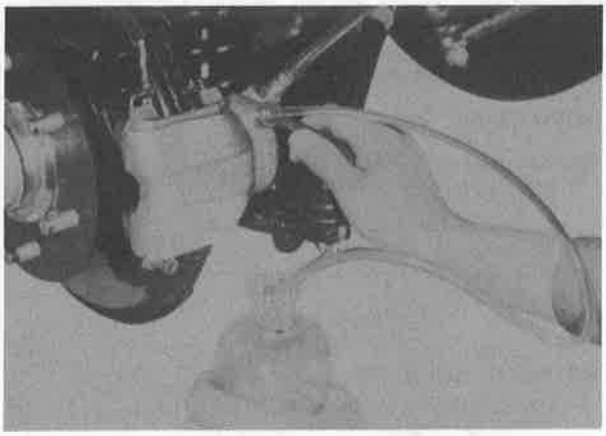
9.14 When installing the secondary piston assembly, install a guide pin into the stop bolt hole to keep the piston cup from catching on the edge of the hole

same manner when making a connection, then install a new clip. **Note:** *Make sure the tube passes through the center of its grommet.*
5 When disconnecting two hoses, use normal wrenches on the hose fittings. When connecting two hoses, make sure they are not bent, twisted or strained.
6 Steel brake lines are usually retained along their span with clips. Always remove these clips completely before removing a fixed brake line. Always reinstall these clips, or new ones if the old ones are damaged, when replacing a brake line, as they provide support and keep the lines from vibrating, which can eventually break them.
7 Remember to bleed the hydraulic system after replacing a hose or line.

11 Brake system — bleeding

Refer to illustration 11.7

1 If the brake system has air in it, operation of the brake pedal will be spongy and imprecise. Air can enter the brake system whenever any part of the system is dismantled or if the fluid level in the master cylinder reservoir runs low. Air can also leak into the system through a leak too slight to allow fluid to leak out. In this case, it indicates that a general overhaul of the brake system is required.
2 To bleed the brakes, you will need an assistant to pump the brake pedal, a supply of new brake fluid, an empty glass jar, a plastic or vinyl tube which will fit over the bleeder nipple, and a wrench for the bleeder screw.
3 There are five locations at which the brake system is bled; the master cylinder, the front brake calipers (or wheel cylinders) and the rear brake wheel cylinders. On later models, the rear brakes are bled at the left rear wheel cylinder only (there is no bleeder screw on the right side).
4 Check the fluid level at the master cylinder reservoir. Add fluid, if necessary, to bring the level up to the Full or Max mark. Use only the recommended brake fluid and do not mix different types. Never use fluid from a container that has been standing uncapped. You will have to check the fluid level in the master cylinder reservoir often during the bleed procedure. If the level drops too far, air will enter the system through the master cylinder.
5 Raise the vehicle and set it securely on jackstands.
6 Remove the bleeder screw cap from the wheel cylinder or caliper assembly that is being bled. If more than one wheel must be bled, start with the one farthest from the master cylinder.
7 Attach one end of the clear plastic or vinyl tube to the bleeder screw nipple and place the other end in the glass or plastic jar submerged in a small amount of clean brake fluid **(see illustration)**.



11.7 When bleeding the brakes, attach a hose to the bleeder screw and submerge the other end into a container partially filled with clean brake fluid. When the assistant holds the pedal to the floor, open the bleeder screw, which will allow the air and fluid to escape — when the flow of bubbles ceases, close the valve. Continue this process until no more air bubbles can be seen in the tube or container, then move on to the next wheel

8 Loosen the bleeder screw slightly, then tighten it to the point where it is snug yet easily loosened.
9 Have the asistant pump the brake pedal several times and hold it in the fully depressed position.
10 With pressure on the brake pedal, open the bleeder screw approximately one-half turn. As the brake fluid is flowing through the pedal, hold it in the fully depressed position, and loosen the bleeder screw momentarily. Do not allow the brake pedal to be released with the bleeder screw in the open position.
11 Repeat the procedure until no air bubbles are visible in the brake fluid flowing through the tube. Be sure to check the brake fluid level in the master cylinder reservoir while performing the bleeding operation.
12 Fully tighten the bleeder screw, remove the plastic or vinyl tube and install the bleeder screw cap.
13 Follow the same procedure to bleed the other wheel cylinder or caliper assemblies.
14 To bleed the master cylinder, have the assistant pump and hold the brake pedal. Momentarily loosen the brake line fittings, one at a time, where they attach to the master cylinder. Any air in the master cylinder will escape when the fittings are loosened. Brake fluid will damage painted surfaces, so use paper towels or rags to cover and protect the areas around the master cylinder.
15 Check the brake fluid level in the master cylinder to make sure it is adequate, then test drive the vehicle and check for proper brake operation.

12 Power brake booster — check, removal and installation

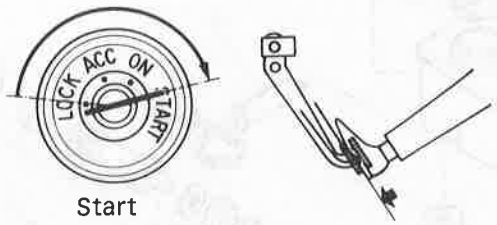
Refer to illustrations 12.2, 12.3, 12.7 and 12.14

Operating check

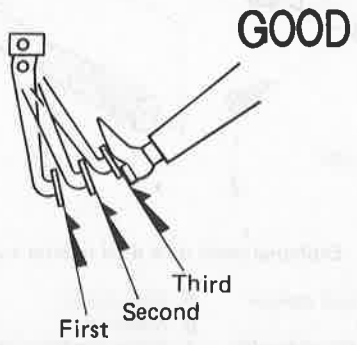
1 Depress the brake pedal several times with the engine off and make sure that there is no change in the pedal reserve distance.
2 Depress the pedal and start the engine. If the pedal goes down slightly, operation is normal **(see illustration)**.

Air tightness check

3 Start the engine and turn it off after one or two minutes. Depress the brake pedal several times slowly. If the pedal goes down farther the first time but gradually rises after the second or third depression, the booster is air tight **(see illustration)**.



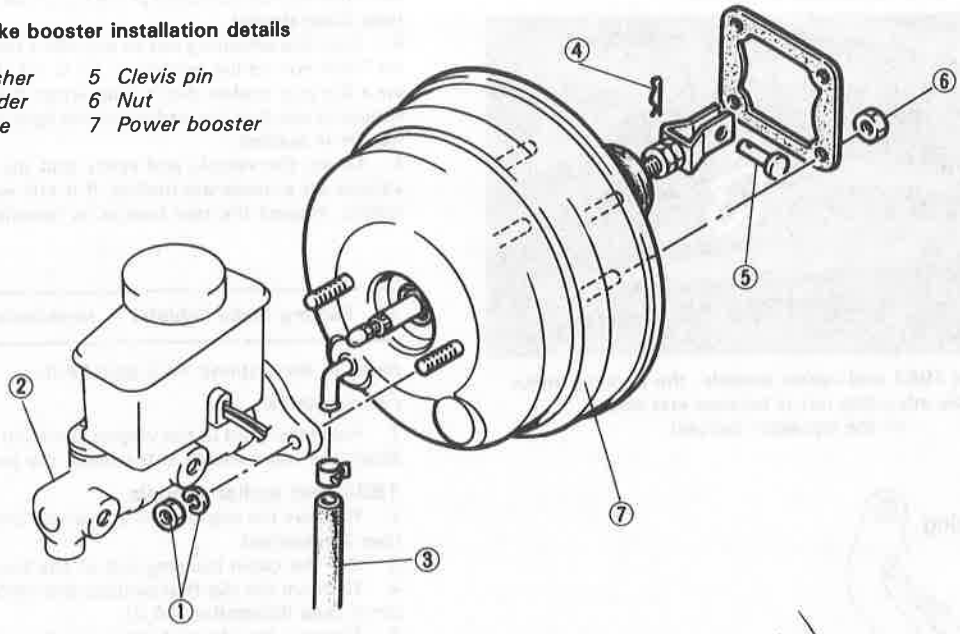
12.2 Push down on the brake pedal then start the engine — the brake pedal should go down slightly, indicating normal booster operation



12.3 With the engine turned off, the pedal should build up with each pump if the booster is functioning properly

12.7 Power brake booster installation details

1 Nut and washer
2 Master cylinder
3 Vacuum hose
4 Cotter pin
5 Clevis pin
6 Nut
7 Power booster



4 Depress the brake pedal while the engine is running, then stop the engine with the pedal depressed. If there is no change in the pedal reserve travel after holding the pedal for 30 seconds, the booster is air tight.

Removal

5 Power brake booster units should not be disassembled. They require special tools not normally found in most automotive repair stations or shops. They are fairly complex and because of their critical relationship to brake performance it is best to replace a defective booster unit with a new or rebuilt one.

6 To remove the booster, first remove the brake master cylinder as described in Section 9.

7 Locate the pushrod clevis connecting the booster to the brake pedal **(see illustration)**. This is accessible from the interior in front of the driver's seat.

8 Remove the clevis pin retaining clip with pliers and pull out the pin.

9 Holding the clevis with pliers, disconnect the clevis locknut with a wrench. The clevis is now loose.

10 Disconnect the hose leading from the engine to the booster. Be careful not to damage the hose when removing it from the booster fitting.

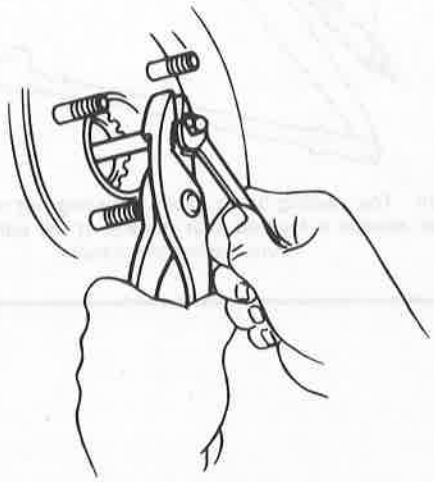
11 Remove the four nuts and washers holding the brake booster to the firewall. You may need a light to see these, as they are up under the dash area.

12 Slide the booster straight out from the firewall until the studs clear the holes and pull the booster, brackets and gaskets from the engine compartment area.

Installation

13 Installation procedures are basically the reverse of those for removal. Tighten the clevis locknut and booster mounting nuts to the specified torque figures.

14 If the power booster unit is being replaced, the clearance between the master cylinder piston and the pushrod in the booster must be measured. Using a depth micrometer or vernier calipers, measure the distance from the seat (recessed area) in the master cylinder to the master cylinder mounting flange. Next, measure the distance from the end of the booster pushrod to the mounting face of the booster where the master cylinder mounting flange seats. Subtract the two measurements to get the clearance. If the clearance is more or less than specified, turn the adjusting screw on the end of the power booster pushrod until the clearance is within the specified limit **(see illustration)**.



12.14 To adjust the length of the booster pushrod, hold the serrated portion of the rod with a pair of pliers and turn the adjusting screw in or out, as necessary, to achieve the desired setting

15 A second method to measure the pushrod-to-piston clearance is to install the master cylinder on the power booster with a small piece of modeling clay placed on the end of the pushrod. Remove the master cylinder and measure the resulting impression left in the clay. Again adjust as needed to meet the specification. This method may require several trial-and-error fits to reach the proper clearance.

16 After the final installation of the master cylinder and brake hoses and lines, the brake pedal height and free play must be adjusted and the system must be bled. See the appropriate Sections of this Chapter for the procedures.

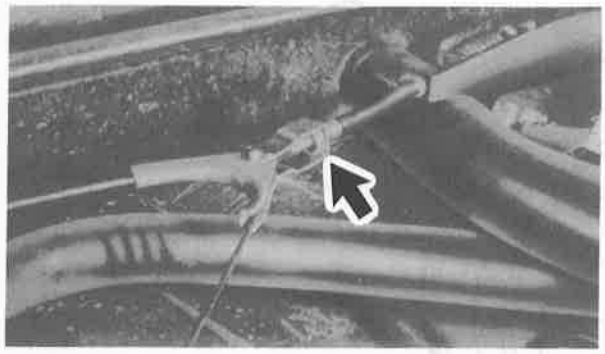
13 Parking brake cable — adjustment

Refer to illustrations 13.3a and 13.3b

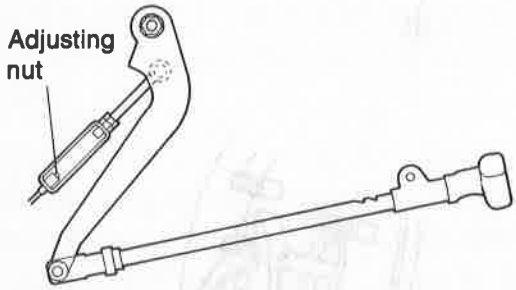
1 If the parking brake doesn't keep the vehicle from rolling when the handle is applied 5 to 10 clicks on 1984 and earlier models, or 11 to 13 clicks on later models, adjust the cable.

2 Drive the vehicle in reverse and apply the brakes a few times to

activate the automatic adjusters. Raise the vehicle and support it securely on jackstands. Check to see that the brake shoes are not dragging on the drums as the wheels are turned. If they do drag, back off the adjuster wheels as described in Section 7.



13.3a On 1984 and earlier models, the parking brake cable adjusting nut is located just ahead of the equalizer (arrow)



13.3b The parking brake cable adjusting nut on 1986 and later models is located near the top of the parking brake lever, above the handle

3 Locate the cable adjusting nut for your particular model. On 1984 and earlier models, the adjusting nut is located at the cable equalizer (where the front and rear cables meet). On 1986 and later models, the adjusting nut is located at the top of the parking brake handle linkage **(see illustrations)**.

4 Turn the adjusting nut to provide a handle travel of 5 to 10 clicks on 1984 and earlier models or 11 to 13 clicks on later models. Make sure the rear brakes don't drag when the parking brake is released. Check to see that the parking brake light on the dash glows when the handle is applied.

5 Lower the vehicle and verify that the parking brake will hold the vehicle on a moderate incline. If it still won't keep the vehicle from rolling, inspect the rear brakes as described in Chapter 1.

14 Parking brake cable(s) — replacement

Refer to illustrations 14.2 and 14.8

Front cable

1 Raise the front of the vehicle and support it securely on jackstands. Block the rear wheels and release the parking brake.

1984 and earlier models

2 Remove the clip and pin at the fork joint just ahead of the equalizer **(see illustration)**.

3 Pry the cable housing out of the frame bracket.

4 Remove the clip that secures the cable housing to the lower dash panel **(see illustration 14.2)**.

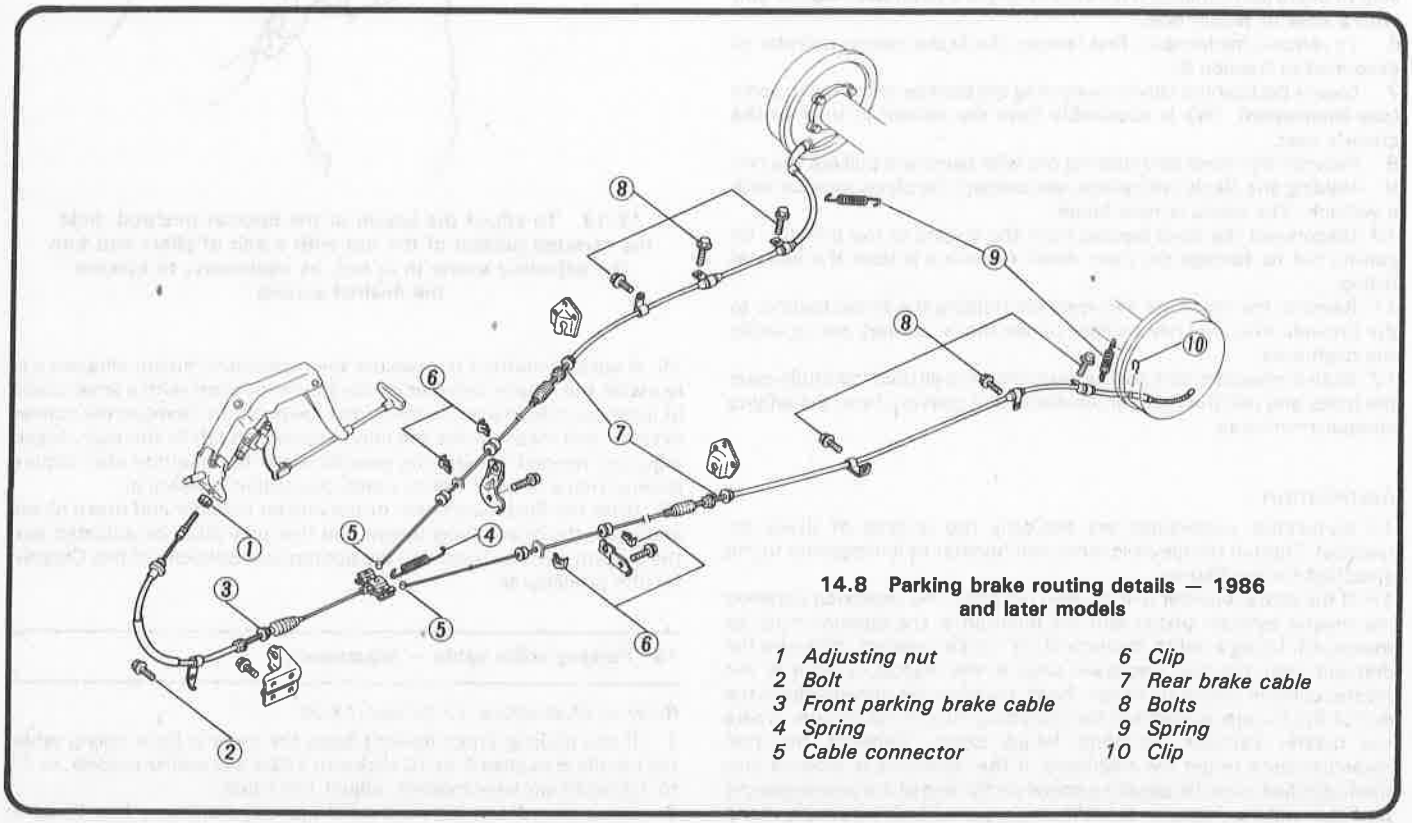
5 Remove the clip and clevis pin that secures the cable end to the lever, then remove the cable through the lower dash panel.

6 Installation is the reverse of the removal procedure. After the job is completed, adjust the cable following the procedure descibed in Section 13.

1986 and later models

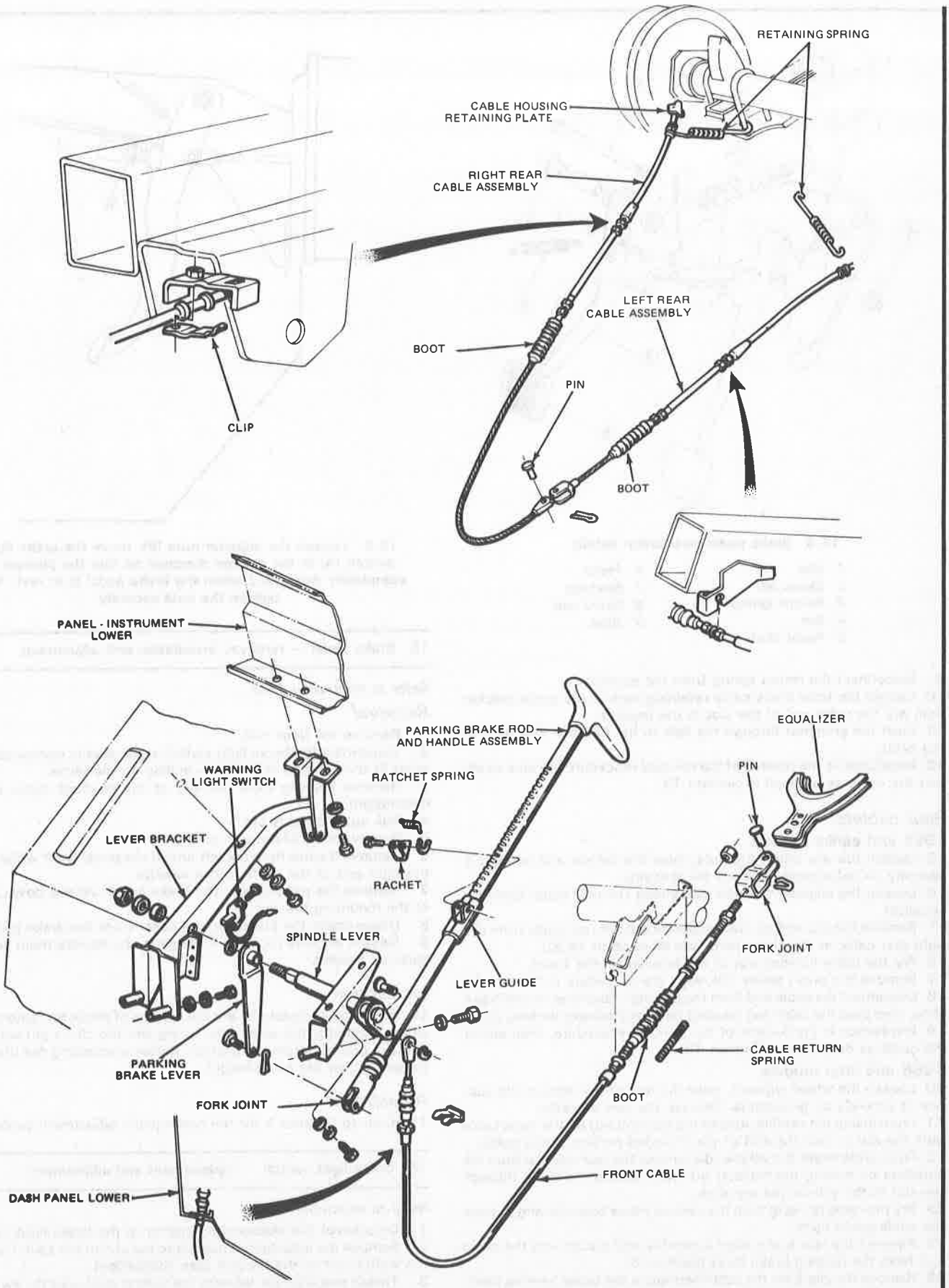
7 Remove the cable adjuster nut **(see illustration 13.3b)**.

8 From under the vehicle, disconnect the two rear cables from the equalizer by turning them 90°, aligning the cables with the slots in the equalizer and passing them through **(see illustration)**.

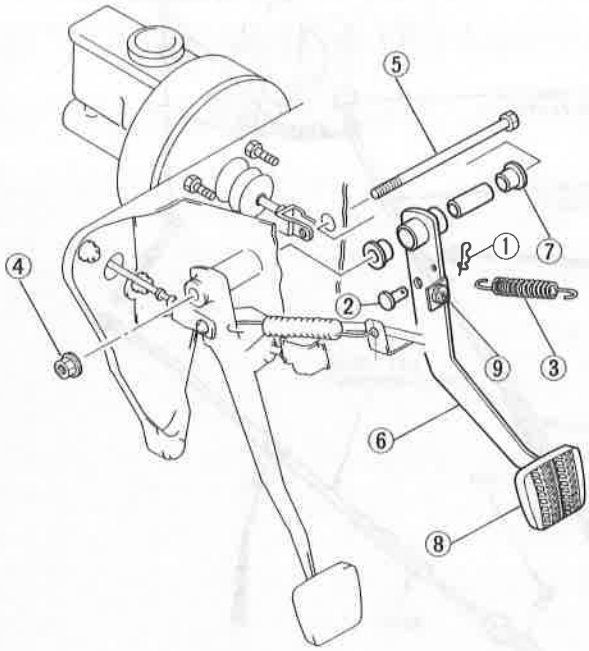


14.8 Parking brake routing details — 1986 and later models

1 Adjusting nut
2 Bolt
3 Front parking brake cable
4 Spring
5 Cable connector
6 Clip
7 Rear brake cable
8 Bolts
9 Spring
10 Clip



14.2 Parking brake cable routing details — 1984 and earlier models



15.3 Brake pedal installation details

1 Clip
2 Clevis pin
3 Return spring
4 Nut
5 Pedal shaft
6 Pedal
7 Bushing
8 Pedal pad
9 Stop

9 Disconnect the return spring from the equalizer.
10 Loosen the front brake cable retaining nuts at the guide bracket then pry the cable out of the slot in the bracket.
11 Push the grommet through the hole in the floorpan and remove the cable.
12 Installation is the reverse of the removal procedure. Be sure to adjust the cable as outlined in Section 13.

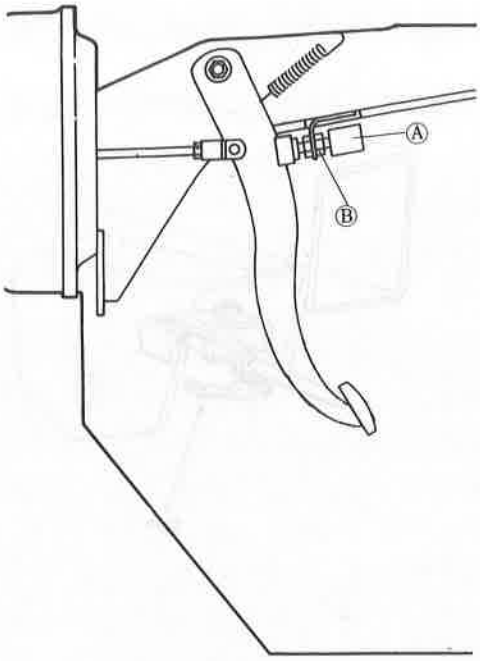
Rear cable(s)

1984 and earlier models

13 Loosen the rear wheel lug nuts, raise the vehicle and support it securely on jackstands. Remove the wheel(s).
14 Loosen the adjuster nut and disconnect the rear cable from the equalizer.
15 Remove the clip and pin then separate the left rear cable from the right rear cable at the clevis joint **(see illustration 14.2)**.
16 Pry the cable housing out of the bracket on the frame.
17 Remove the brake shoes following the procedure in Section 6.
18 Disconnect the cable end from the parking brake lever on the brake shoe, then pass the cable and housing through the brake backing plate.
19 Installation is the reverse of the removal procedure, then adjust the cable as described in Section 13.

1986 and later models

20 Loosen the wheel lug nuts, raise the rear of the vehicle and support it securely on jackstands. Remove the rear wheel(s).
21 From inside the vehicle, loosen the adjuster nut on the front cable until the nut is near the end of the threaded portion of the cable.
22 From underneath the vehicle, disconnect the rear cable(s) from the equalizer by turning the cable(s) 90° and passing the cable through the slot in the side of the equalizer.
23 Pry the cable housing from the various frame brackets and remove the cable guide bolts.
24 Remove the rear brake shoe assembly and disconnect the cable end from the parking brake lever (Section 6).
25 Remove the clip from the cable housing at the brake backing plate. Pass the cable through the backing plate.
26 Installation is the reverse of the removal procedure. Adjust the cable as described in Section 13.



16.2 Loosen the adjuster nuts (B), move the brake light switch (A) in the desired direction so that the plunger is completely depressed when the brake pedal is at rest, then tighten the nuts securely

15 Brake pedal — removal, installation and adjustment

Refer to illustration 15.3

Removal

1 Remove the floor mat.
2 Disconnect the brake light switch at the plastic connector. Pull it apart at the junction rather than pulling on the wires.
3 Remove the clip from the end of the pushrod clevis pin **(see illustration)**.
4 Pull out the clevis pin.
5 Remove the pedal return spring.
6 Remove the nut from the left end of the pedal shaft while holding the right end of the shaft with a wrench.
7 Remove the pedal shaft. The brake pedal will pull down and out of the mounting bracket.
8 Disassemble the bushings and collar from the brake pedal.
9 Inspect all parts for wear or damage and replace them with new parts as needed.

Installation

10 Installation procedures are the reverse of those for removal. Coat all the bushings, the collar, the spring and the clevis pin with multi-purpose grease before installation. Before connecting the brake light switch, adjust the pedal height.

Adjustment

11 Refer to Chapter 1 for the brake pedal adjustment procedure.

16 Brake light switch — replacement and adjustment

Refer to illustration 16.2

1 Disconnect the electrical connector at the brake light switch.
2 Remove the adjuster nut nearest to the end of the switch and slide the switch out of the bracket **(see illustration)**.
3 Thread one adjuster nut onto the switch and insert the switch into the bracket. Install the second nut onto the switch and adjust the switch so that the brake lights come on when the pedal is slightly depressed. Tighten the nuts securely and connect the electrical connector.