

Chapter 9 Brakes

Contents

Brake pads — removal, inspection and installation	2	Hydraulic system — bleeding	9
Brake pedal — adjustment	12	Master cylinder — removal and installation	5
Caliper — removal and installation	3	Parking brake — adjustment	10
Disc brake rotor — removal and installation	4	Vacuum servo booster unit — general information	
General information	1	and testing	6
Hydraulic brake hose and lines — inspection		Vacuum servo booster unit — removal and installation	7
and replacement	8	Stop light switch — removal, installation and adjustment	11

Specifications

Recommended brake fluid	Dot 3
Brake pedal	
free height	
automatic transmission	184 to 194 mm (7.24 to 7.64 in)
manual transmission	182 to 192 mm (7.17 to 7.56 in)
depressed height	
1984 thru 1986	90 mm (3.54 in) or more
1987 on	80 mm (3.15 in) or more
stop lamp switch clearance	0.3 to 0.0 mm (0.012 to 0.039 in)
ASCD switch clearance	0.3 to 1.0 mm (0.012 to 0.039 in)
free play	.10 to 3.0 mm (0.039 to 0.118 in)

Torque specifications

	Kg-m	Ft-lbs
Brake hose connector to caliper	1.7 to 2.0	12 to 14
Brake pedal		
input rod lock nut	1.6 to 2.2	12 to 16
fulcrum bolt nut	3.1 to 4.1	22 to 30
stop lamp and ASCD switch	1.2 to 1.5	9 to 11
Master cylinder nut	0.8 to 1.1	5.8 to 8.0
Brake booster nut	0.8 to 1.1	5.8 to 8.0
Caliper		
torque member fixing bolt		
1984 thru 1986	7.3 to 9.9	53 to 72
1987 on	3.9 to 5.3	28 to 38
pin bolt		
1984 thru 1986	2.2 to 3.2	16 to 23
1987 on	3.2 to 4.2	23 to 30
air bleeder	0.7 to 0.9	5.1 to 6.5
Emergency brake		
lever retaining bolts	1.6 to 2.1	12 to 15
cable adjuster locking nut	0.32 to 0.44	2.3 to 3.2
front cable retaining bolts	0.8 to 1.1	5.8 to 8.0

1 General information

Refer to illustration 1.1

1 The braking system in the 300ZX is a split system design (see illustration). It incorporates two separate circuits; one for the front brakes and one for the rear brakes. With this system if one circuit fails, the other circuit will still function.

2 The master cylinder is designed for the split system and incorporates a primary piston for one circuit and a secondary piston for the other.

3 A vacuum servo unit is used which draws vacuum from the intake manifold to add power assistance to the normal brake pressure.

4 A proportioning valve inside the master cylinder regulates the fluid pressure in the brake lines so that all wheels receive equal pressure.

5 All four wheels are equipped with disc brakes. These consist of a rotor which is attached to the axle and wheel. Around the rotor is mounted a stationary caliper assembly which houses two hydraulically-operated disc brake pads. The inner pad is mounted to a piston facing the inner surface of the rotor, while the outer pad is mounted either to a moveable yoke or to the caliper body so that it faces the outer surface of the rotor. When the brake pedal is applied, brake fluid

pressure forces both pads against the rotor.

6 The rear brakes are also equipped with cable-operated parking brake mechanisms, which lock the rear pads against their rotors.

7 After completing any operation involving the dismantling of any part of the brake system always test drive the car to check for proper braking performance before resuming normal driving. When testing the brakes, perform the tests on a clean, dry, flat surface. Conditions other than these can lead to inaccurate test results. Test the brakes at various speeds with both light and heavy pedal pressure. The car should brake evenly without pulling to one side or the other.

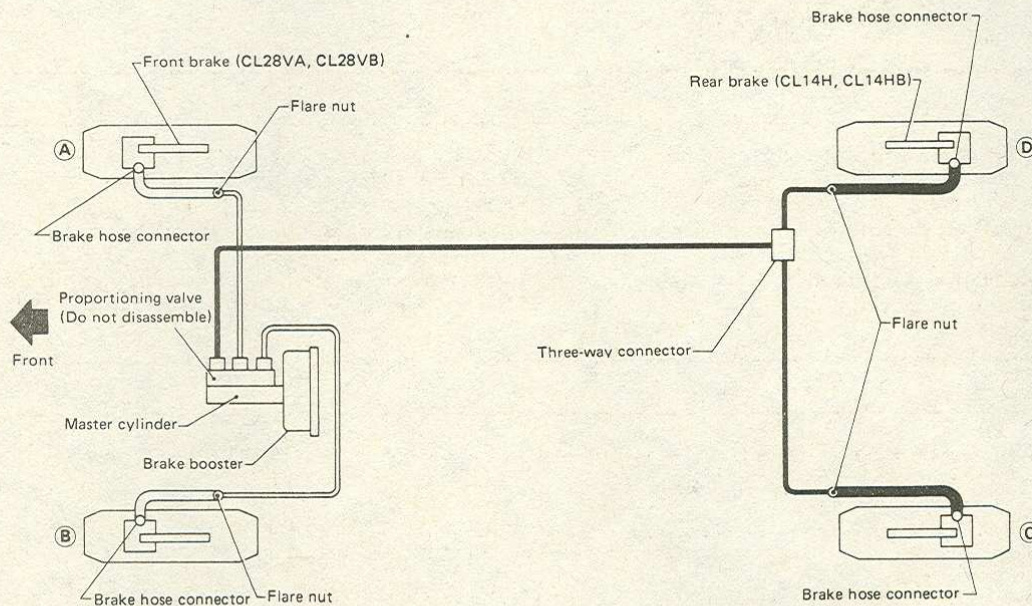
2 Brake pads — removal, inspection and installation

Refer to illustrations 2.2a, 2.2b, 2.3, 2.4, 2.9, 2.10, 2.11, 2.12, 2.17, 2.18, 2.19, 2.20, 2.21, 2.24, 2.26, 2.27 and 2.28

Front pad replacement

1 Raise the vehicle and support it securely on jackstands. Remove the front wheels.

2 Remove the lower pin retaining bolt from the front brake caliper (see illustrations).

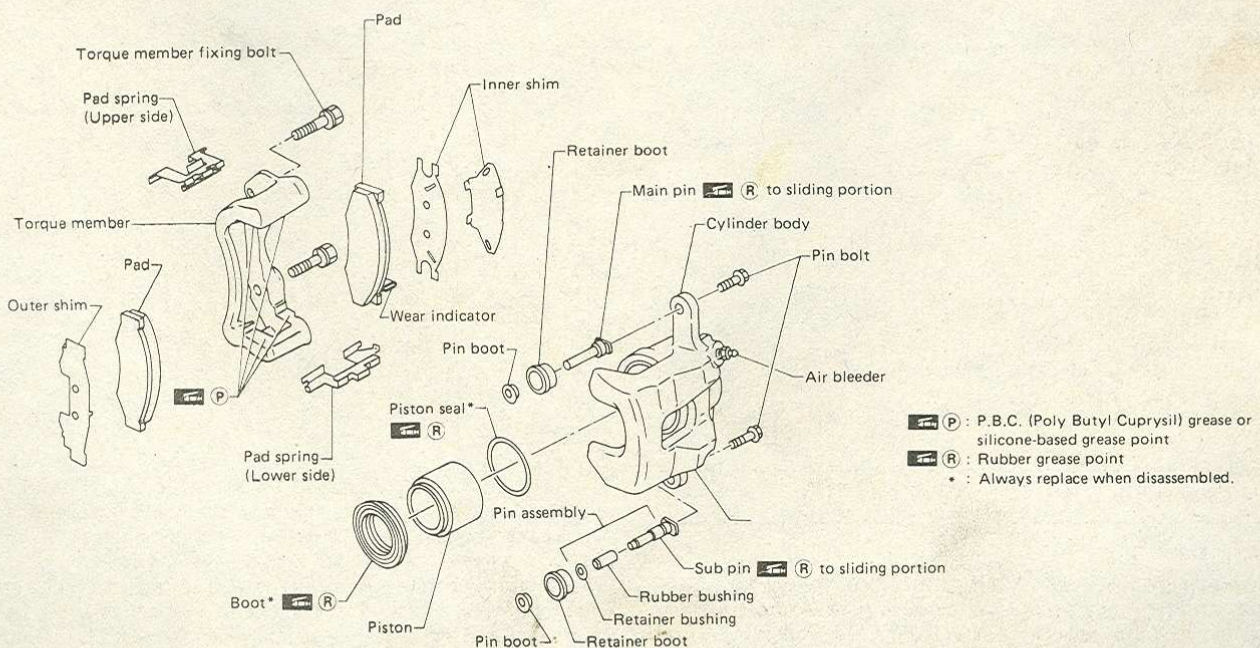


WARNING:

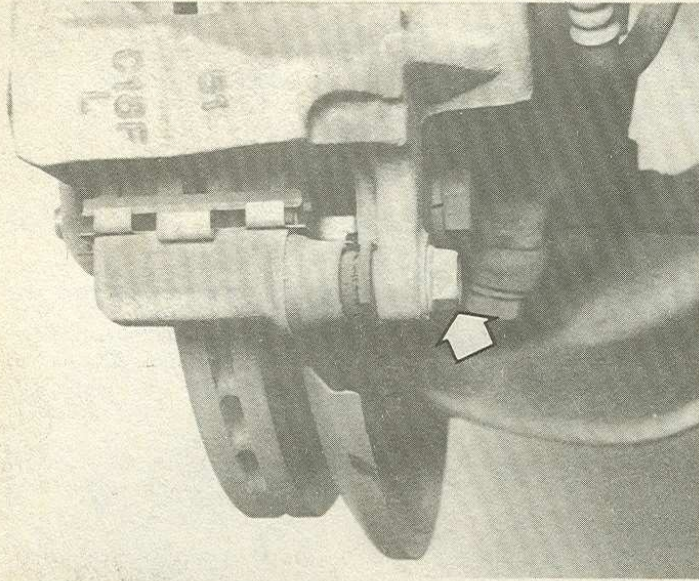
Clean pad and shoe dust using a dust collector after cleaning with waste cloth.

Primary line
Secondary line

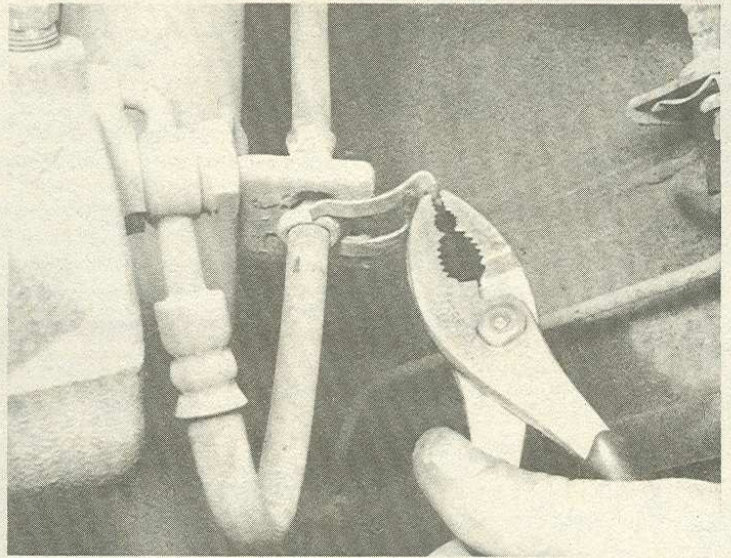
1.1 The 300ZX is equipped with a split braking hydraulic system



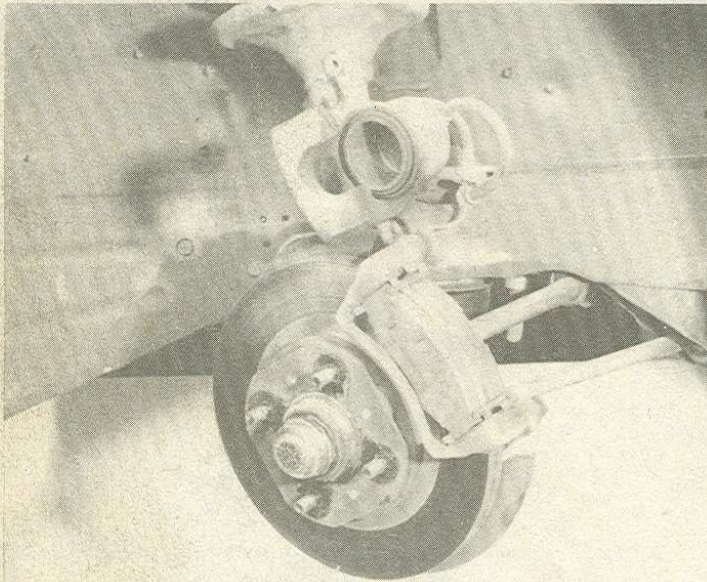
2.2a Exploded view of the front disc brake caliper



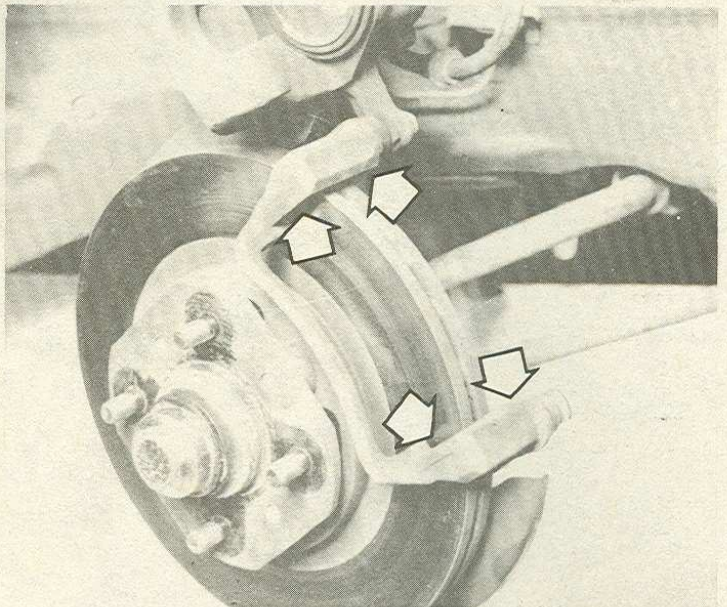
2.2b Remove the caliper lower pin retaining bolt (arrow)



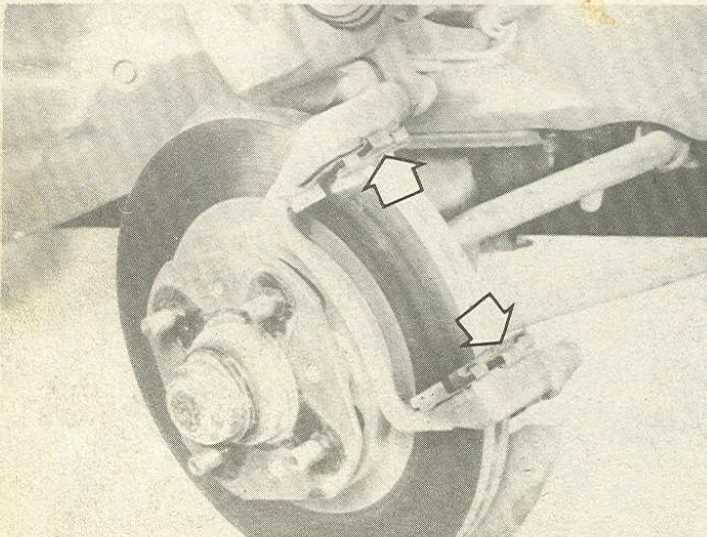
2.3 Disconnect the brake line hose retaining spring clip to allow enough hose slack for the caliper to swing up



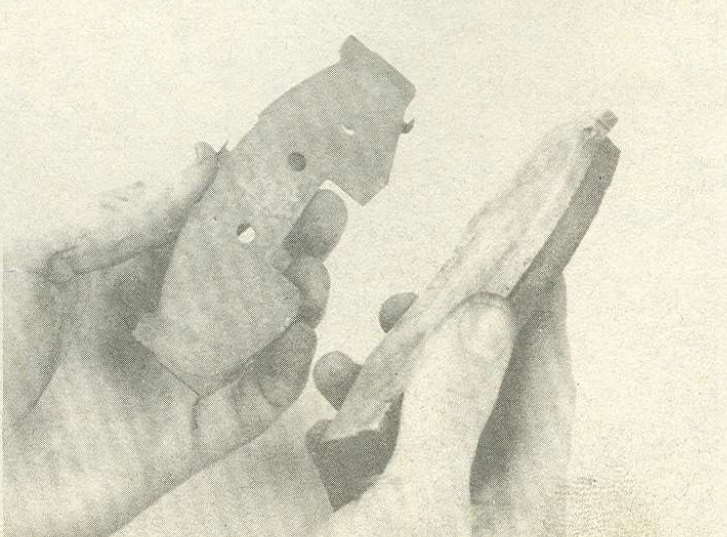
2.4 Pivot the caliper body up to gain access to the brake pads



2.9 Arrows indicate the contact surfaces requiring silicone-based grease

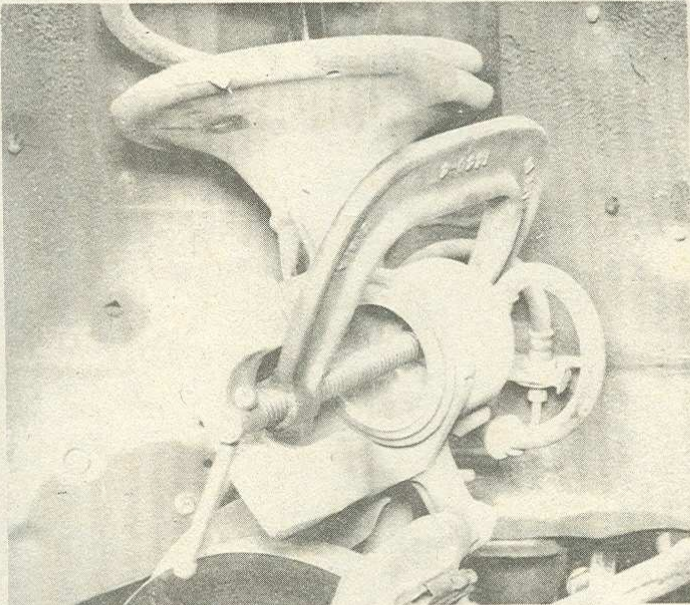


2.10 Install pad retainers (arrows) onto the torque member



2.11 Put the pad shims onto the pads before installing the pads

- 3 Remove the brake line retaining clip at the hose bracket located on the strut (see illustration). Remove the hose from the bracket. This will allow enough hose slack for the caliper to swing up.
- 4 Lift the caliper body upward to allow access to the brake pads (see illustration).
- 5 Remove the inner and outer shims and note their installed positions.
- 6 Lift out the brake pads. **Note:** After removing the pads, do not depress the brake pedal, as this will force the piston out of the cylinder.
- 7 If the pads are glazed, damaged, fouled with oil, grease or worn beyond the limit (see Specifications), they should be replaced. **Note:** Always replace all four pads on the axle (two in each brake assembly) at the same time, and do not mix different pad materials.
- 8 Prior to installation, use brake fluid to clean the end of the piston and the pin bolts. Do not use mineral based solvents.
- 9 Before installation of the pad retainers raise the cylinder body and apply a silicone-based grease to the contact surfaces between the torque member and the pads (see illustration). During installation, be careful not to allow grease to get on the friction surfaces of the pads.
- 10 Reinstall the retainers before installing the pads (see illustration).
- 11 Install the the pad shims onto the pads before installing them in the caliper (see illustration). Install the pads in the caliper. **Caution:**



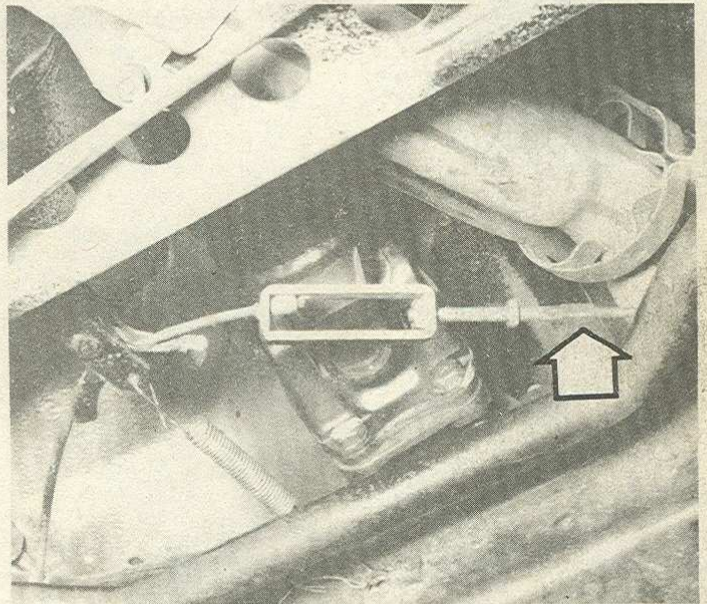
2.12 Use a C-clamp to compress the piston

Always replace the shims when replacing the pads.

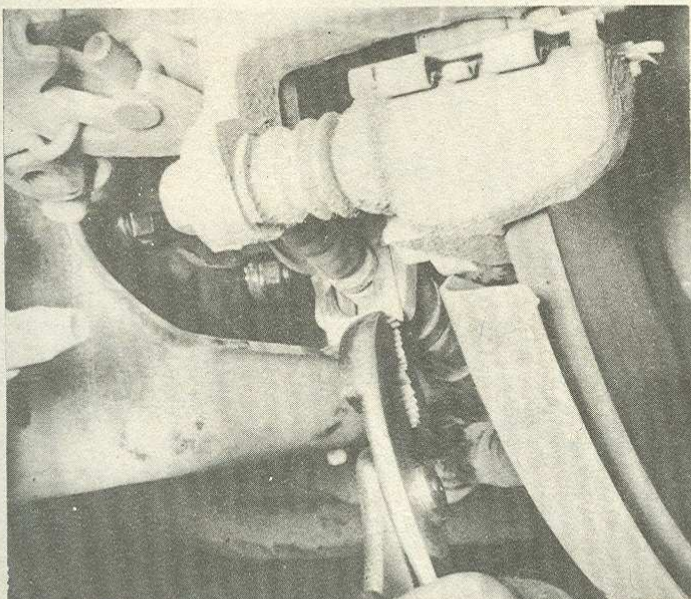
- 12 Use a small C-clamp to compress the piston (see illustration). **Caution:** Make sure the reservoir fluid level will allow the piston to be compressed without overflowing the reservoir.
- 13 Lower the caliper body and install the lower pin bolt, tightening it to specifications.
- 14 Depress the brake pedal several times to settle the pads into their proper positions.
- 15 Remove the jackstands and lower the vehicle after reinstalling the wheels.

Rear pad replacement

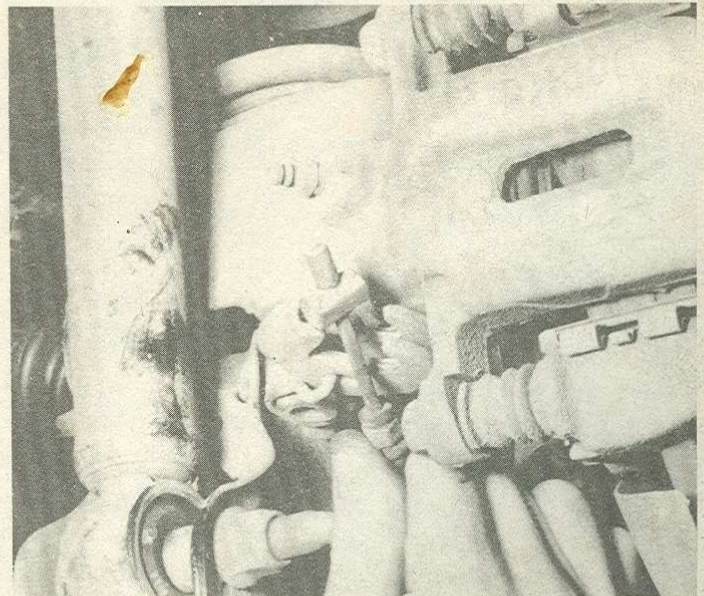
- 16 Raise the vehicle and support it securely on jackstands.
- 17 Loosen the emergency brake cable at the adjusting turnbuckle (see illustration) located in front of the differential carrier housing.
- 18 Remove the cable retaining spring clip located on the bottom of the caliper (see illustration).
- 19 Remove the emergency brake cable end from the retaining bracket by pushing the actuating arm back and sliding the cable end from the lever (see illustration).



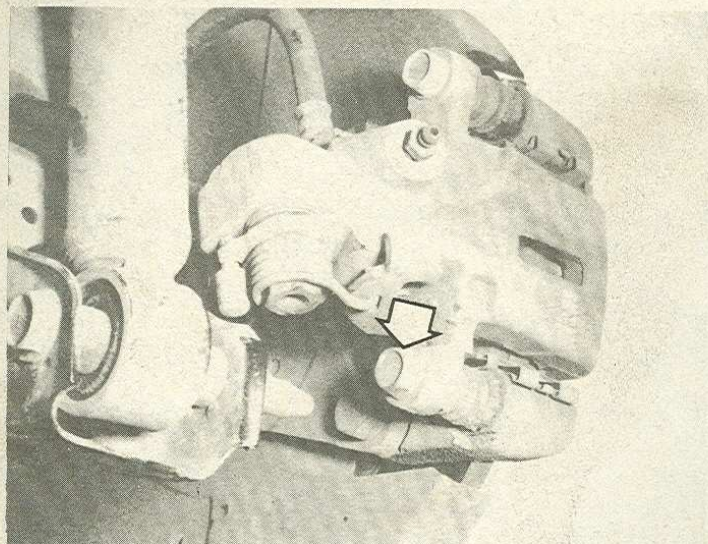
2.17 Loosen the emergency cable adjusting bolt to release tension from the cable



2.18 Use pliers to remove the cable retaining spring clip



2.19 Push the actuating arm back and lift the cable end from the lever



2.20 Remove the lower retaining pin bolt (arrow) to allow the caliper to be raised

20 Remove the lower caliper retaining pin (see illustration) and raise the caliper. **Note:** Due to the short length of the hydraulic brake hose the caliper will not flip all the way up, but will go up enough to allow pad removal.

21 Remove the pads with the shims attached (see illustration).

22 Lift out the pad retainers.

23 Clean the components with brake fluid and let them dry.

24 Before installation of the pad retainers raise the cylinder body and apply a silicone-based grease to the contact surfaces between the torque member and the pads (see illustration). During installation, be careful not to allow grease to get on the friction surfaces of the pads.

25 Examine the pads for wear and condition.

26 Install the pad retainers (see illustration).

27 Retract the piston into the cylinder body by using needle nose pliers to turn the piston clockwise until the pad has enough room to be installed (see illustration).

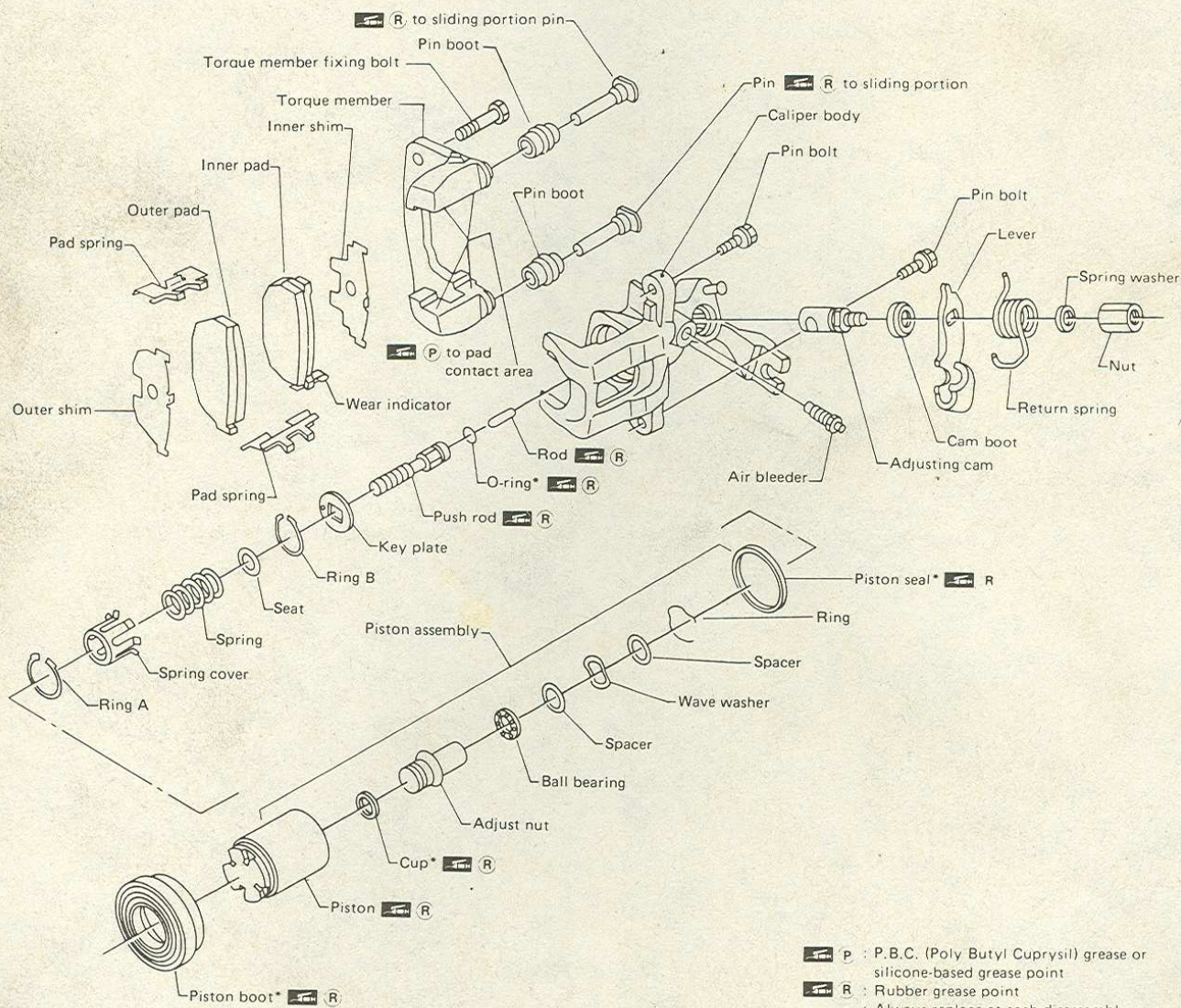
28 Install the shims onto the pads (see illustration). **Note:** Always replace the shims when replacing the pads.

29 Reinstall the pads and lower the caliper.

30 Install the lower caliper retaining pin.

31 Install the emergency cable into its retaining bracket and secure it with the spring clip.

32 Push the emergency brake actuating lever back and insert the emergency cable end into its recess.



2.21 Exploded view of the rear disc brake caliper

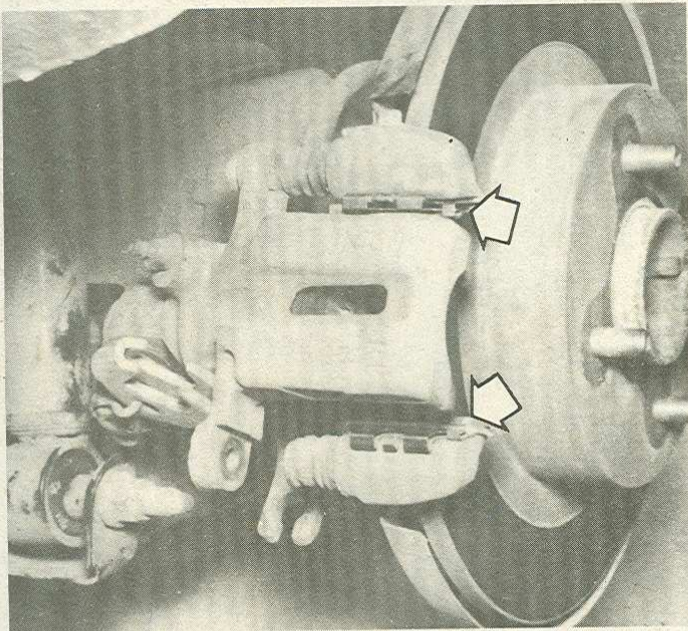
- 33 Depress the brake pedal several times to settle the pads into their proper positions.
- 34 Adjust the emergency brake cable (Section 10).
- 35 Remove the jackstands and lower the vehicle.

3 Caliper — removal and installation.

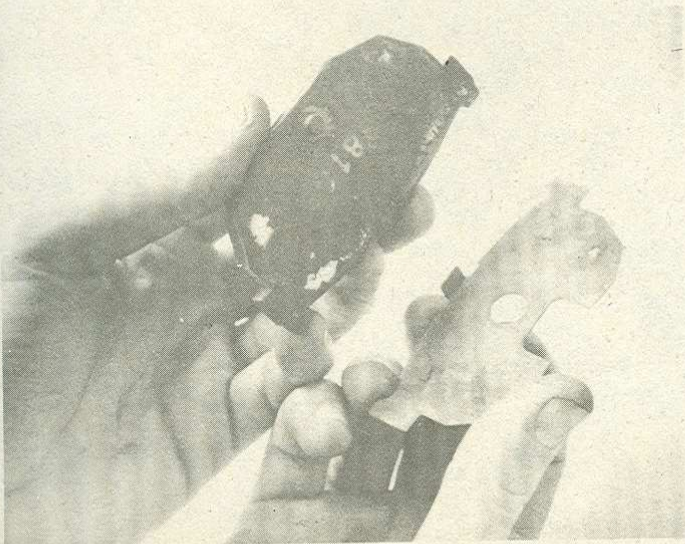
Refer to illustrations 3.3 and 3.13

Front caliper

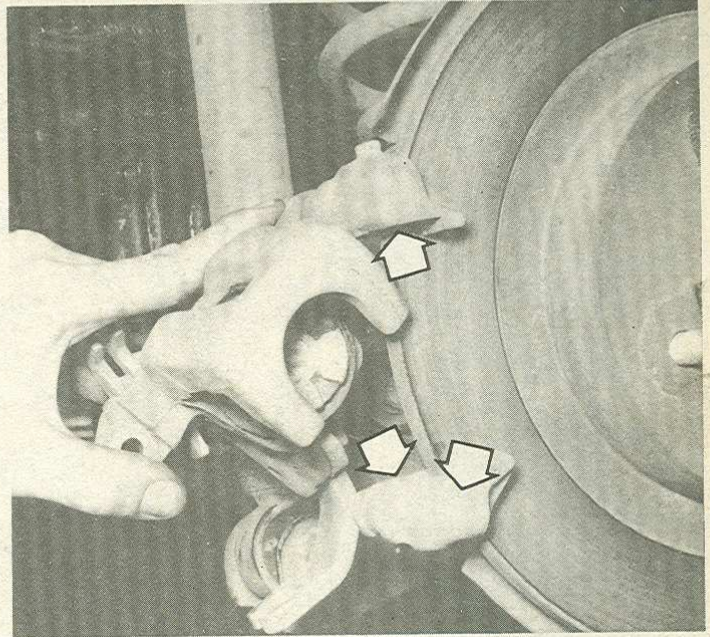
- 1 Raise the vehicle and support it securely on jackstands.
- 2 Remove the wheel.
- 3 Disconnect the hydraulic hose by disconnecting the banjo bolt from the caliper (see illustration). Be prepared to catch a small amount of brake fluid.
- 4 Remove the two caliper retaining bolts and lift off the caliper and pads as an assembly.
- 5 Inspect the caliper for leaking seals. Inspect the caliper and torque member for cracks, wear or other damage and replace if necessary.
- 6 Install the caliper and secure with the top retaining pin bolt.
- 7 Install the pads (Section 2).
- 8 Reconnect the hydraulic hose.
- 9 Bleed the hydraulic system (Section 9).



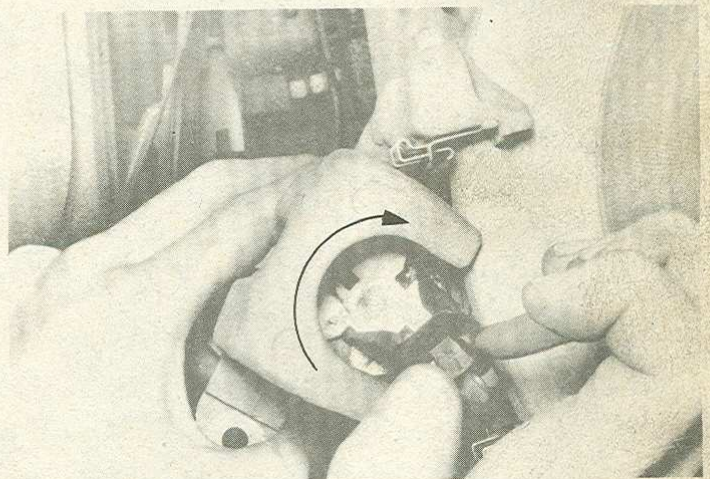
2.26 Install pad retainers (arrows) into the torque member



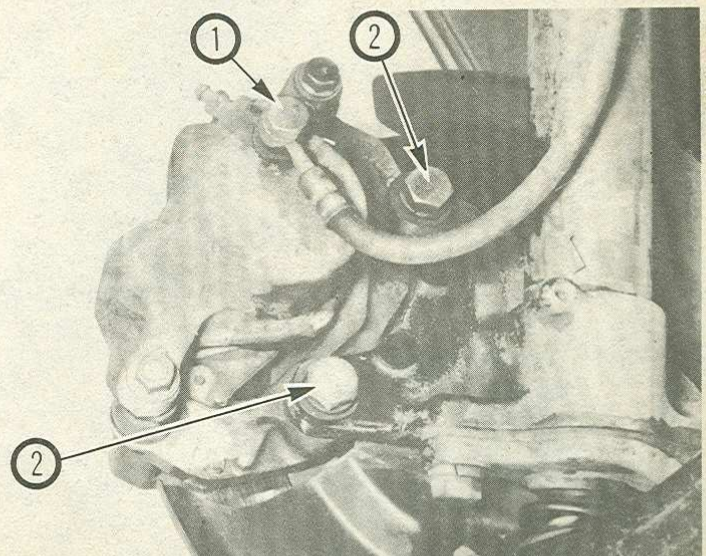
2.28 Install the shims onto the pads before installation



2.24 Apply silicone based grease to the contact surfaces (arrows) between the torque member and the pads



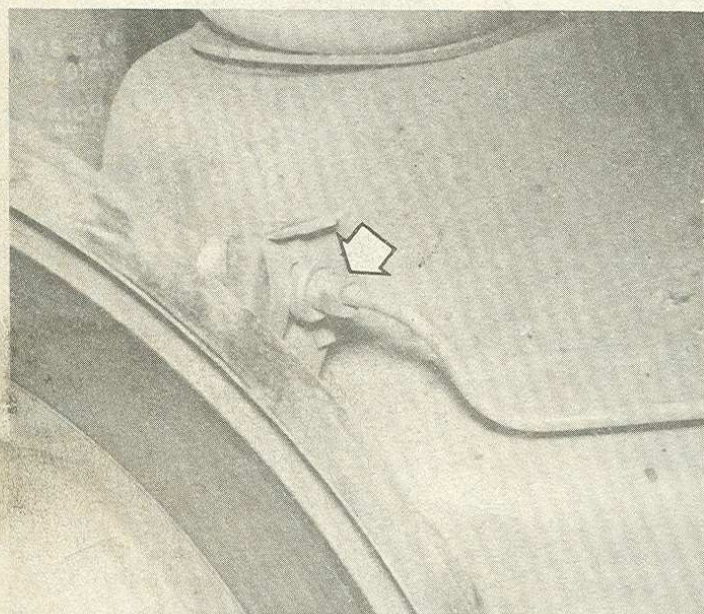
2.27 Arrow shows rotation direction of the piston to create enough room to install the new pads



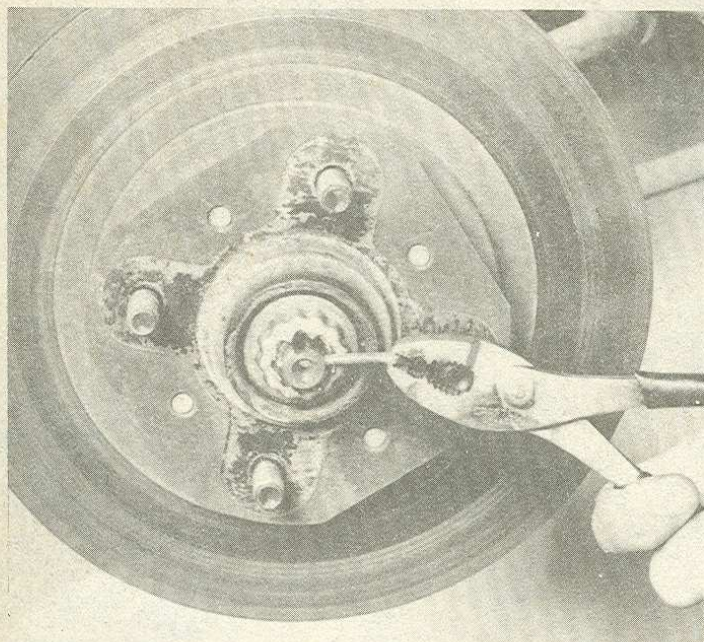
3.3 Disconnect the brake hose by removing the Banjo bolt (1). The caliper is held on by two bolts (2)

Rear caliper

- 10 Raise the vehicle and support it securely on jackstands.
- 11 Remove the wheel.
- 12 Disconnect the emergency brake cable by loosening the cable adjuster then removing the cable from the parking brake lever at the caliper.
- 13 Use a flare nut wrench to disconnect the hydraulic hose where the metal line connects to the rubber hose (see illustration).
- 14 Pull the hose retaining spring clip from the hose retaining bracket and remove the hose from the bracket.
- 15 Remove the caliper retaining bolts and remove the caliper.
- 16 Inspect the caliper for leaking seals and inspect the caliper and torque member for cracks, wear or other damage.
- 17 To make caliper installation easier remove the pads and place the caliper onto the rotor and secure it with the two retaining bolts.
- 18 Install the brake pads (Section 2).
- 19 Reconnect the hydraulic line.
- 20 Bleed the hydraulic system (Section 9).
- 21 Replace wheel, remove the jackstands and lower the vehicle.



3.13 Use a flare nut wrench to disconnect the metal brake line where it joins the rubber hose (arrow)



4.5 Remove the cotter pin and replace it with a new one during installation

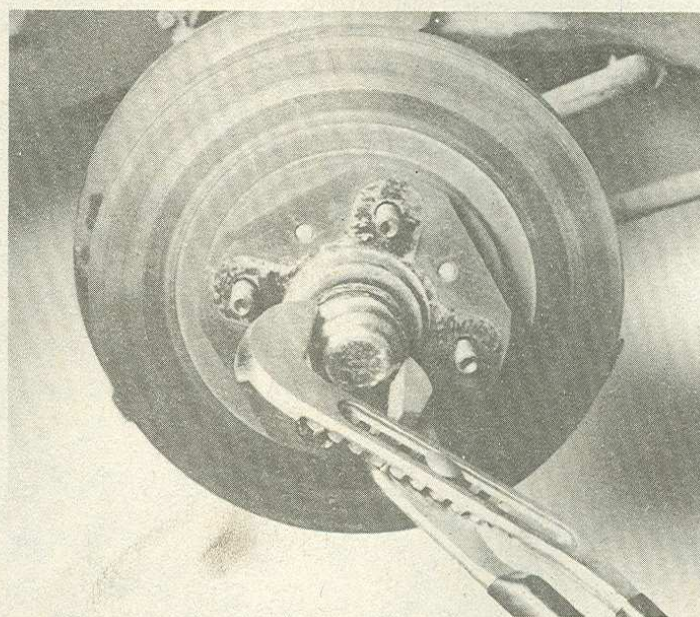
4 Disc brake rotor – removal and installation

Refer to illustrations 4.6, 4.7, 4.9, 4.10, 4.11, 4.12 and 4.20.

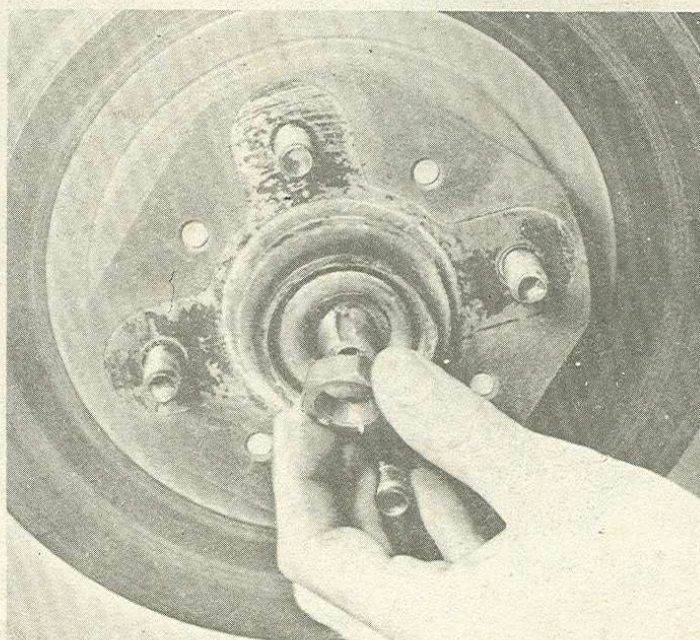
Front rotor

Note: The front brake rotors on 1988 and later turbo models can be pulled off the hub after the caliper is removed. There is no need to remove the hub from the spindle.

- 1 Raise the vehicle and support it securely on jackstands.
- 2 Remove the wheel.
- 3 Remove the caliper. Leave the hydraulic brake hose connected during caliper removal and wire the caliper to the spring to get it out of the work area.
- 4 Remove the dust cap from the rotor (see illustration).
- 5 Remove the cotter pin and discard the pin (see illustration).
- 6 Pull the wheel bearing locking nut cap off the wheel bearing locking nut.



4.4 Pry the dust cap off the rotor

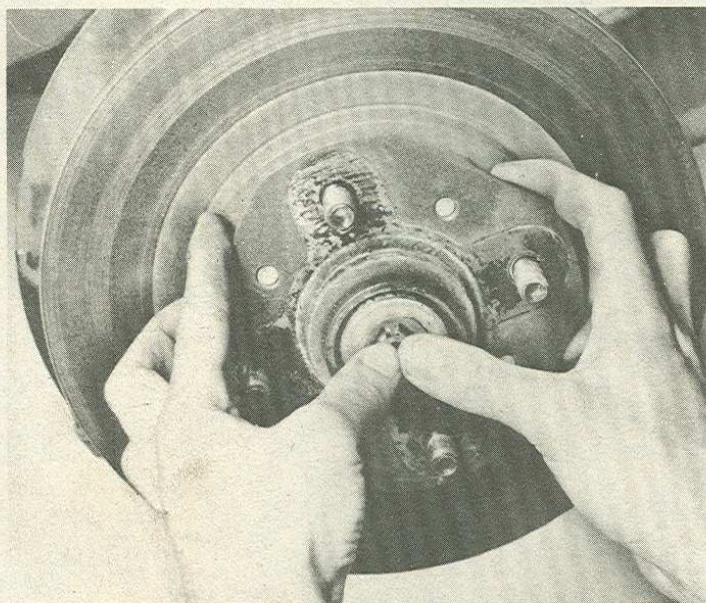


4.7 Remove the wheel bearing locking nut

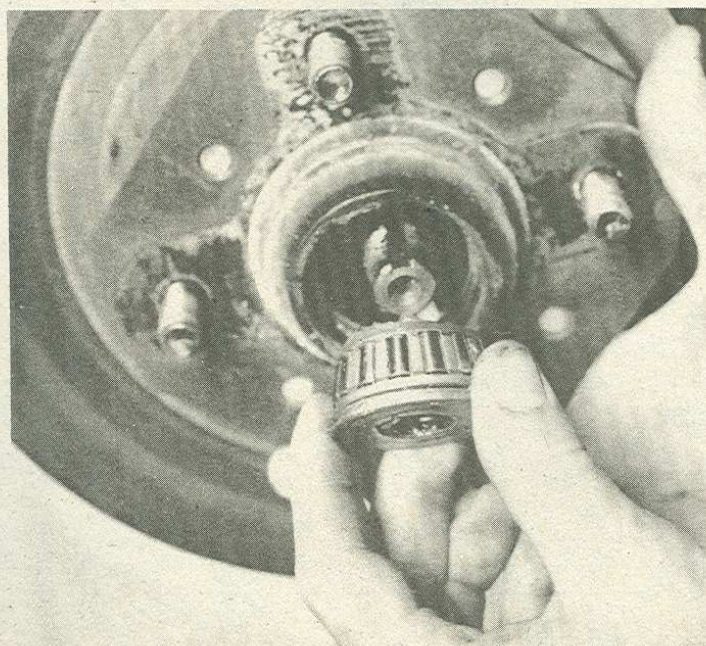
- 7 Remove the wheel bearing nut and washer from the end of the spindle (see illustration).
- 8 Remove the hub/rotor components from the spindle by grasping it with your hands (see illustration) and wiggling it from the spindle.
- 9 To remove the rotor from the hub, lay the rotor face down and remove the bolts (see illustration).
- 10 To install, carefully place the hub assembly onto the spindle and push the outer bearing into position (see illustration).
- 11 Install the washer and adjuster/locking nut. Snug the adjusting nut down and spin the rotor in both directions to seat the bearings.
- 12 Adjust wheel bearing pre-load (Chapter 10).
- 13 Replace the brake caliper (Section 2).
- 14 Replace the wheel, remove the jackstands and lower the vehicle.

Rear rotor

- 15 Raise the vehicle and support it securely on jackstands.
- 16 Remove the wheel.
- 17 Remove the caliper (Section 3). Leave the hydraulic brake hose connected during caliper removal and wire the caliper to the spring



4.8 Place your thumbs on the spindle to keep from dropping the outer bearing



4.10 Carefully push the rotor onto the spindle and insert the outer bearing

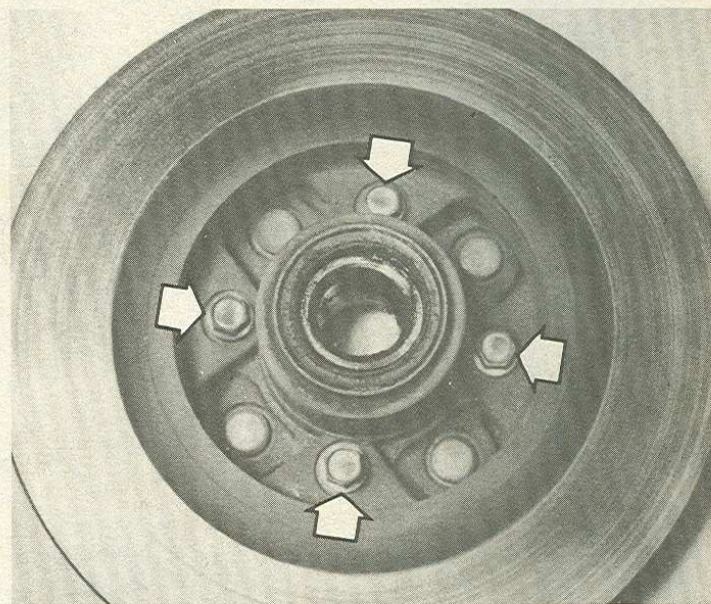
to get it out of the work area.

- 18 The rotor should pull off. If it is rusted on screw two bolts into the threaded holes in the rotor (see illustration) and turn the bolts to press the rotor from the flange.
- 19 Install by sliding the rotor onto the wheel lugs.
- 20 Install the caliper (Section 2).
- 21 Adjust parking brake cable (Section 10).
- 22 Replace the wheel, remove the jackstands and lower the vehicle.

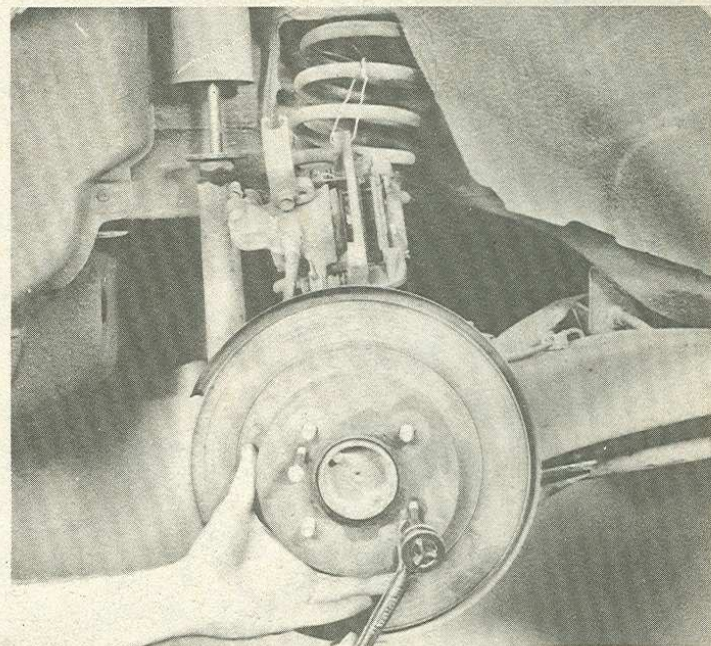
5 Master cylinder – removal and installation

Refer to illustrations 5.3, 5.4 and 5.5

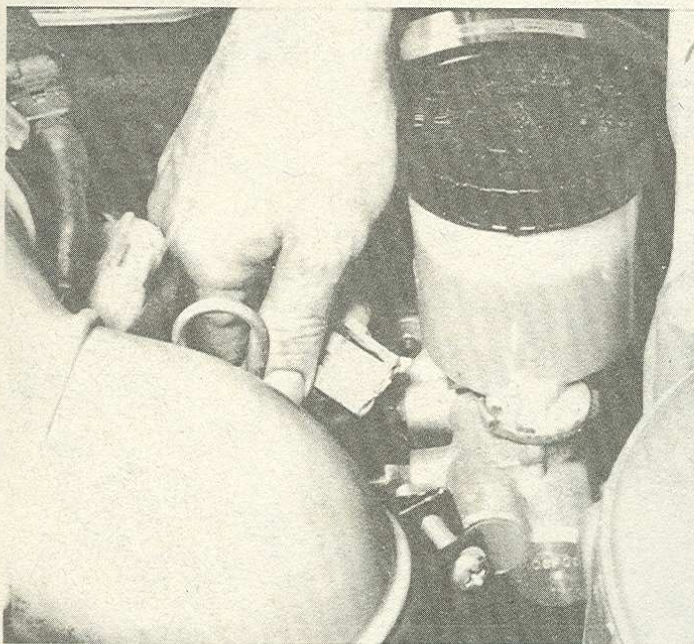
- 1 Disconnect the negative cable at the battery. Place the cable out of the way so it cannot accidentally come in contact with the negative terminal of the battery.
- 2 Place newspapers or rags under the master cylinder to catch any leaking brake fluid.



4.9 Separate the rotor from the hub by removing the four bolts attaching the two components



4.18 Install two bolts into the threaded holes provided and turn the bolts to force the rotor from the flange



5.3 Disconnect the low fluid level electrical connector from the master cylinder

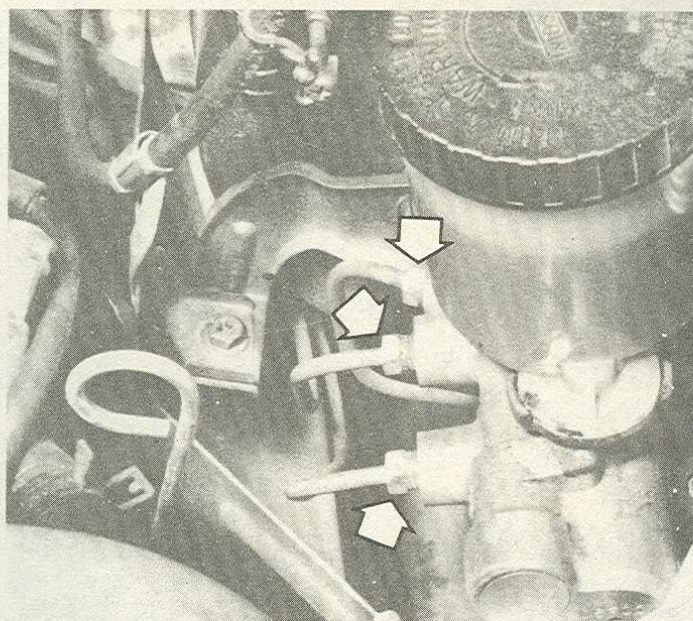


5.5 Remove the nuts attaching the master cylinder to the servo unit (arrows)

- 3 Disconnect the low fluid level sensor electrical connector (see illustration).
- 4 Use a flare nut wrench to loosen the nuts securing the brake lines to the master cylinder (see illustration).
- 5 Remove the two nuts securing the master cylinder to the vacuum servo unit (see illustration).
- 6 Carefully lift the cylinder off the mounting studs, remove the brake lines from the cylinder, and immediately place your fingers over the holes to prevent leakage of fluid. Lift the cylinder out of the engine compartment.
- 7 Plug the fluid lines to prevent further leakage of fluid.

Bench bleeding procedure

8 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 vice. Use caution not to clamp the vice too tightly, or the master cylinder body might be cracked.



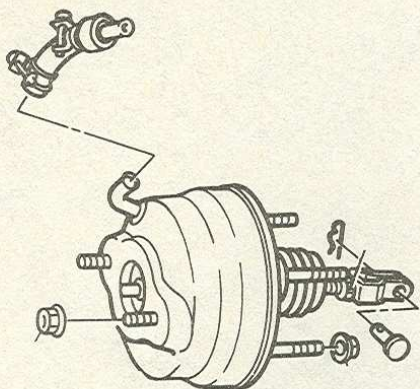
5.4 Loosen the metal lines attached to the master cylinder (arrows)

- 9 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.
- 10 Fill the reservoir with brake fluid of the recommended type (see *Recommended fluids and lubricants*).
- 11 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.
- 12 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.
- 13 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.
- 14 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 12. 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.
- 15 Install the master cylinder onto the vacuum servo retaining studs and fasten it to the servo.
- 16 Attached the fluid lines to the master cylinder using a flare nut wrench.
- 17 Connect the low fluid level sensor electrical connector.
- 18 Top up the fluid level in the master cylinder reservoir until the level is between the Max and Min marks.
- 19 Bleed the entire brake system as described in Section 9.
- 20 Remove the newspapers from underneath the master cylinder. Be careful not to drip any fluid on painted surfaces.
- 21 Connect the negative ground cable at the battery.

6 Vacuum servo booster unit — general information and testing

Refer to illustration 6.1

- 1 A vacuum servo unit (see illustration) is part of the brake hydraulic circuit.
- 2 The unit operates by vacuum obtained from the intake manifold.



6.1 Vacuum servo unit and vacuum hose

The servo unit and hydraulic master cylinder are connected together so that the servo unit piston rod acts as the master cylinder pushrod.

3 The controls are designed so that assistance is given under all conditions and, when the brakes are not required, vacuum in the rear chamber is established when the brake pedal is released. All air entering the rear chamber is passed through a small air filter.

4 Under normal operating conditions the vacuum servo unit is very reliable and does not require replacement except at very high mileage.

5 To check for a satisfactory vacuum servo unit, depress the brake pedal several times. The distance which the pedal travels on each depression should not vary.

6 Hold the pedal fully depressed and start the engine. The pedal should be felt to move down slightly when the engine starts.

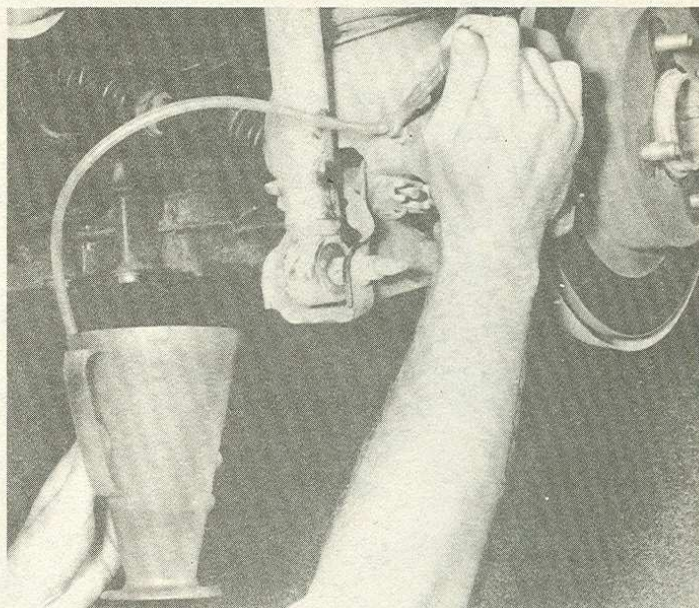
7 Depress the brake pedal and switch off the engine, holding the pedal down for about 30 seconds. The position of the pedal should not alter.

7 Vacuum servo booster unit — removal and installation

- 1 Remove the master cylinder (Section 5).
- 2 Disconnect the vacuum line from the servo unit.
- 3 Remove the dash panel lower trim piece (Chapter 11).
- 4 Working under the dash, disconnect the servo pushrod from the brake pedal by removing the clevis pin.
- 5 Remove the nuts from the servo unit mounting studs. Return to the engine compartment and withdraw the unit from the car.
- 6 Install the vacuum servo unit and working from inside the vehicle install the nuts securing the unit to the bulkhead.
- 7 Connect the brake pedal to the servo unit pushrod and install the clevis pin.
- 8 Connect the vacuum line to the servo unit.
- 9 Replace the master cylinder.
- 10 Check the brake pedal height and free play and adjust them if necessary as described in Section 12.
- 11 Replace the dash panel lower trim piece.

8 Hydraulic brake hose and lines — inspection and replacement

- 1 Every six months the flexible hoses which connect the steel brake lines to the calipers should be inspected for cracks, chafing of the outer cover, leaks, blisters, and other damage. These are vulnerable parts of the brake system and inspection should be complete. A light and mirror will prove helpful for a thorough check. If a hose exhibits any of the above conditions, replace it with a new one.
- 2 Prefabricated brake lines are available from dealer parts departments and auto parts stores. **Caution:** Do not, under any circumstances, use lines that have been formed from copper or aluminum.
- 3 When installing the brake line, leave at least 0.75 in (19 mm) clearance between the line and any moving or vibrating parts. Be sure to bleed the brakes (Section 9) after the line is installed.



9.7 Place one end of the tubing over the bleeder valve and submerge the other end in a container partially filled with clean brake fluid

9 Hydraulic system — bleeding

Refer to illustration 9.7

Caution: Spilled brake fluid can damage the car's paint.

1 Any time any part of the brake system is disassembled or develops a leak, or when the fluid in the master cylinder reservoir runs low, air will enter the system. To eliminate this air the brakes must be bled.

2 If air has entered the system because the master cylinder has been disconnected, or the master cylinder reservoir has been low or empty of fluid, or if a complete flushing of the system is needed, all four brakes should be bled. If a brake line serving only one brake is disconnected, then only that brake need be bled.

3 Before beginning, have an assistant on hand, as well as a good supply of new brake fluid, an empty clear container such as a glass jar, a length of 3/16-inch plastic, rubber or vinyl tubing to fit over the bleeder valve and a brake line wrench to open and close the bleeder valve. The vehicle will have to be raised and placed on jackstands for clearance.

4 If the vehicle is equipped with power brakes, remove the vacuum reserve in the system by applying the brake several times with the engine off.

5 Check that the master cylinder reservoir is full of fluid and be sure to keep it at least half full during the entire operation. If the reservoir runs low of fluid the entire bleeding procedure must be repeated.

Caution: Do not mix different types of brake fluid, and do not re-use any old fluid, as this could deteriorate brake system components.

6 Begin with the left rear wheel. Loosen the bleeder valve slightly to break it loose then tighten it to a point where it is snug but can still be loosened quickly and easily.

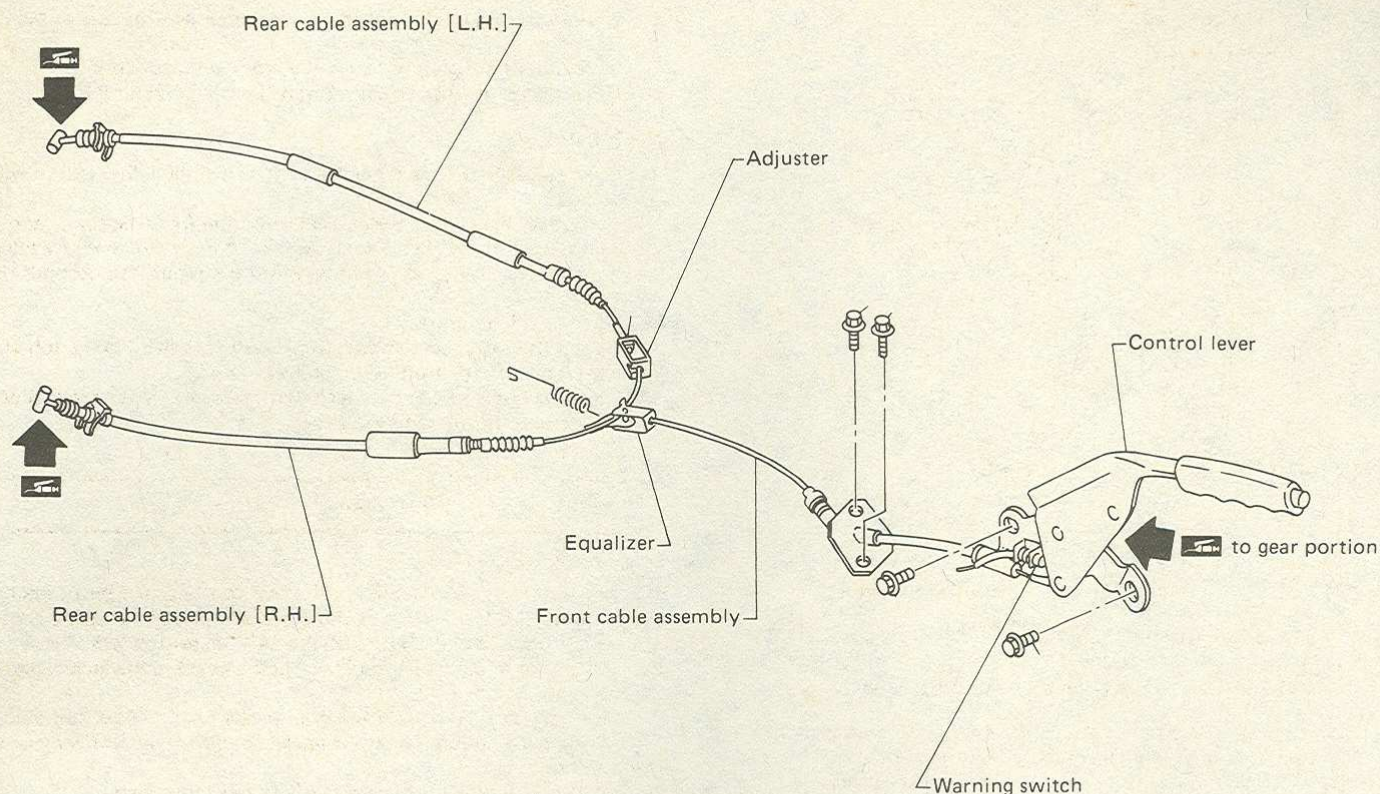
7 Place one end of the tubing over the bleeder valve and submerge the other end in brake fluid in the container (see illustration).

8 Have your assistant pump the brakes a few times to build pressure in the system. On the last pump have him hold the pedal firmly depressed.

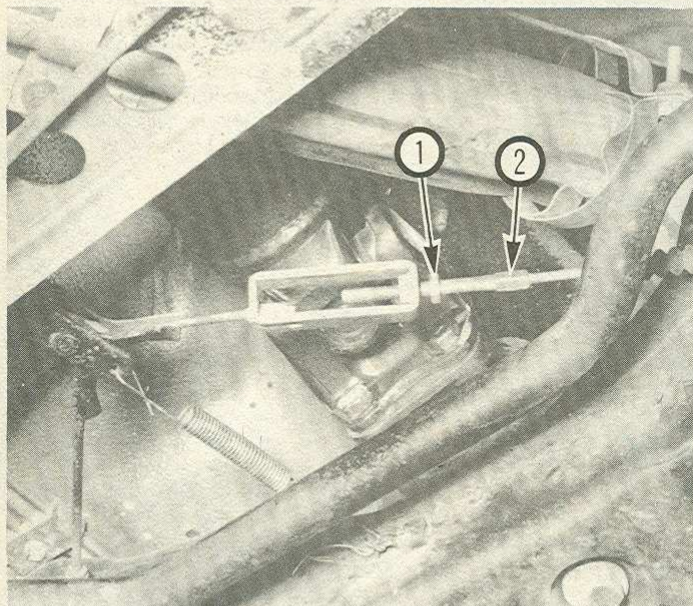
9 While the pedal is held depressed, open the bleeder valve just enough to allow a flow of fluid to leave the valve. Watch for air bubbles to exit the submerged end of the tube. When the fluid flow slows after a couple of seconds, close the valve and have your assistant release the pedal.

10 Repeat the procedure until no more air is seen in the fluid leaving the tube. Fully tighten the bleeder valve and proceed to the right rear wheel, the right front wheel, and the left front wheel, in that order, and perform the same operation. Be sure to check the fluid in the master cylinder reservoir frequently.

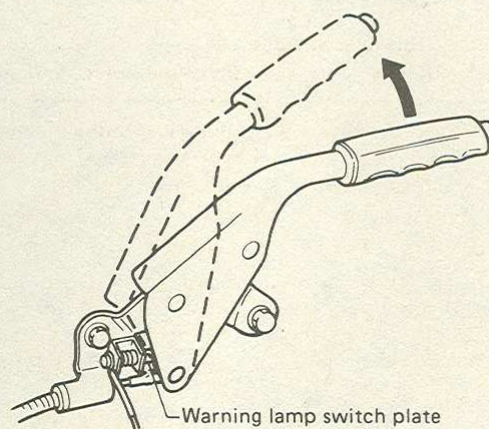
11 Refill the master cylinder with fluid at the end of the operation.



10.1 Parking brake system components



10.4 To adjust the emergency cable, back off on the lock nut (1) and turn the adjuster (2) until the correct tension is achieved



10.9 Bend the parking brake warning lamp switch plate so the brake warning light comes on when the lever is pulled up one notch and goes out when fully released

10 Parking brake — adjustment

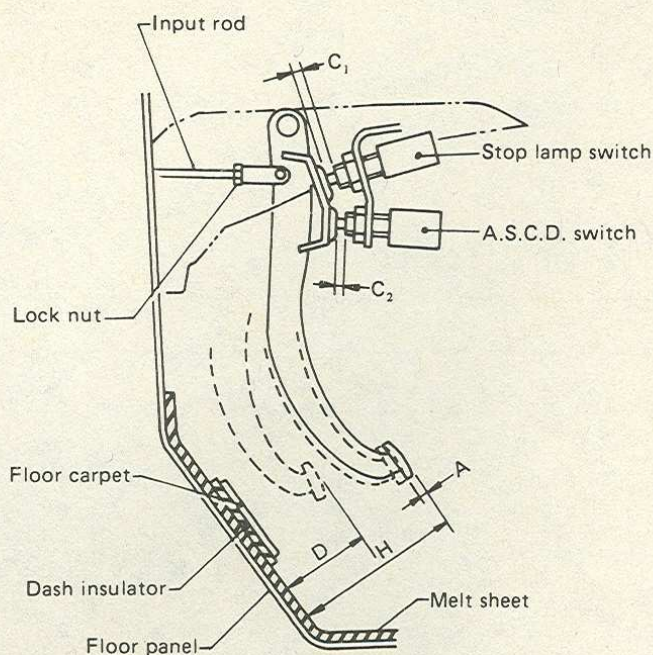
Refer to illustrations 10.1, 10.4 and 10.9

1 The parking brake (see illustration) does not need routine maintenance, but the cable may stretch over a period of time necessitating adjustment. Also, the parking brake should be checked for proper adjustment whenever the rear brake cables have been disconnected to perform other procedures.

- 2 Pull up on the parking brake lever with heavy pulling force. When correctly adjusted, the lever should move upward 8-10 notches.
- 3 If adjustment is necessary, raise the vehicle and support it securely on jackstands.
- 4 Loosen the locknut (see illustration) at the parking brake cable adjuster.
- 5 Turn the adjuster to tighten the cable so the parking brake lever, when pulled, moves the proper distance.
- 6 Tighten the adjuster locknut.
- 7 Check that both rear wheels turn freely with the parking brake released and that there is no brake drag in either direction.
- 8 Remove the jackstands and lower the vehicle.

Warning lamp adjustment

- 9 Bend the parking brake warning lamp switch plate, located at the base of the brake handle (see illustration), so that the brake warning light comes on when the lever is pulled one notch and goes out when fully released.



12.1 Brake pedal and switch adjustments

A	1.0 to 3.0 mm (0.039 to 0.018 in)	H	Automatic transmission 184 to 194 mm (7.24 to 7.64 in)
C1	0.3 to 1.0 mm (0.012 to 0.039 in)		Manual transmission 182 to 192 mm (7.17 to 7.56 in)
C2	0.3 to 1.0 mm (0.012 to 0.039 in)		
D	90 mm (3.54 in)		

11 Stop light switch — removal, installation and adjustment

- 1 The brake light switch is the top switch mounted to the top of the brake pedal.
- 2 Disconnect the wires leading to the switch.

- 3 Loosen the locknut located on the pedal side of the switch.
- 4 Unscrew the switch from the retaining bracket.
- 5 Installation is the reverse of the removal procedure.
- 6 Once installed, adjust the switch-to-pedal clearance.

Adjustment

- 7 Refer to Section 12 and confirm that brake pedal free play is within specifications.
- 8 Use a feeler gauge inserted between the pedal stopper and the threaded end of the stop lamp switch. Turn the stop lamp switch adjusting nut until the distance between the switch and stopper is as specified.
- 9 Tighten adjusting nut.
- 10 Adjust the Automatic Speed Control Device (ASCD) switch in the same manner as the stop lamp switch.
- 11 Press the brake pedal and check that the brake lights come on when depressed and go off when released.

12 Brake pedal — adjustment

Refer to illustration 12.1

- 1 You will find two switches attached to the brake pedal near the pivot point. The top switch is the stop lamp switch and the bottom is the Automatic Speed Control Device (ASCD) switch (see illustration).
- 2 Adjust the brake pedal free height by loosening the locknut on the booster input rod.
- 3 Turn the input rod until the free pedal height is as listed in the Specifications. **Caution:** Be sure that the tip of the input rod stays inside the booster.
- 4 Tighten the locking nut on the booster input rod.
- 5 Check the clearance between both switches where they contact the brake pedal. See the Specifications for the correct clearance. If the clearance does not meet the Specifications, adjustment is made by loosening the locking nut on the switch and turning the adjusting nut.
- 6 Check the pedal free play and compare it to the Specifications.
- 7 Check to see that the stop lamp is off when the pedal is released.
- 8 Check the brake pedal depressed height with the engine running. Depress the pedal and check the distance from the face of the pedal to the floor board and compare with the Specifications. If height is below the specified value, check the brake system for leaks, accumulation of air or damage to the hydraulic system components.