

BRAKE PEDAL ASSEMBLY

REMOVAL AND INSTALLATION

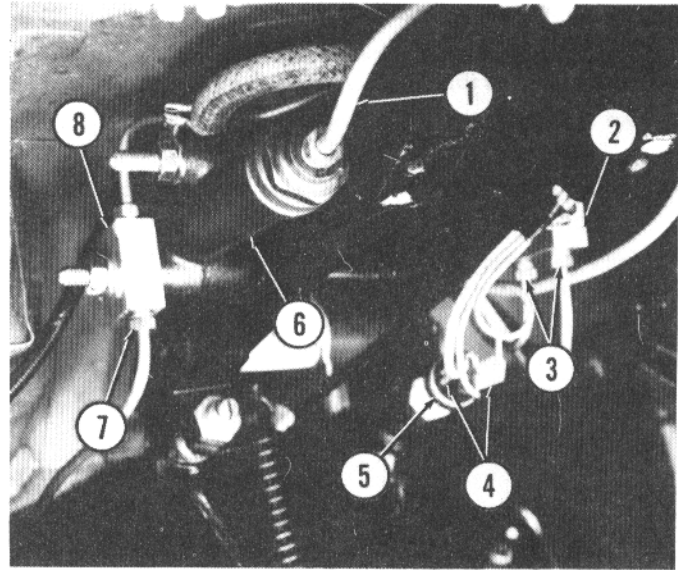
Siphon fluid from brake and clutch reservoirs. Remove steering column. Refer to 412.01.

Place a container on floor of vehicle to catch fluid. Disconnect brake lines (3 and 7) from junction blocks (2 and 8). Cap lines.

Disconnect clutch line (1) from clutch master cylinder (6). Cap line.

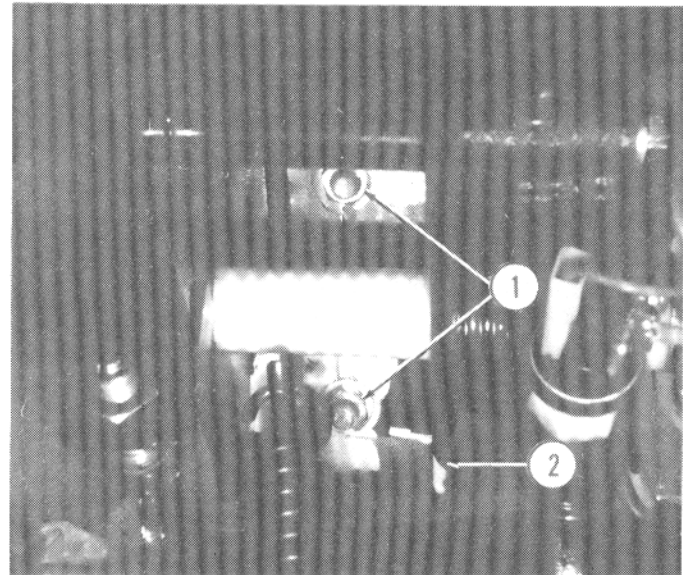
Remove wires (4) from brake light switch (5).

1. Clutch line
2. Junction block
3. Brake lines
4. Wires
5. Brake light switch
6. Clutch master cylinder
7. Brake line
8. Junction block



Remove two nuts (1) and washers holding pedal support bracket (2) to firewall.

1. Nuts
2. Pedal support bracket



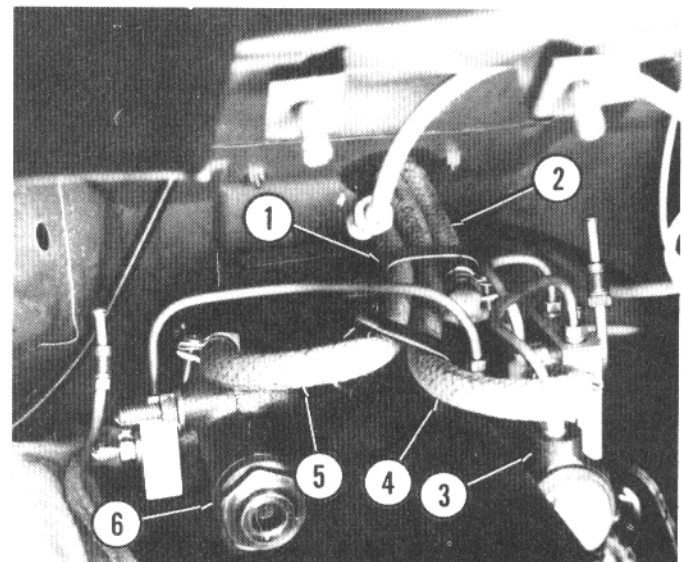
Lower pedal assembly far enough to allow removal of hose (5) from clutch master cylinder (6) and hoses (2 and 4) from brake master cylinder (3).

Remove screw from strap (1) holding hoses to support bracket.

Remove pedal assembly from vehicle.

Install in reverse order. Use new hose clamps. Fill reservoirs, bleed brake and clutch systems, and check for leaks.

1. Strap
2. Brake hose
3. Brake master cylinder
4. Brake hose
5. Clutch hose
6. Clutch master cylinder



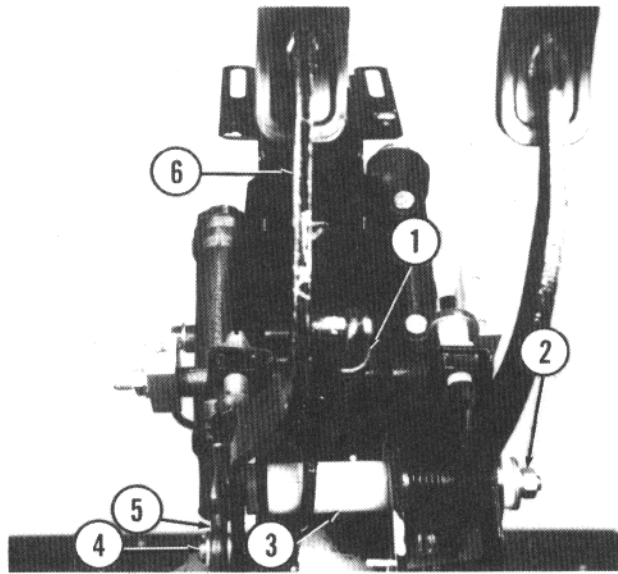
DISASSEMBLY AND REASSEMBLY

Remove cotter pin and washer from clevis pin (4). Pry clutch master cylinder rod (5) off clevis pin.

Remove spring (1) from clutch pedal (6).

Remove nut (2) and two washers from end of clutch pedal shaft. Slide clutch pedal and shaft out of nylon bushing (3).

1. Clutch pedal spring 2. Nut 3. Bushing 4. Clevis pin
5. Cylinder rod 6. Clutch pedal

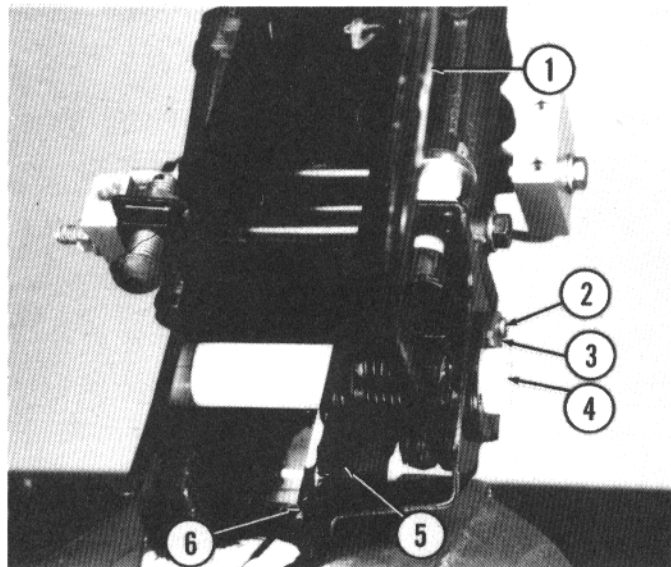


Take end of spring (5) out of pedal support bracket (6).

Remove screw (2) and retaining plate (3) holding nylon bushing (4). Slide bushing out of support bracket.

Remove brake pedal (1) with master cylinder rod attached. Inspect nylon bushing and replace if worn excessively. Lubricate all bearing surfaces with white grease and reassemble in reverse order of disassembly.

1. Brake pedal 2. Screw 3. Retaining plate 4. Bushing
5. Spring end 6. Pedal support bracket



MASTER CYLINDER REMOVAL AND INSTALLATION

Remove brake pedal assembly. Refer to 331.01.

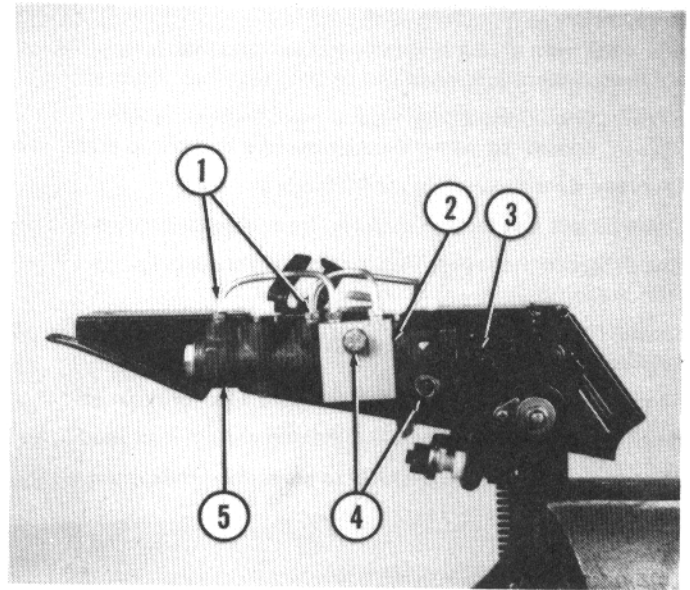
Disconnect three brake lines (1) from master cylinder (5).

Remove nuts from two bolts (4) holding master cylinder. Remove bolts and junction block (2).

Pull master cylinder out and off of cylinder rod (3).

Install in reverse order, making sure all parts and fittings are clean.

1. Brake lines 2. Junction block 3. Cylinder rod 4. Bolts
5. Master cylinder



OVERHAUL

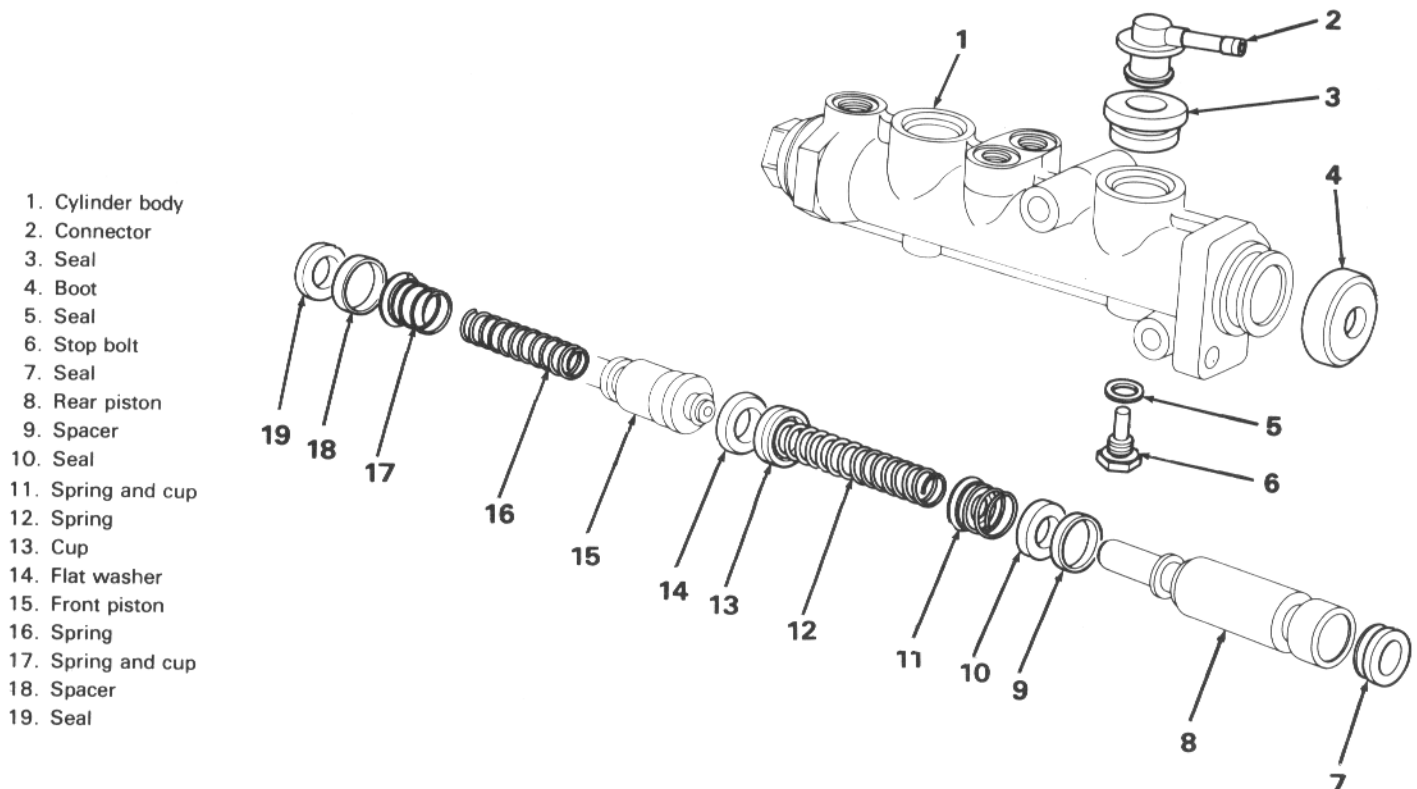
Remove two connectors (2) and seals (3).

Remove dust boot (4).

Remove two stop bolts (6) and seals (5).

Remove remaining internal parts (items 7 through 19) from cylinder (1).

Carefully inspect cylinder bore and piston surfaces. They should have a mirror-like finish without any kind of roughness. The cylinder bore can be honed to prevent leaks or excessive wear of seals and pistons. Do not increase size of bore. Replace seals and dustcovers. Clean all parts with denatured alcohol and lubricate with brake fluid. Reassemble in reverse order of disassembly.



EXPLODED VIEW OF MASTER CYLINDER

BLEEDING

When the front or rear hydraulic system is opened for any reason, it must be bled to remove all entrapped air. The front and rear systems are independent and need not be bled together. After all repairs are made, proceed as follows:

NOTE: Should the brake system have been completely drained, it is advisable to carry out the following operation before bleeding:
Loosen all wheel bleeder screws and pump brake pedal, as fluid begins to escape tighten bleeder screws.

Fill brake fluid reservoir with DOT 3 brake fluid.

Clean all dirt and foreign material from bleeder screws and remove protective cap.

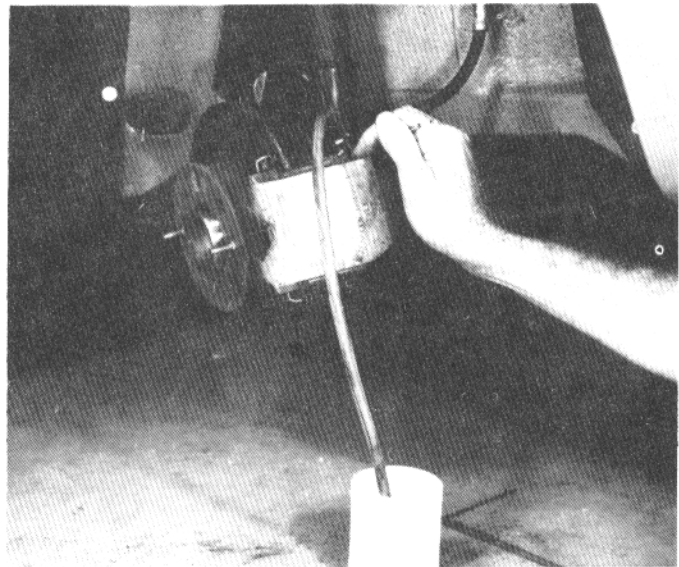
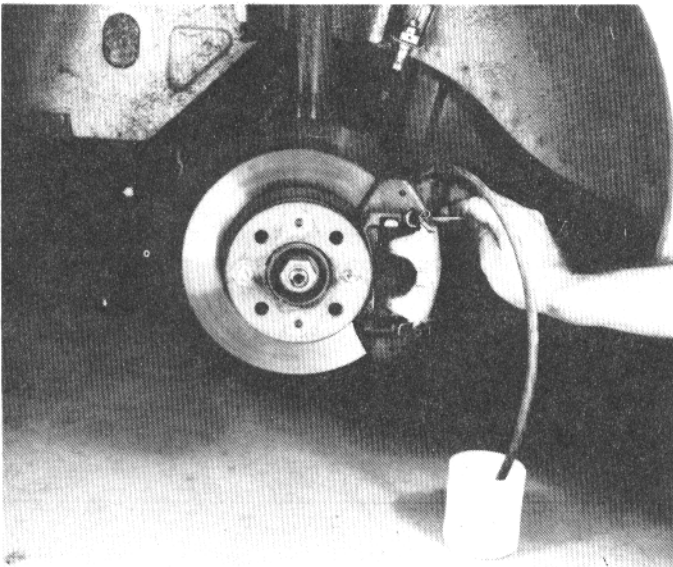
Attach bleeder hose over bleeder fitting in brake caliper or wheel cylinder. Submerge other end of bleeder hose into a clean jar half filled with brake fluid.

Loosen bleeder screw one or two turns and press brake pedal down, allowing it to return slowly; do this several times until no more air bubbles escape from rubber hose.

Keeping brake pedal depressed, remove bleeder hose and tighten bleeder screw. Refit protection cap.

Repeat above on other wheels, making certain that fluid level in reservoir is maintained.

After bleeding, top up reservoir to prescribed maximum level.



CALIPER AND PADS

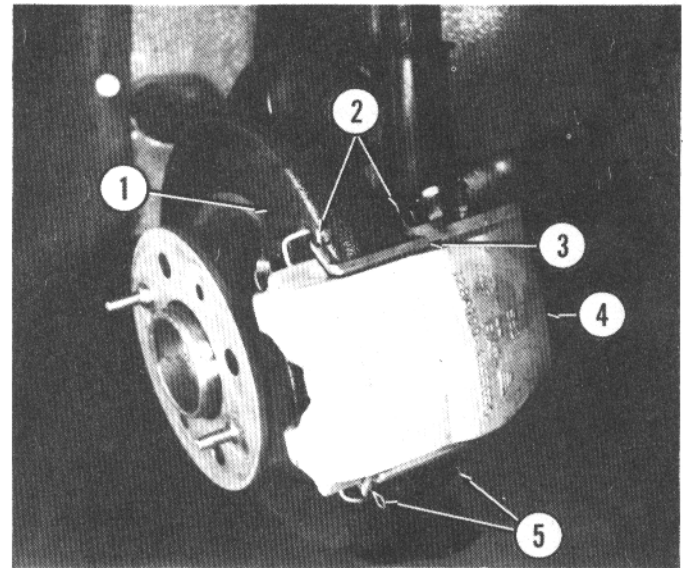
REMOVAL AND INSTALLATION

Remove wheel.

Remove four cotter pins (2 and 5) from two caliper locking blocks (3).

Use a drift to drive out locking blocks.

1. Support bracket 2. Cotter pins 3. Locking block 4. Caliper
5. Cotter pins

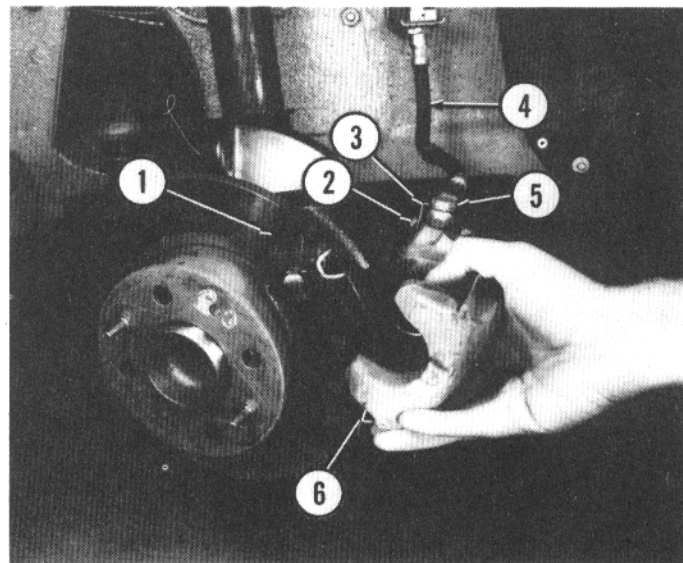


Separate caliper (6) from support bracket (1).

On front brakes, to remove caliper for replacement or overhaul, remove bolt (2) holding bracket (3) to caliper.

Remove union bolt (5) holding hose (4). Remove gaskets.

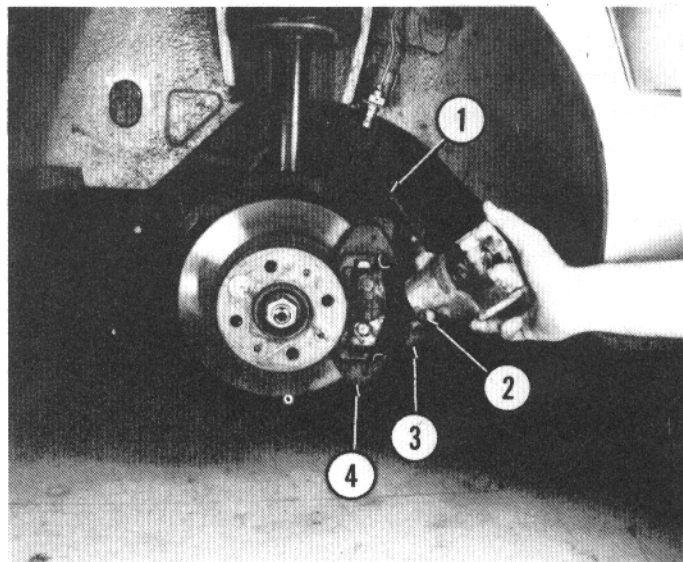
1. Support bracket 2. Bolt 3. Bracket 4. Hose 5. Union bolt
6. Caliper



On rear brakes, to remove caliper for replacement or overhaul, disconnect hose (1) from caliper (3). Remove gaskets.

Disconnect hand brake cable (2) from caliper.

1. Hose 2. Cable 3. Caliper 4. Support bracket



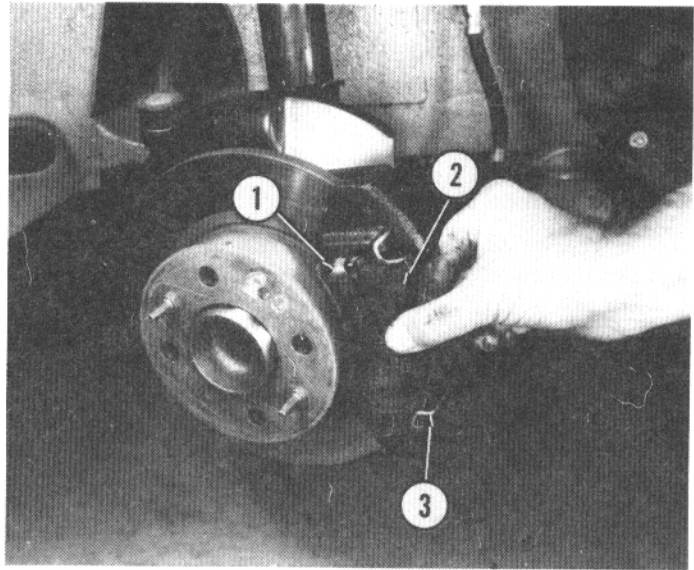
Remove two brake pads (2).

Inspect two retainer springs (1) and two caliper springs (3) for breakage. Replace if necessary.

NOTE: Retainer springs on early type brake systems are a different type than those illustrated. See exploded view in section 331.25.

Install in reverse order.

1. Retainer spring 2. Brake pad 3. Caliper spring



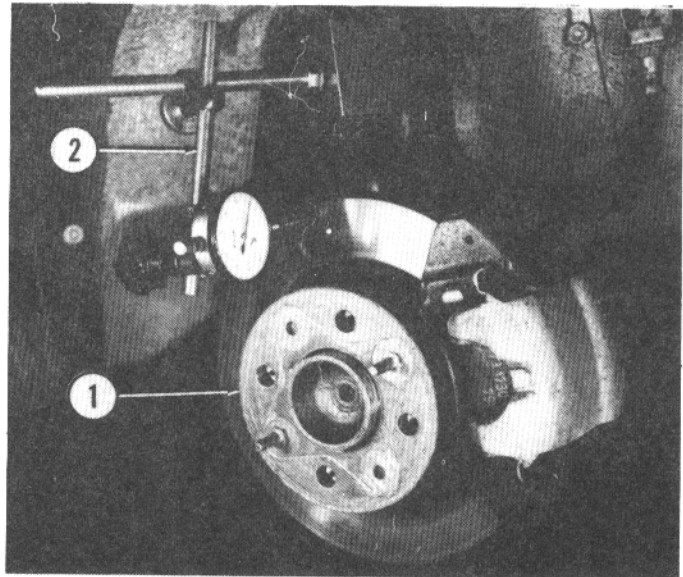
Check disc (1) for runout by placing a dial indicator (2) 0.08 in. (2 mm) from disc outer edge.

Runout must not be greater than 0.010 in. (0.25 mm), otherwise reface disc.

Thickness of disc after refacing must not be less than 0.368 in. (9.35 mm).

Minimum permissible thickness from wear is 0.354 in. (9 mm). Replace disc if less.

1. Brake disc 2. Dial indicator



Install in reverse order of removal.

If new brake pads are being installed, it will be necessary to fully seat caliper pistons in bore in order to have installation clearance for calipers. Push in on center of piston with blunt object (hammer handle, etc.)

NOTE: Brake fluid will back up into master cylinder and may overflow.

Place light coat of grease on locking blocks and contact surfaces of caliper and support bracket.

After installing caliper, install lower locking block first, then with hand pressure against front of caliper, force caliper back far enough to insert top locking block. If caliper hydraulic lines have been disconnected, bleed system (refer to BLEEDING HYDRAULIC SYSTEM).

CAUTION: Before driving vehicle, pump brake pedal a few times to make certain caliper pistons are seated against pads and pedal is firm.

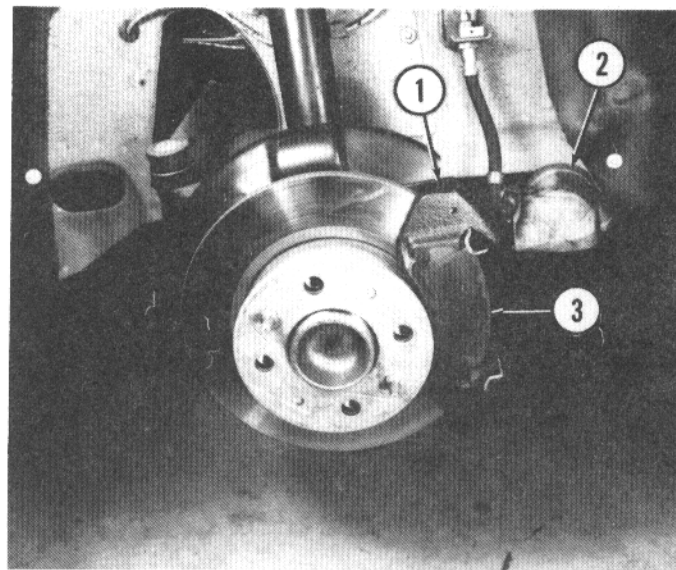
DISC AND BACKING PLATE

REMOVAL AND INSTALLATION

Remove caliper and pads. Refer to Caliper and Pads Removal and Installation.

Remove caliper support bracket (1) by removing two bolts and lockwashers on back face of bracket.

1. Caliper support bracket 2. Caliper 3. Disc



Remove locating pins (1). Remove disc (2).

To remove backing plate (3), remove bolt and washers.

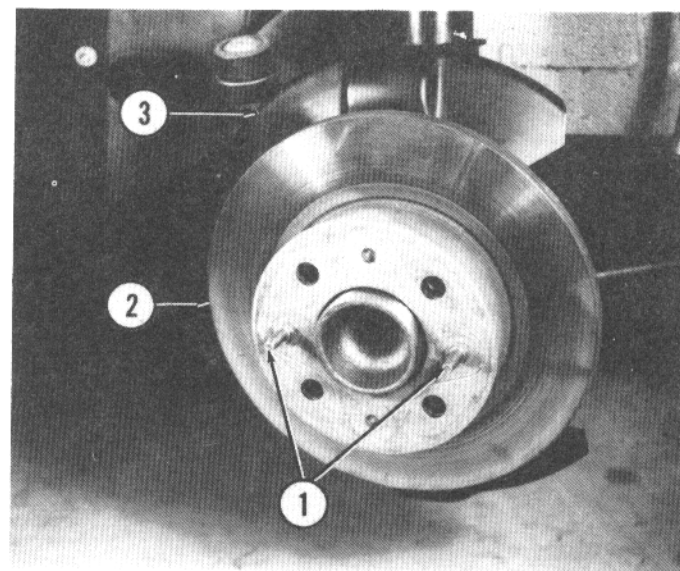
Inspect disc for scoring or cracks.

For runout greater than 0.010 in. (0.25 mm) and/or scoring, discs can be refaced to a minimum thickness of 0.368 in. (9.35 mm).

Replace discs if cracked.

Install in reverse order. Torque caliper support bracket bolts to 35 ft. lbs. (4.8 kgm).

1. Locating pins 2. Disc 3. Backing plate



Front Brake Calipers

331.17

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OVERHAUL

Remove caliper. Refer to 331.17/.25

Remove dust boot (4).

Apply compressed air through brake fluid hose connection to force piston (3) out of caliper (1).

WARNING: Apply air pressure gradually or piston will eject at high velocity.

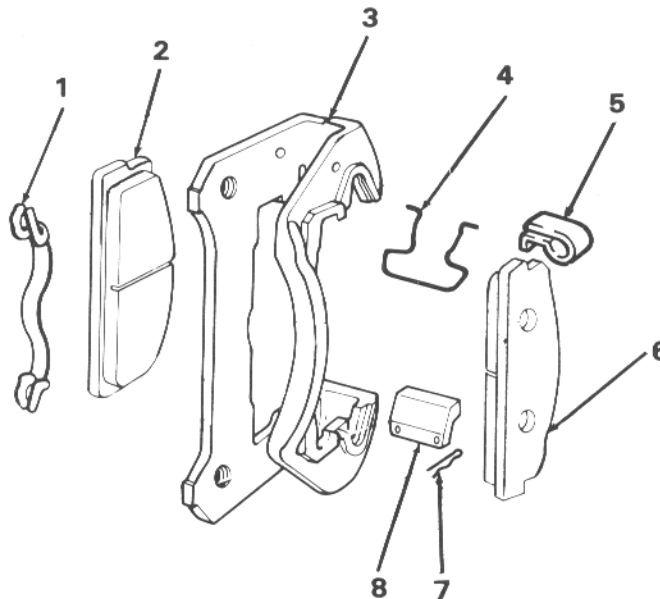
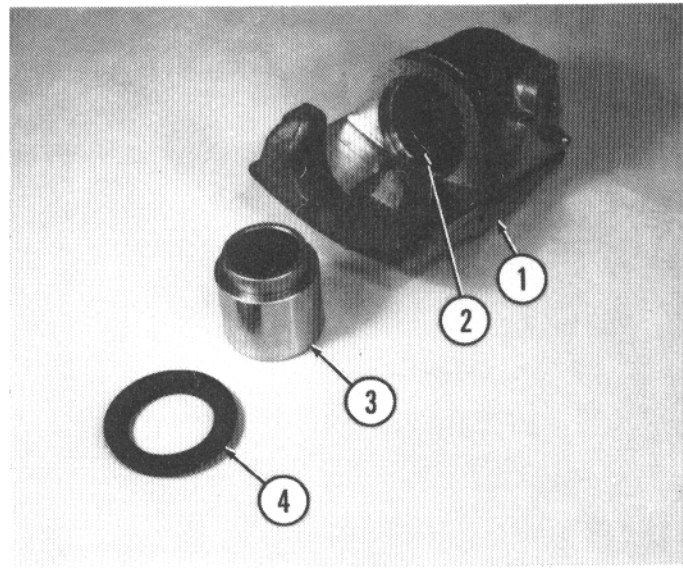
Remove seal (2).

Check piston and caliper cylinder for scoring or binding.

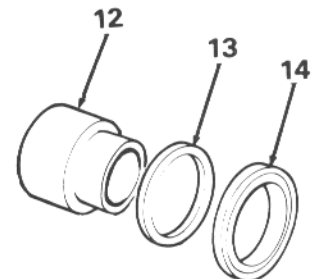
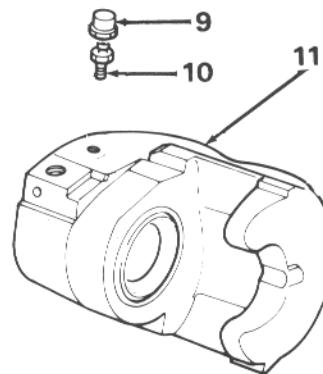
Install seal in caliper. Place piston in caliper. Push piston in until it bottoms.

Install dust boot, making sure it is seated in groove in caliper body.

1. Caliper 2. Seal 3. Piston 4. Dust boot



1. Lining retainer spring (early type)
2. Lining pad
3. Caliper support bracket
4. Spring
5. Lining retainer spring (late type)
6. Lining pad
7. Cotter pin
8. Caliper locking block



EXPLODED VIEW OF FRONT CALIPER AND BRACKET COMPONENTS

Rear Brake Calipers

331.25

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OVERHAUL

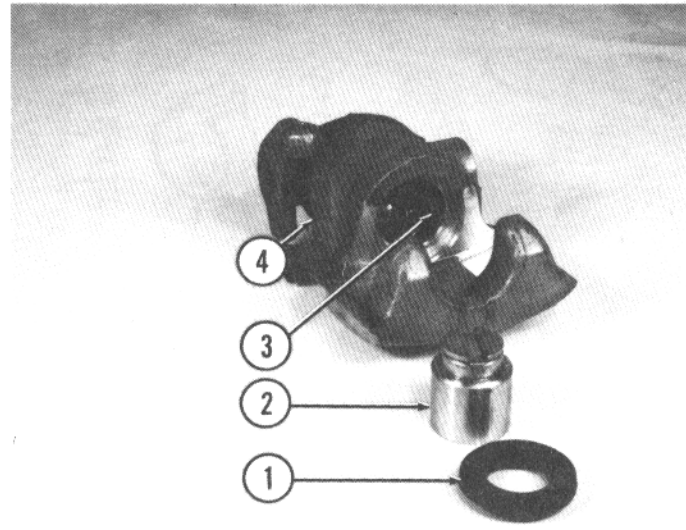
Remove caliper. Refer to 331.17/.25.

Remove dust boot (1).

Unscrew piston (2) from plunger. Use screwdriver in slot.

Remove seal (3) from caliper (4).

1. Dust boot 2. Piston 3. Seal 4. Caliper



To disassemble hand brake mechanism, remove lock ring (7) from shaft (1). Compress plunger (4) to relieve spring tension, then remove shaft.

Remove plunger (4), seal (3) and spring washers (6).

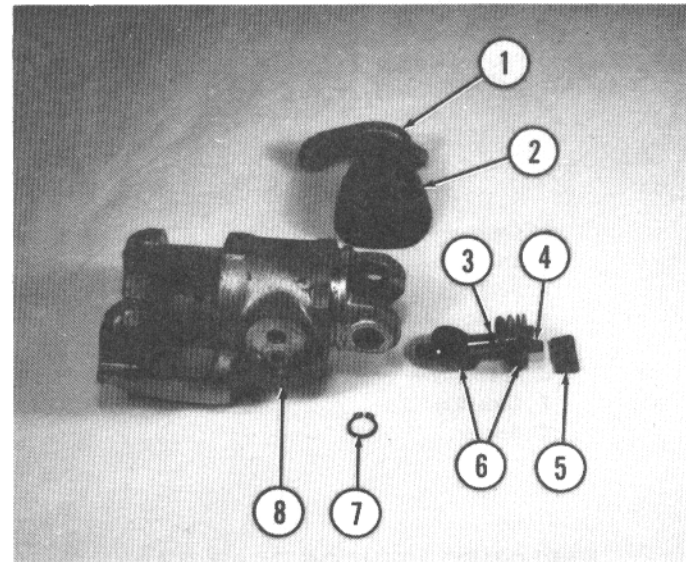
To reassemble, place plunger with seal and spring washers in caliper (8).

Place hand brake shaft in boot (2).

Place shaft and pawl (5) in caliper. Install lock ring.

Coat lever and plunger with grease.

1. Shaft 2. Boot 3. Seal 4. Plunger 5. Pawl 6. Spring washers
7. Lock ring 8. Caliper

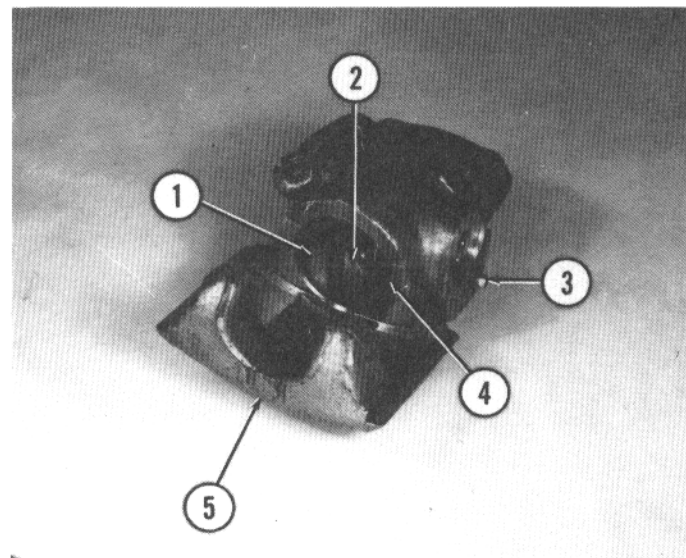


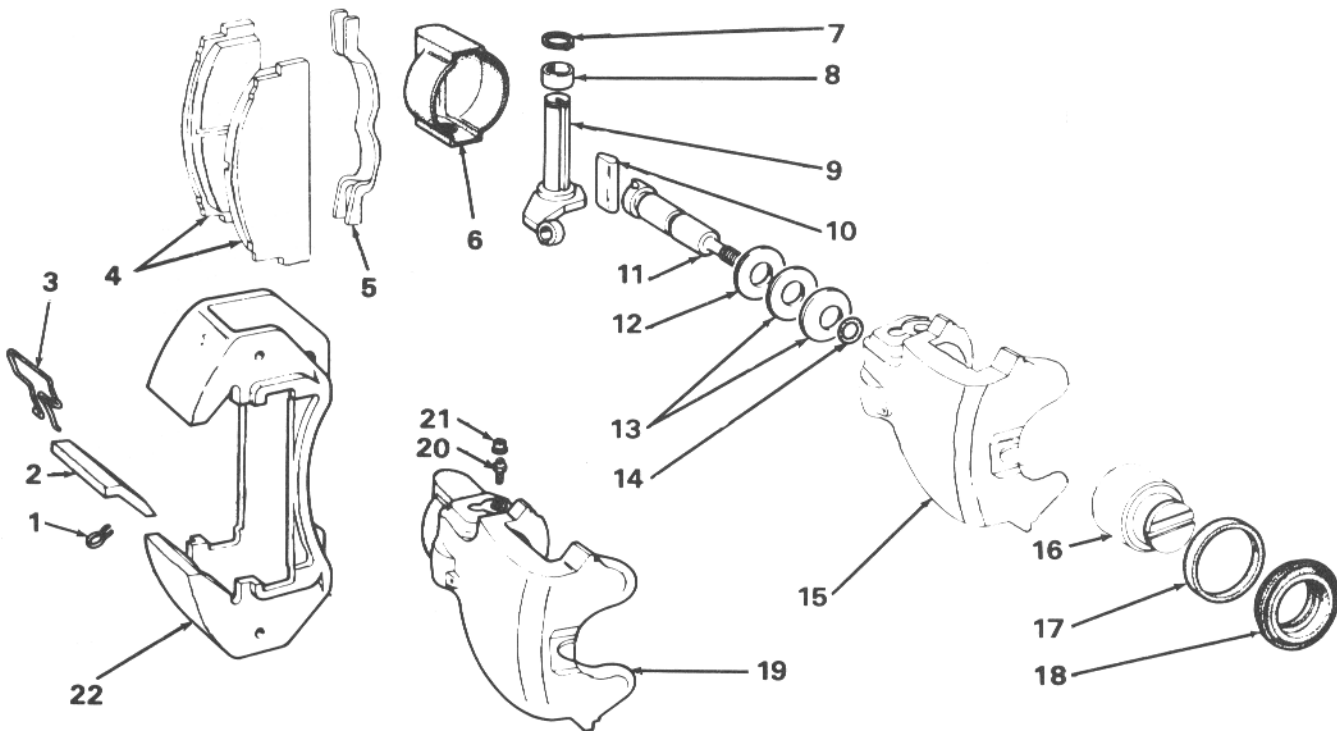
Install seal in caliper cylinder.

Screw piston (1) on plunger until it is seated. Make sure mark (2) on piston is on side of caliper (5) with bleed fitting (3).

Install rubber boot (4). Make sure boot is seated in groove in caliper.

1. Piston 2. Mark 3. Bleed fitting 4. Boot 5. Caliper





- 1. Cotter pin
- 2. Caliper locking block
- 3. Spring
- 4. Lining pads
- 5. Lining retainer spring
- 6. Rubber boot
- 7. Lock ring
- 8. Spacer

- 9. Hand brake shaft
- 10. Pawl
- 11. Plunger
- 12. Spring washer
- 13. Spring washers
- 14. Seal
- 15. Caliper cylinder

- 16. Piston
- 17. Seal
- 18. Dust boot
- 19. Complete caliper
- 20. Bleeder screw
- 21. Bleeder boot
- 22. Support bracket

EXPLODED VIEW OF REAR BRAKE CALIPER AND BRACKET COMPONENTS

ADJUSTMENT

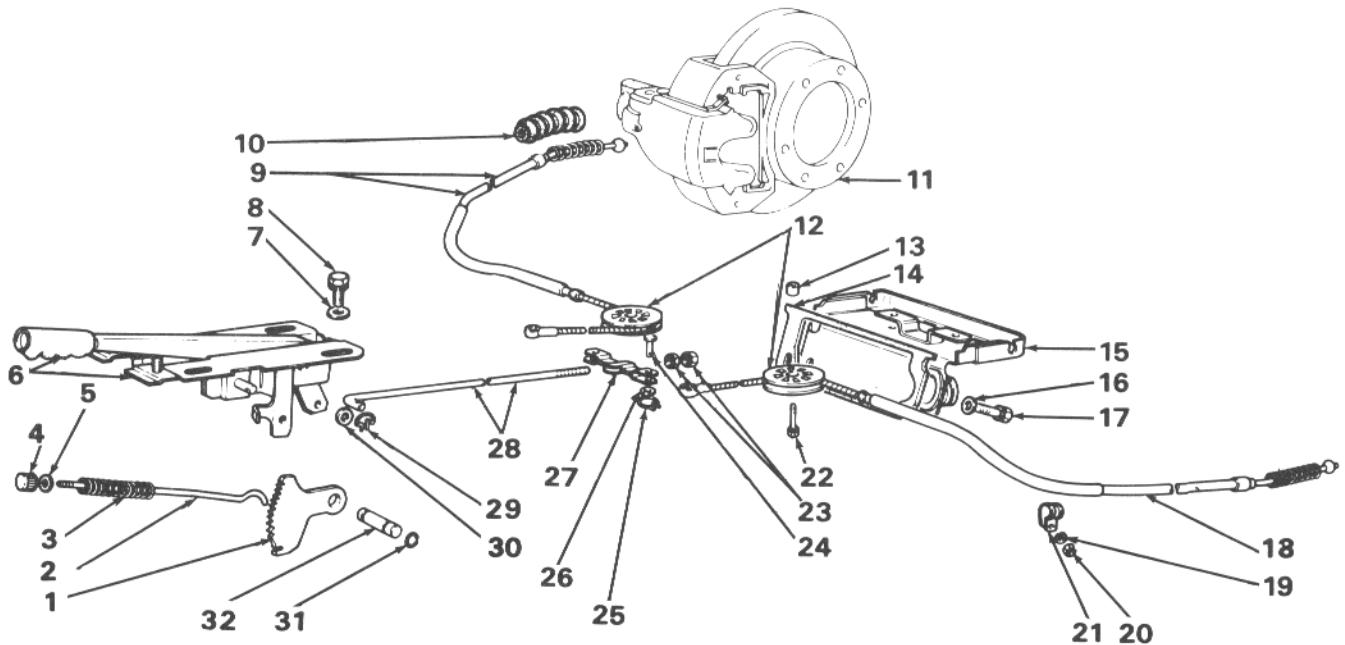
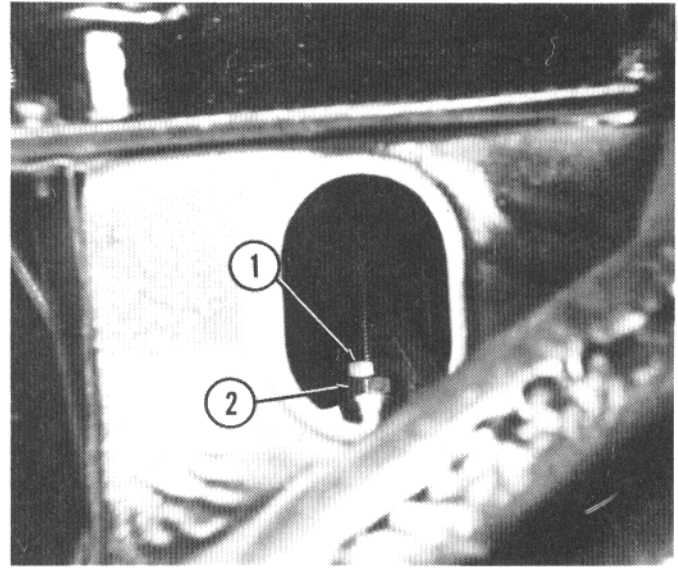
Press brake pedal a few times.

Starting from a released position, pull hand brake lever up three or four clicks.

From under car, remove rubber cover. Loosen locknut (1). Tighten adjusting nut (2) until wheels are locked (try to turn wheels manually). Tighten locknut.

Release hand brake. Check that wheels are free to turn.

1. Locknut 2. Adjusting nut



- | | | | |
|----------------|-------------|----------------|------------------|
| 1. Ratchet | 9. Cable | 17. Bolt | 25. Clip |
| 2. Rod | 10. Boot | 18. Cable | 26. Washer |
| 3. Spring | 11. Caliper | 19. Lockwasher | 27. Swinging arm |
| 4. Button | 12. Pulley | 20. Nut | 28. Tie rod |
| 5. Rubber ring | 13. Spacer | 21. Clamp | 29. Clip |
| 6. Lever | 14. Gasket | 22. Bolt | 30. Washer |
| 7. Washer | 15. Support | 23. Nuts | 31. Lock ring |
| 8. Bolt | 16. Washer | 24. Pin | 32. Pin |

Service Tools

33A

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A.56126 Wrench for brake line fittings

