SECTION 5F

PARKING BRAKE

NOTICE: Always use the correct fastener in the proper location. When you replace a fastener, use ONLY the exact part number for that application. General Motors will call out those fasteners that require a replacement after removal. General Motors will also call out the fasteners that require thread lockers or thread sealant. UNLESS OTHERWISE SPECIFIED, do not use supplemental coatings (paints, greases, or other corrosion inhibitors) on threaded fasteners or fastener joint interfaces. Generally, such coatings adversely affect the fastener torque and joint clamping force, and may damage the fastener. When you install fasteners, use the correct sequence and tightening specifications. Following these instructions can help you avoid damage to parts and systems.

CONTENTS

GENERAL DESCRIPTION

The parking brake is lever activated, cable applied and forces the brake shoes against the brake drum through the use of springs and a parking brake shoe lever.

LEVER

Figures 1 and 2

This mechanical parking brake assembly is activated by pulling up on the parking brake lever (Figure 2). This engages the parking brake through the parking brake cables. To release the parking brake, the parking brake lever must be gently pulled upward and the release button (on the top end of the lever) pushed in. This moves the pawl back, disengaging the teeth and allowing the lever to be lowered into the released position. This action releases the tension in the cables and the brake shoes.

CABLE SYSTEM

The twisted strand parking brake cables are covered by a plastic material which allows the cables to slide more freely. The cables run from the parking brake lever to both brake drums. The cables are connected to the lever by means of an equalizer. This equalizer ensures that braking tension is applied to both brake drums at the same time and with the same amount of pressure. The cable is secured to the underbody of the vehicle by protectors on the trailing rod, frame and crossmember.

"BRAKE" INDICATOR

The "BRAKE" indicator acts as a warning of problems in the brake system which may result in reduced braking capability. If the brake fluid level switch in the master cylinder closes due to low brake fluid level or one of the wheels loses brake fluid pressure, the indicator will illuminate to warn of a problem which needs immediate attention.

If the "BRAKE" indicator illuminates in combination with the "ABS" indicator, a problem has developed in the optional Antilock Brake System (ABS). This notify the driver that the ABS system is not functioning and normal base braking functions is also affected. For diagnostic and repair procedures of the ABS, refer to SECTION 5E1.

The "BRAKE" indicator also will illuminate when the ignition switch is turned to the "START" position. This is to indicate that the circuit is operational. If the ignition switch is in the "ON" position and the parking brake lever pulled up (parking brake switch closed) the indicator acts as a reminder to the driver that the parking brake is applied.

PARKING BRAKE SWITCH

The parking brake switch is mounted to the parking brake lever. The switch is open with the parking brake released. When the parking brake lever is pulled up, the switch closes, illuminating the "BRAKE" indicator. For parking brake switch diagnosis, refer to SECTION 8A.

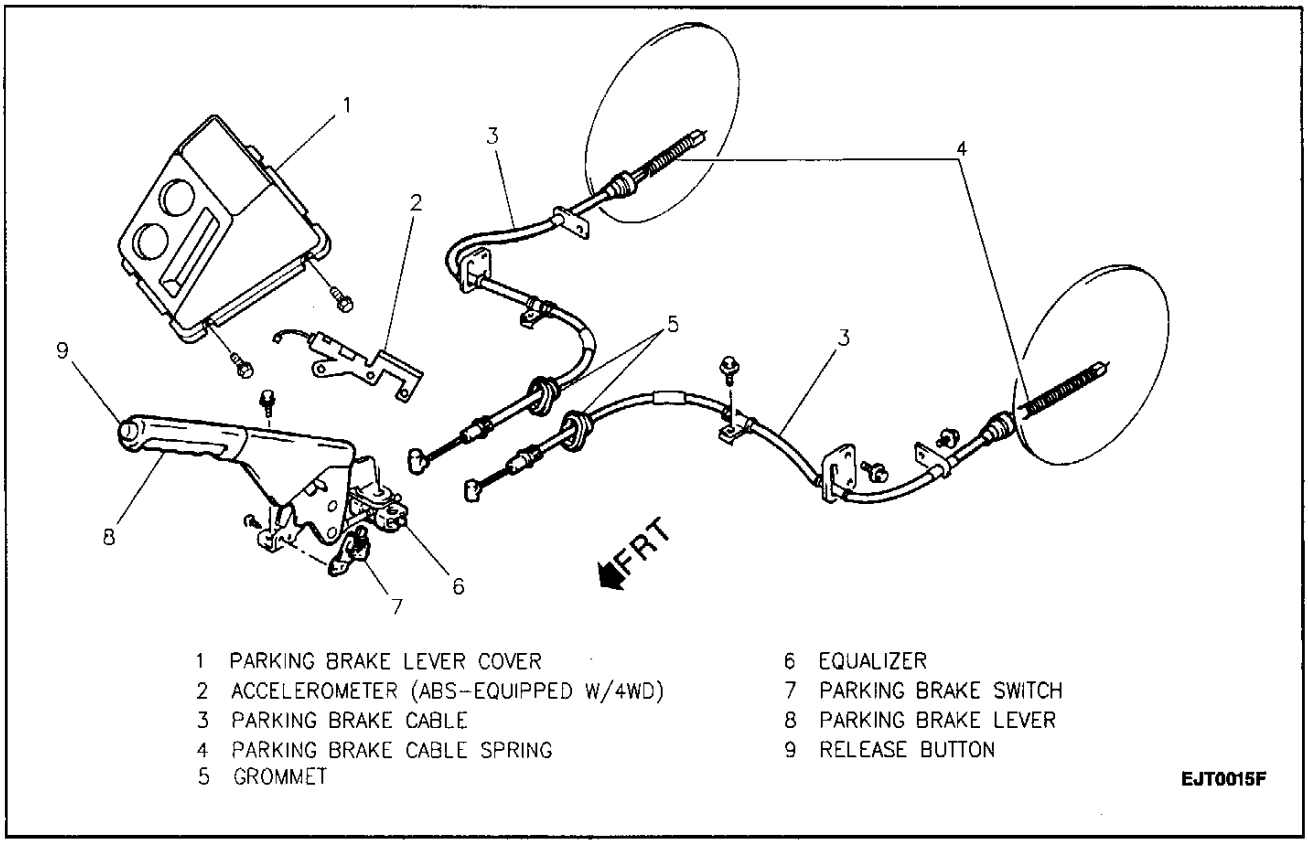


Figure 1—Parking Brake Assembly

MECHANICAL APPLY COMPONENTS

Figures 2, 3 and 4

When the parking brake lever is pulled up, the lower end swivels forward pulling the connecting rod (Figures 2 and 3). The equalizer (attached to the other end of the connecting rod) applies equal force to both parking brake cables (Figure 4). The cables, in turn,

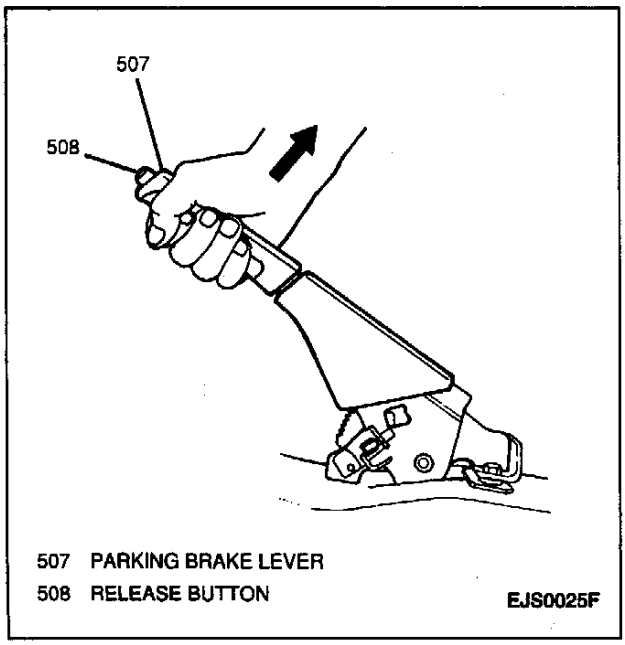


Figure 2—Applying Parking Brake

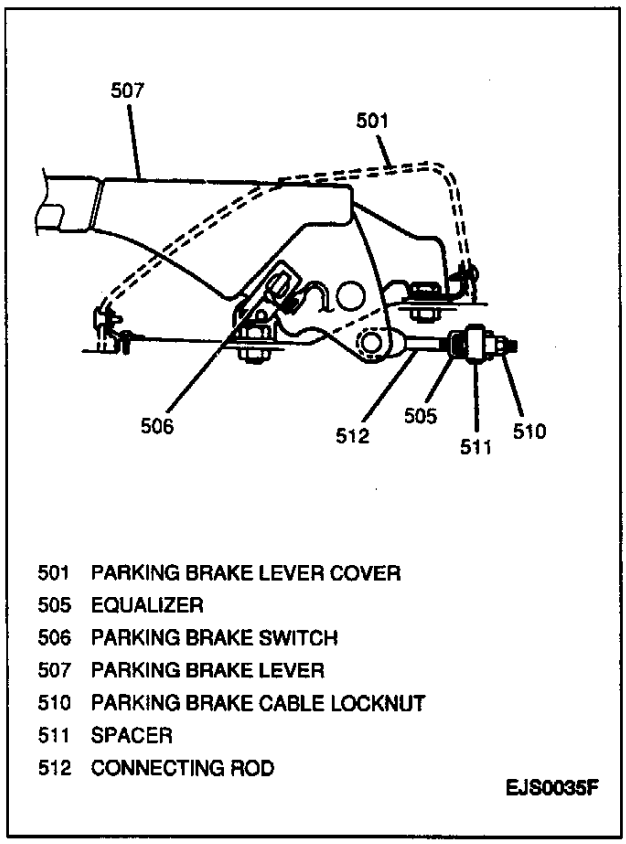


Figure 3—Parking Brake Lever Assembly

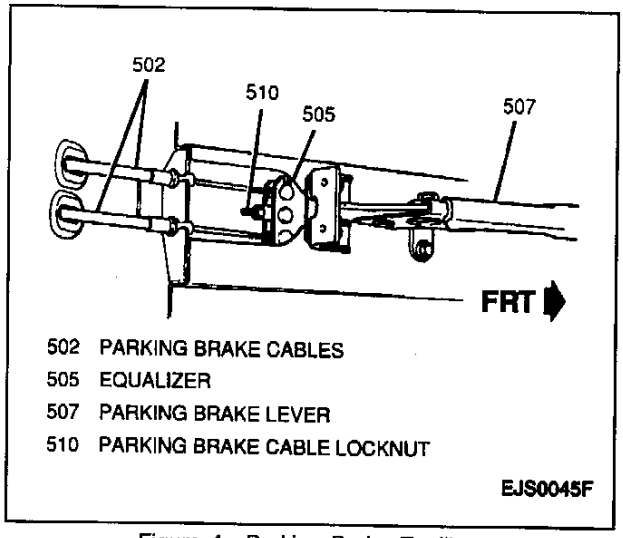


Figure 4—Parking Brake Equilizer

pull on the parking brake shoe levers in both brake drums. The swivel of the brake shoe lever pushes the rear (trailing) brake shoe against the drum, preventing the wheel and tire assembly from turning.

DIAGNOSIS

The parking brake assembly is designed to be completely applied before the parking brake lever completes its maximum travel. Approximately seven to nine "clicks" with 20 kg. (44 lbs.) of force should be audible before the lever reaches its maximum pull (parking brake is fully engaged). If the lever travel is outside of this range, the parking brake must be adjusted; refer to "Adjustment" later in this section.

If the parking brake is applied and cannot be released, look for any of the following:

- Corroded or "frozen" cable(s).
- Stuck brake shoe(s).
- Broken or binding cable guide(s).
- Malfunctioning release button.

If the parking brake lever moves freely through its entire range without resistance and without applying the parking brake, look for any of the following causes:

- Missing locknut from the equalizer.
- Parking brake cable(s) broken.
- Parking brake cable(s) disconnected at parking brake lever(s).

If the parking brake lever moves freely through its entire range with normal resistance but without applying the parking brake, listen for the "clicks" indicating the pawl is being engaged. If none are heard, the pawl assembly is broken and the lever must be replaced; refer to "Lever" later in this section. If "clicks" are heard, the parking brake is out of adjustment. For adjustment procedures, refer to "Adjustment" later in this section.

ON-VEHICLE SERVICE

LUBRICATION

The parking brake cables are encased in a plastic material which protects the cables from dirt or corrosion.

Important

- Plastic coated parking brake cables do not need lubrication.

Handling of these cables during servicing of the parking brake system requires a little extra care. Damage to the plastic coating will reduce corrosion protection and increased parking brake effort could result. Contact of the coating with sharp-edged tools or contact with sharp surfaces of the vehicle underbody should be avoided.

LEVER

Figure 5

Remove or Disconnect

1. Negative (-) battery cable.
2. Two screws, two plastic clips and parking brake lever cover from vehicle.
3. Parking brake switch electrical connector.
4. Parking brake cable locknut and spacer (Figure 5).
5. Two bolts and parking brake lever cover bracket from parking brake lever. If vehicle is equipped with ABS and 4WD, set aside Accelerometer.
6. One bolt, disengage parking brake connecting rod from equalizer and remove parking brake lever from vehicle.

Install or Connect

1. Parking brake lever to vehicle, engaging connecting rod to equalizer; secure lever with parking brake lever cover bracket, Accelerometer (if equipped) and three bolts.

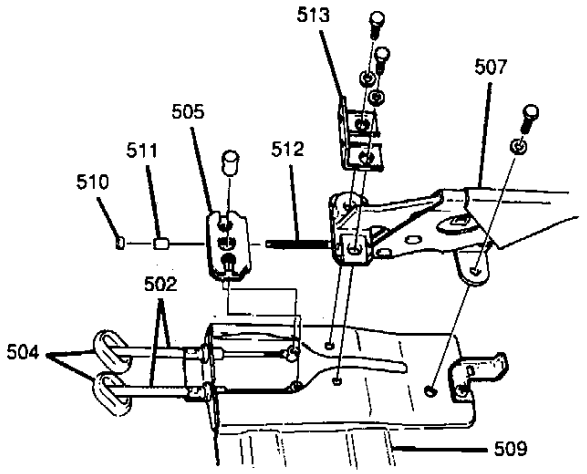
Tighten

- Parking brake lever bolts to 16 N.m (12 lbs. ft.).

2. Parking brake cable spacer and locknut to parking brake lever. Do not tighten fully.
3. Parking brake switch electrical connector.
4. Adjust parking brake. Refer to "Adjustment" later in this section.
5. Parking brake lever cover; secure with two screws and two plastic clip.
6. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N.m (11 lbs. ft.).



502 PARKING BRAKE CABLES
504 GROMMETS
505 EQUALIZER
507 PARKING BRAKE LEVER
509 VEHICLE FLOOR
510 PARKING BRAKE CABLE LOCKNUT
511 SPACER
512 CONNECTING ROD
513 PARKING BRAKE LEVER COVER BRACKET

EJS0055F

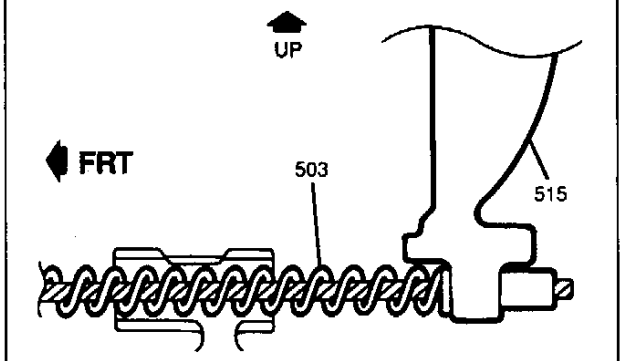
Figure 5—Parking Brake Lever

CABLES

Figures 1 and 6 through 8

Remove or Disconnect

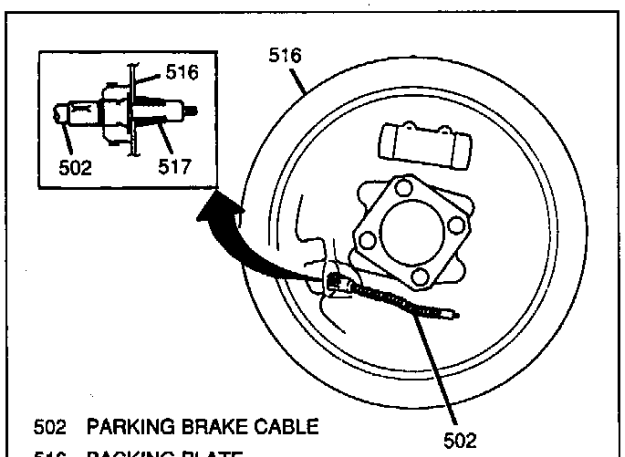
1. Two screws, two plastic clip and parking brake lever cover from vehicle.
2. Parking brake cable locknut and spacer.
3. Connecting rod from equalizer.
4. Parking brake cable from equalizer.
5. Raise and suitably support vehicle. Refer to SECTION 0A.
6. Rear tire and wheel assembly. Refer to SECTION 3E.
7. Brake drum and brake shoes. Refer to SECTION 5C1.
8. Parking brake cable from parking brake shoe lever (Figure 6).
9. Cable stopper ring and parking brake cable from brake backing plate (Figure 7).



503 PARKING BRAKE CABLE SPRING
515 PARKING BRAKE SHOE LEVER

EJS0065F

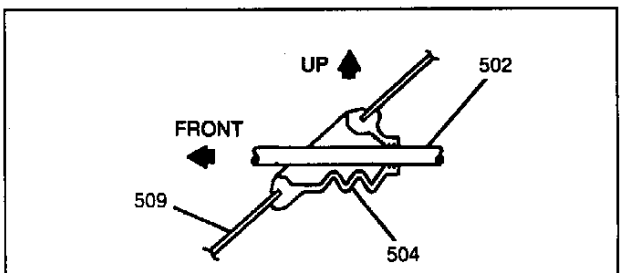
Figure 6—Parking Brake Cable at Parking Brake Shoe Lever



502 PARKING BRAKE CABLE
516 BACKING PLATE
517 CABLE STOPPER RING

EJS0075F

Figure 7—Parking Brake Cable at Backing Plate



502 PARKING BRAKE CABLE
504 GROMMET
509 VEHICLE FLOOR

EJS0085F

Figure 8—Parking Brake Cable Grommet

10. Four bolts and parking brake cable from protectors on trailing rod, frame and crossmember.
11. Parking brake cable and grommet from floor (Figure 8).

Important

- White ring at rear end of parking brake cable identifies left-hand cable.

Install or Connect

1. Parking brake cable to protectors on trailing rod, frame and crossmember. Secure with four bolts.

Tighten

- Protector bolts to 10 N·m (89 lbs. in.).

2. Parking brake cable and grommet to floor.
3. Parking brake cable to backing plate; secure with cable stopper ring.
4. Parking brake cable to parking brake shoe lever.
5. Brake shoes and brake drum. Refer to SECTION 5C1.
6. Rear wheel and tire assembly. Refer to SECTION 3E.
7. Lower vehicle.
8. Parking brake cable to equalizer.
9. Equalizer to connecting rod; secure with spacer and locknut. Do not tighten fully.
10. Adjust parking brake. Refer to "Adjustment" later in this section.
11. Parking brake lever cover to vehicle; secure with two screws and two plastic clip.

PARKING BRAKE ADJUSTMENT

Figure 2

Adjust

Important

- Ensure the following conditions are met before cable adjustment.
  - A. No air is trapped in brake system.
  - B. Brake pedal travel is within specifications.
  - C. Brake pedal has been depressed a few times with about 30 kg (66 lbs.) load.
  - D. Parking brake lever has been pulled up a few times with about 20 kg (44 lbs.) force and completely released.
  - E. Rear brake shoes are not worn beyond limit and self-adjusting mechanism operates properly.
- Loosen or tighten locknut to adjust parking brake lever until parking brake is applied with between 7 to 9 clicks on parking brake lever with about 20 kg (44 lbs.) force (Figure 2).

INDICATOR

Refer to SECTION 8C for "BRAKE" indicator bulb replacement procedures.

SPECIFICATIONS

GENERAL SPECIFICATIONS

Brake Lever Adjustment	7 to 9 "clicks" with about 20 kg (44 lbs.) force

FASTENER TIGHTENING SPECIFICATIONS

Parking Brake Lever Bolts	16 N·m (12 lbs. ft.)
Protector Bolts	10 N·m (89 lbs. in.)
Negative (-) Battery Cable-to-Negative (-) Battery Terminal Retainer	15 N·m (11 lbs. ft.)