CHAPTER 8

Parking Brakes

Upon completion and review of this chapter, you should be able to:

- ❑ Explain the function of parking brakes.
- ❑ Identify the basic types of parking brake systems.
- ❑ Identify types of parking brake controls.
- ❑ Identify the types of cables used to operate the parking brakes.
- ❑ Identify and explain the operation of disc brake, drum brake, and transmission driveshaft parking brakes.

Introduction

After the service brakes stop the moving car, the parking brakes hold it stationary. Parking brakes are often mistakenly called “emergency” brakes, but parking brakes are not intended to be used as an alternative to the service brakes to stop vehicles. The stopping power available from parking brakes is much less than from service brakes. Because the parking brakes work only on two wheels or on the driveline, much less friction surface is available for braking energy. In the rare case of total hydraulic failure, the parking brakes can be used to stop a moving vehicle, but their application requires careful attention and skill to keep the vehicle from skidding or spinning.

The parking brake system is generally not a part of the hydraulic braking system. It is either mechanically operated by cables and levers to apply the rear brakes, or it can be operated mechanically or by its own hydraulic system to activate a drum brake on the transmission or driveshaft.

Most parking brake systems use the service brake shoes or disc pads. Systems that use a separate set of shoes or pads, such as transmission or driveshaft parking brakes, are called independent parking brakes.

Parking brake actuators may be operated either by hand or by foot. Many small and medium-size vehicles use a hand-operated parking brake lever mounted in the console between the front seats (Figure 8-1). When the lever is pulled up, the parking brakes are applied. A ratchet-and-pawl mechanism acts to keep the brake lever applied. To release the lever and the brakes, a button on the lever is pressed and the lever is moved to unlock the ratchet. Some medium trucks and mobile construction equipment use the hydraulic service brakes as the parking brakes. With the vehicle/equipment stopped and the service brakes applied, an electric solenoid is activated. The solenoid closes the hydraulic lines between the wheels and master cylinders, effectively locking all wheels. The service brake pedal can be released until it is time to unlock the wheels.

Figure 8-2 shows a typical foot-operated pedal with a ratchet and pawl. Stepping on the pedal applies the brakes and engages the ratchet and pawl. A release handle and rod or cable is attached to the ratchet release lever. When the release handle is pulled, the pawl is lifted off the ratchet to release the brakes.

Some vehicles automatically disengage the parking brakes whenever the transmission is placed in drive or reverse; other vehicles release the brakes only when the transmission is placed in drive. The most common way to release the parking brakes automatically is with a vacuum motor (Figure 8-3). Vacuum is applied to the vacuum motor to move the release rod and release the brakes when the transmission is placed into gear. Figure 8-4 is a drawing of the vacuum circuit. The parking brake release lever can be operated manually if the automatic release mechanism fails.

This chapter explains the most common types of parking brake levers, handles, cables, and other linkage parts as well as warning lamps and switches. The final sections of this chapter describe typical drum, disc, and drive shaft parking brake assemblies and their operation.

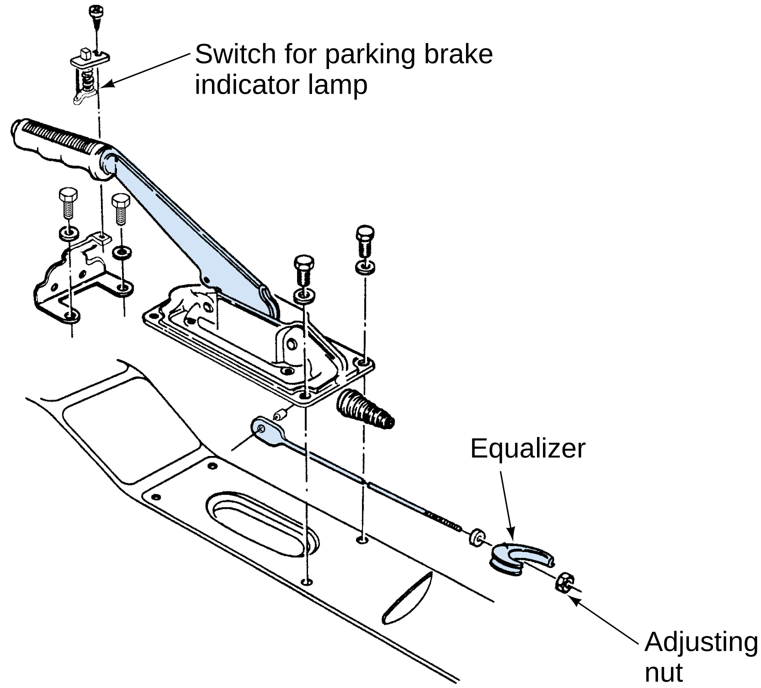

Figure 8-1 A typical hand-operated parking brake control unit. (Courtesy of Volkswagen of America, Inc.)

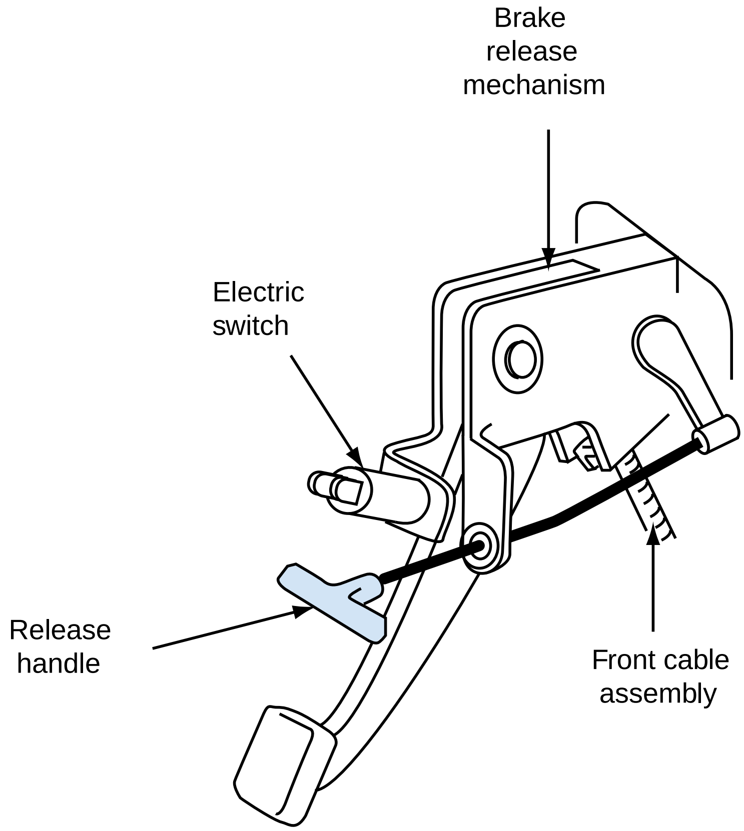

Figure 8-2 A typical foot-operated parking brake with a mechanical release handle.

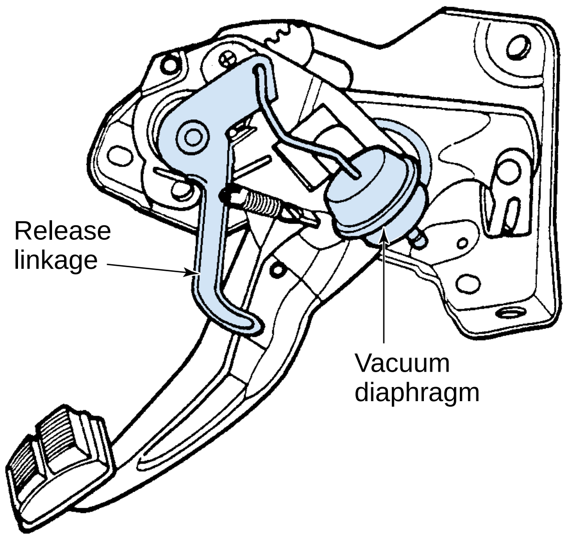

Figure 8-3 A typical foot-operated parking brake with a vacuum release mechanism. (Courtesy of Ford Motor Company)

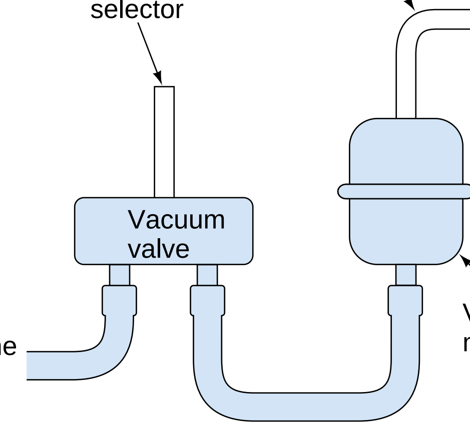

Figure 8-4 A simplified vacuum release circuit.

Parking Brake Controls—Levers and Pedals

The parking brakes on all late-model cars and light trucks are applied by a pedal or a lever, which is often called the **parking brake control.** Many older vehicles and a few current medium-duty trucks have a handle under the instrument panel that is pulled to apply the parking brakes (Figure 8-5). On some older vehicles, Chryslers in particular, the parking brakes should be applied before shifting the automatic transmission into park. Shifting into park without the parking brakes applied places the weight of the vehicle on the transmission parking gear making it very difficult to shift from park. Aside from the design and operation of the control handle, the linkage for this type of parking brake works the same as lever-operated or pedal-operated brakes.

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parking brake control
pedal or lever used to apply the parking brakes

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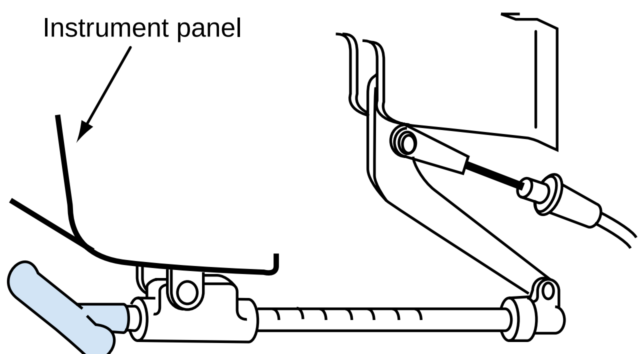

Figure 8-5 Older vehicles and some late-model trucks have a handle under the instrument panel to operate the parking brakes.

Most parking brakes use the service brake shoes or pads to lock the rear wheels after the vehicle is stationary. The parking brakes can be set most securely if the service brake pedal is pressed and held while the parking brake control lever or pedal is applied. The hydraulic system applies greater force to the shoes or pads than the parking brake mechanical linkage can apply. When the hydraulic system is used to set the brakes, the parking brake linkage simply takes up slack in the system and holds the shoes or pads tightly against the drums or rotors.

Levers

The control lever for lever-operated parking brakes usually is installed between the two front seats. As the lever is pulled upward, the ratchet mechanism engages to keep tension on the cables and hold the brakes applied. To release the brakes, the spring-loaded button in the end of the lever is pressed and held while the lever is lowered to the floor.

The lever-operated parking brakes on some Chevrolet Corvettes are examples of a design in which the lever drops back to the floor after the brakes are applied. The cables and linkage hold the brakes applied, but the lever returns to the released position. To actually release the parking brakes, you must pull up on the lever until you feel some resistance; then press and hold the button in the end of the lever while moving the lever back to the released position. The parking brake control lever on these Corvettes is located between the driver's seat and the door sill. If the control lever stayed in the upward position with the brakes applied, it would be difficult to climb in and out of the car.

Pedals

In a pedal-operated parking brake system, the pedal and its release mechanism are mounted on a bracket under the left end of the instrument panel. As the pedal is pushed downward by the driver's foot, the ratchet mechanism engages to keep tension on the cables and hold the brakes applied. A spring-loaded handle or lever is pulled to release the brakes. A return spring moves the pedal to the released position. A rubber bumper is used to absorb the shock of the released parking brake pedal. If this bumper is missing, the pedal will break the warning light switch after a few operations.

FMVSS 105 requires that parking brakes must hold the vehicle stationary for 5 minutes on a 30-percent grade in both the forward and reverse directions (Figure 8-6). FMVSS 105 also specifies that the force needed to apply the parking brakes cannot exceed 125 pounds for foot-operated brakes or 90 pounds for hand-operated brakes. Some heavy full-size cars built in the late 1970s and early 1980s had trouble meeting the brake-holding requirements without exceeding the allowed maximum application force.

Manufacturers solved the problem with a pedal that had a very high leverage ratio but required two or three applications with the foot to set the brakes completely. The first pedal stroke partially applied the brakes, and the ratchet mechanism held the linkage in this position when the pedal was released. The second or third pedal stroke applied the brakes completely. A single pull on the release handle released the brakes.

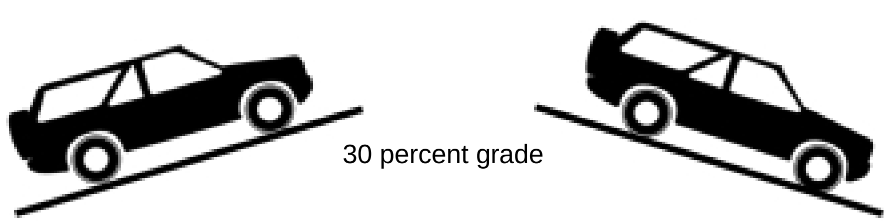

Figure 8-6 The parking brake must hold the vehicle on a 30 percent grade for 5 minutes in both the forward and reverse directions.

Automatic Parking Brake Release

An automatic parking brake release mechanism is a "luxury" feature offered by some carmakers. It is used only with pedal-operated parking brakes on cars with automatic transmissions.

A vacuum motor or servo is attached to the release mechanism. Vacuum is applied to the servo through a solenoid-operated valve that is actuated when the engine is running and the transmission is shifted into gear from park or neutral. A rod connects the servo to the parking brake release lever. When vacuum is applied to the servo, it pulls the rod to release the brakes.

The automatic parking brake release is a supplement to the manual release handle, not a replacement for it. All parking brakes with this feature also have a manual release handle so that the brakes can be released in case the servo or its vacuum supply fail. The manual handle or lever is not easily visible from the driver's seat and is seldom used. Some drivers do not even know it exists. Although the automatic release mechanism is a luxury feature, it can help to prevent brake damage from driving with a partially engaged parking brake.

Warning Lamps

All brake systems on passenger cars and light trucks built since 1967 have a warning lamp on the instrument panel to indicate a failure in one-half of the hydraulic system. On many vehicles, the same warning lamp will light to indicate a low fluid level in the master cylinder. Most vehicles also use this lamp to indicate that the parking brake is applied. A normally open switch on the control linkage closes as the pedal is pressed or the lever is pulled. The lamp will not light, however, unless the ignition is on. Parking brake lamp switches are adjusted so that the lamp stays lit until the brake is released completely.

The warning light may also be wired to a low brake fluid level switch in the master cylinder.

Parking Brake Linkage

Parking brake linkage transmits force equally from the control pedal or lever to the shoes or pads at the rear wheels or to the parking brakes on the driveline. There are as many different linkage designs as there are different vehicles, but all have the same job and work in basically the same way. The following paragraphs explain the cables, rods, levers, and equalizers or adjusters used in parking brake linkage.

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Cables

Most parking brakes use cables to connect the control lever or pedal to the service brakes (Figure 8-7). Parking brake cables must transmit hundreds of pounds of force without jamming, breaking, or stretching. Therefore, they are made of high-strength strands of steel wire that are tightly twisted together. The ends of the cables have different kinds of connectors that attach to other parts of the linkage. Some cables have threaded rods or clevises at their ends. Others have ball or thimble-shaped connectors that fit into holes and slots on other parts of the linkage.

The front cable connects the parking brake lever or pedal to the **equalizer,** which provides balanced braking force to each wheel. The equalizer is only a lever mounted on a pivot or a U-shaped grooved guide. Pulling the front cable moves the lever or guide. The lever or guide transmits the force equally to the two wheel cables (Figure 8-8).

equalizer part of the parking brake linkage that balances application force and applies it equally to each wheel

Some vehicles have a three-part cable installation, which includes an intermediate cable that passes through the equalizer. Typically, one of the two rear cables is attached directly to this intermediate cable with a connector (Figure 8-9). The other rear cable is attached to the intermediate cable with some kind of cable adjuster, usually a turn buckle.

Some lever-operated parking brakes have a separate cable for each rear wheel attached to the control lever. Each cable is adjusted separately, and an equalizer is not necessary. The wheel

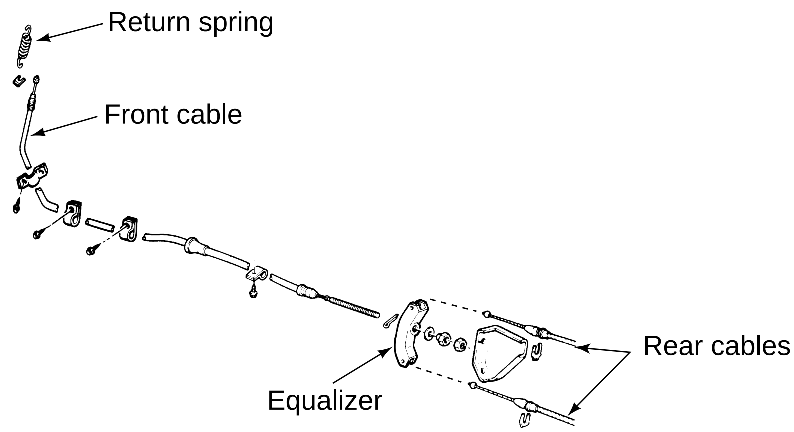

Figure 8-7 Typical parking brake cable installation. (Courtesy of Mitsubishi Motor Sales of America, Inc.)

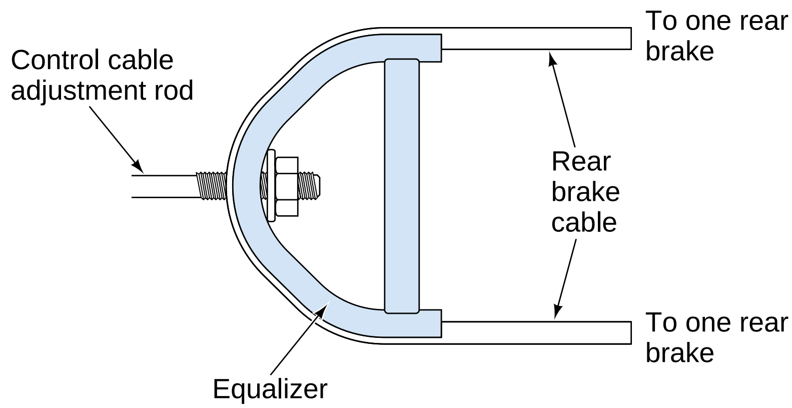

Figure 8-8 Typical equalizer installation

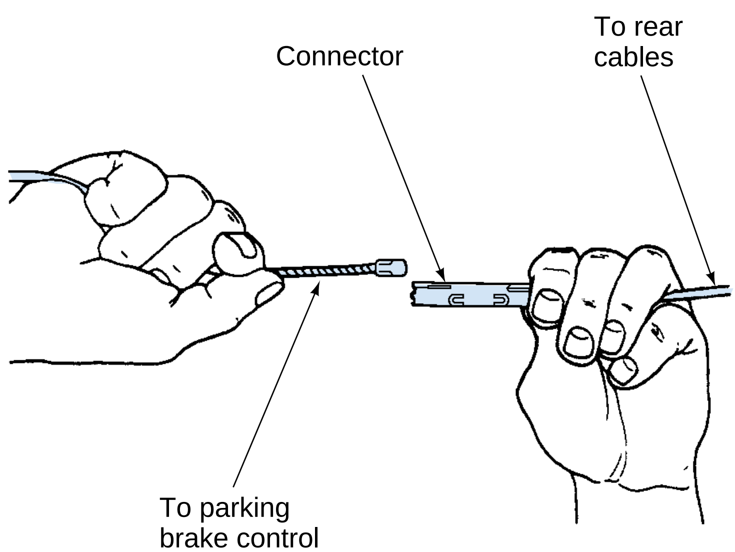

Figure 8-9 Parking brake cable connector. (Courtesy of Ford Motor Company)

cables run from each wheel all the way to the pedal or lever mechanism within the passenger compartment. Adjustment of the cables may be made at the pedal or lever.

Cable retainers and hooks maintain cable position on the rear axle, frame, and underbody of the vehicle (Figure 8-10). These retainers allow the cable to flex and move at their point of body attachment and help the equalizer to provide its equalizing action.

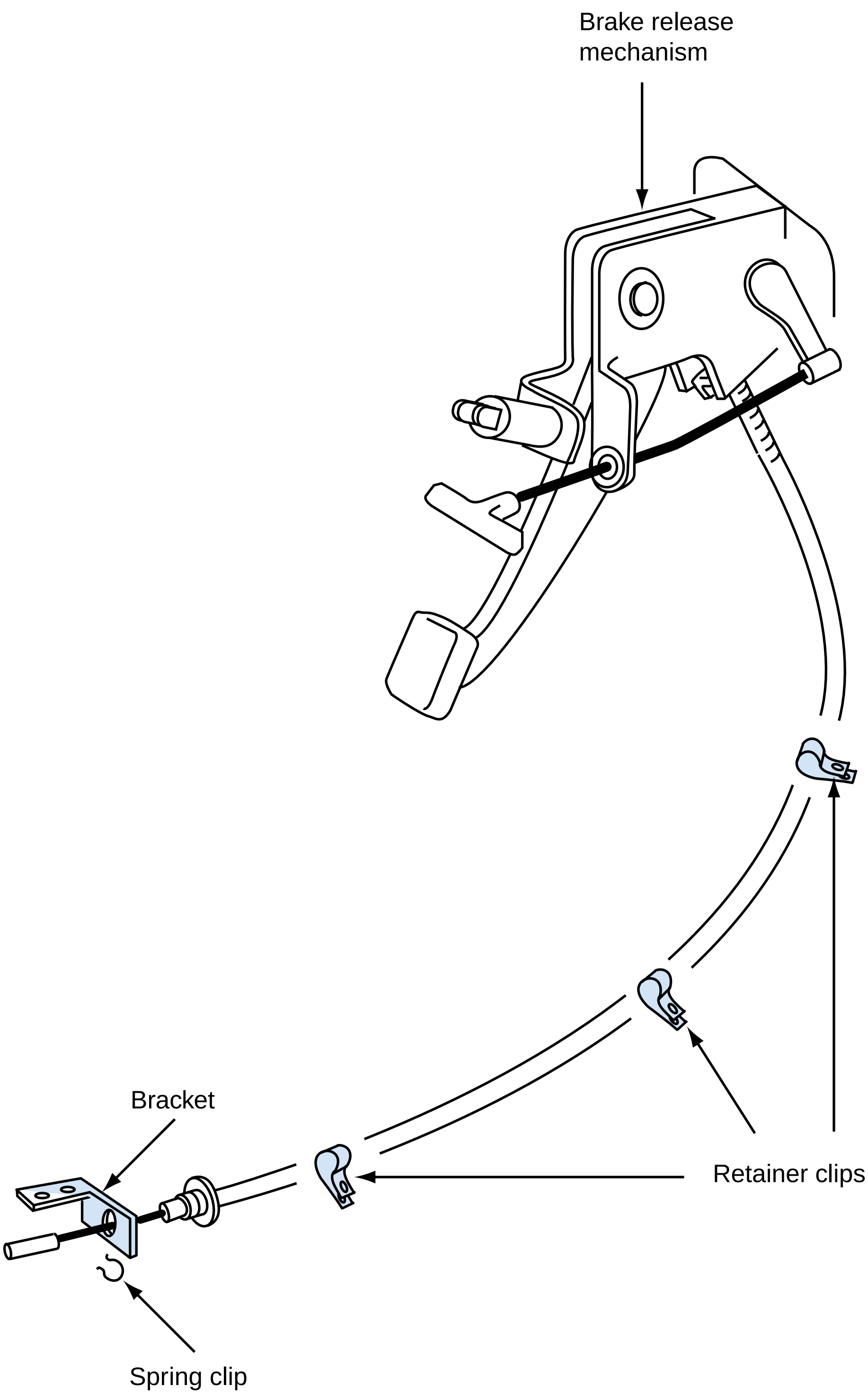

Figure 8-10 Cable retainers and clips hold the cables in position.

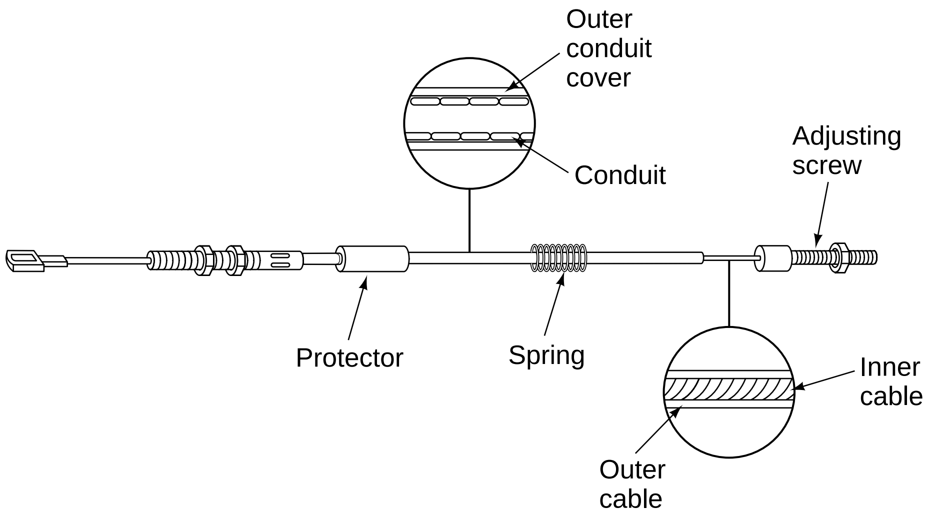

Figure 8-11 Typical cable and conduit.

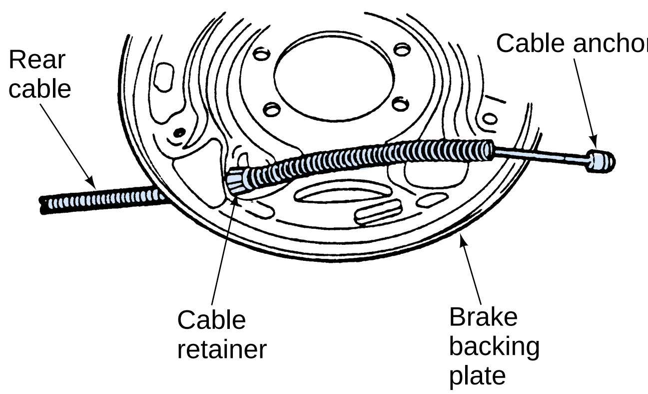

Figure 8-12 A cable retainer secures the conduit to the backing plate.

conduit
flexible metal housing or jacket that houses the parking brake cables to protect them from dirt, rust, abrasion, and other damage

Conduits are common in other systems as well. Check the area around your house or shop and note the conduits that protect the electrical wiring. Parking brake conduits perform the same protective function for the cables.

Most control cables and rear brake cables are partially covered with a flexible metal **conduit** or housing (Figure 8-11). The cable slides inside the conduit and is protected from chaffing or rubbing against the underside of the vehicle. One end of the cable conduit is fastened to a bracket on the underside of the vehicle with some type of retaining clip, and the other end is attached to the brake (Figure 8-12). Many cables are coated with nylon or plastic, which allows them to slide more easily through the conduit. The coatings help to reduce corrosion and contamination and make parking brake application easier.

Rods

The most common use of solid steel rods in parking brake linkage is in lever-operated systems to span a short distance in a straight line to an equalizer or intermediate lever. The linkage rod is usually attached to the control lever by a pin. The other end of the rod is often threaded to provide linkage adjustment.

Levers

Chapter 2 of this *Classroom Manual* explains how levers are used to multiply force in mechanical linkage. Mechanical leverage is necessary in parking brake linkage to make brake application easy for the driver. The parking brake pedals and control levers multiply the force applied by the driver. Many parking brake installations also have an **intermediate lever** under the vehicle body to increase the application force even more. The intermediate lever also is designed to work with the equalizer to ensure that force is applied equally to both rear wheels. Intermediate levers are most common on large cars and trucks that need greater force to apply the parking brakes.

intermediate lever part of the parking brake linkage under the vehicle that increases application force and works with the equalizer to apply it equally to each wheel

Equalizers and Adjusters

Parking brakes that use the service brakes—either shoes or pads—to lock the wheels must apply equal force to each wheel. If application force is unequal, the parking brakes may not hold the vehicle safely. To meet this requirement, most parking brake linkage installations include an equalizer mechanism. The equalizer also usually contains the linkage adjustment point.

The simplest example of an equalizer is a U-shaped cable guide attached to a threaded rod. The rear cable (or an intermediate cable) slides back and forth on the guide to balance the force applied to each wheel. In some installations, the equalizer guide is attached to a lever to increase application force.

Another kind of equalizer is installed in a long cable that runs from the driver's position to one rear wheel. A shorter cable runs from the equalizer to the other wheel. When the parking brakes are applied, the long cable applies its brake directly and then continues to move forward after the shoes or pads lock the wheel. The continued forward motion pulls the equalizer and the shorter cable to lock the brake at the other wheel.

Rear Drum Parking Brakes

Rear drum parking brakes that use the rear service brakes to lock the wheels are the most common kind of parking brake system. Mechanical linkage that works with drum brake shoes is a relatively simple and economical design, and the self-energizing action of the brake shoes provides excellent holding power.

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Figure 8-13 shows a typical parking brake installation with rear drum brakes. The brake cable runs through a conduit that goes through the backing plate. The cable end is attached to the lower end of the parking brake lever. The parking brake lever is hinged at the top of the web of the secondary or trailing shoe and connects to the primary or leading shoe through a strut. When activated, the lever and strut move the shoes away from both the anchor points and into contact with the brake drum (Figure 8-14). When tension on the cable is released, the return springs move the shoes back to their unapplied positions.

The details of parking brake parts vary with different brake designs, but all work in the same way basically. Many parking brakes include various springs and clips to prevent rattles and to hold the parts in alignment.

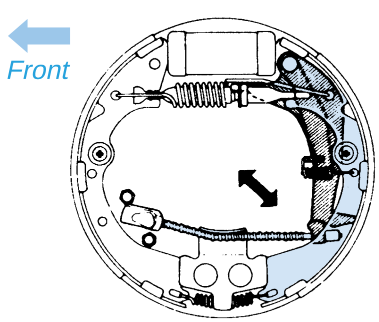

Figure 8-13 A parking brake is applied by a lever working on the secondary shoe.

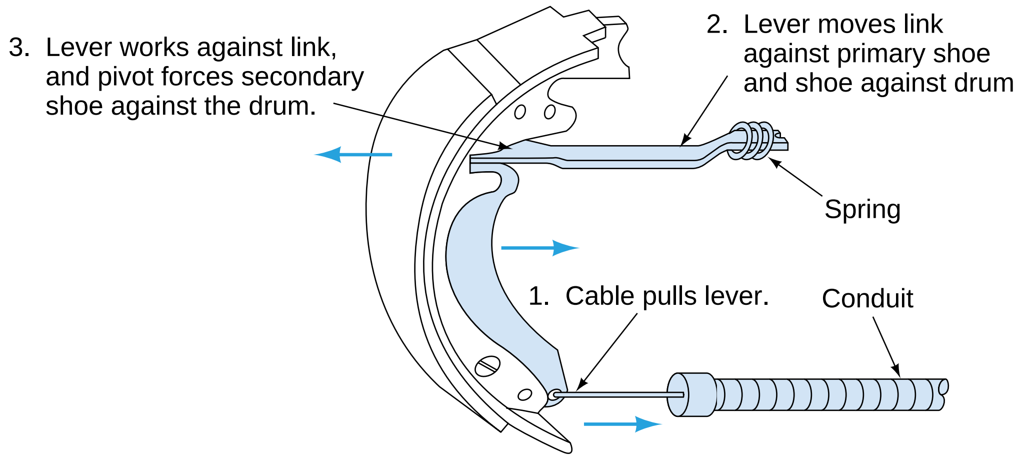

Figure 8-14 Parking brake lever and strut operation.

A BIT OF HISTORY

A historic cause of anxiety for novice drivers learning to cope with manual transmissions is learning how to start from a complete stop, going up hill. Many student drivers panic while trying to hold the brake pedal, release the clutch, and apply the throttle at the same time. If only they had a third foot, life would be so much easier.

In 1936, the Wagner Electric company patented the *NoRol* hill holder, which first appeared on Studebaker models of that year. The *NoRol* hill holder consisted of linkage from the clutch pedal to the brake master cylinder that maintained hydraulic pressure after the brake pedal was released and until the clutch was engaged. Pontiac and Graham also offered versions of the hill holder as optional equipment, and it continued as standard on Studebakers with manual transmissions through 1964. In the early 1980s, several Subaru models had similar automatic hill-holding devices.

Rear Disc Parking Brakes

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Two different types of parking brakes are used with rear disc brakes: auxiliary drum parking brakes and caliper-actuated parking brakes. Both are more complicated designs than parking brakes that are part of rear drum service brakes.

Auxiliary Drum Parking Brakes

Fixed-caliper rear disc brakes, such as those used on early Corvettes, and some floating or sliding caliper rear disc brakes have a small drum cast into each rotor (Figure 8-15). A pair of small brake shoes is mounted on a backing plate that is bolted to the axle housing or the hub carrier. These parking brake shoes operate independently from the service brakes. They are applied by linkage and cables from the control pedal or lever. The cable at each wheel operates a lever and strut that apply the shoes in the same way that rear drum parking brakes work. These auxiliary drum parking brakes must be adjusted manually with star wheels that are accessible through the backing plate or through the outboard surface of the drum. They do not have self-adjusters.

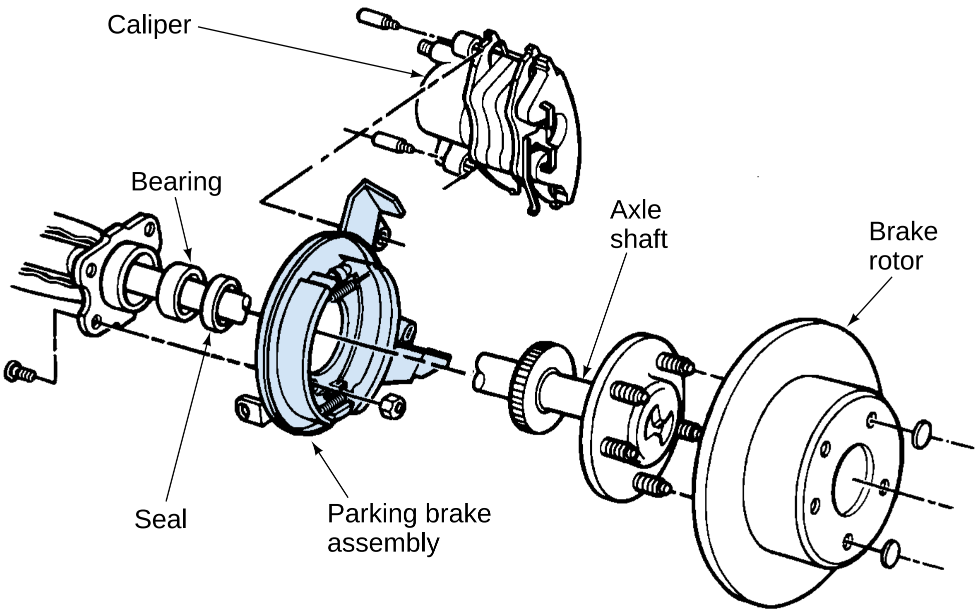

Figure 8-15 An auxiliary parking brake installation for rear disc brakes. (Courtesy of Ford Motor Company)

Caliper-Actuated Parking Brakes

Most floating or sliding caliper rear disc brakes have components that mechanically apply the caliper piston to lock the pads against the rotors for parking. All caliper-actuated parking brakes have a lever that protrudes from the inboard side of the caliper. The caliper levers are operated by linkage and cables from the control pedal or lever. As with most brake assemblies and subassemblies, detail differences exist from one brake design to another. The two most common kinds of caliper-actuated parking brakes are the **screw-and-nut** type and the **ball-and-ramp** type. A few imported cars have a third kind that uses an **eccentric** shaft and a rod to apply the caliper piston. This type is not as common as the first two, however. An eccentric acts like a cam. One portion of the shaft is oval shaped. As the shaft turns, the high part of the oval pushes the operating rod out of applying the brakes.

Assuming that the driver does not drive with the shoes of the drum within, disc parking brakes will last the life of the car. However, they may get corroded over a period and should be checked when servicing the rear service brakes.

Screw-and-Nut Operation. General Motors' floating caliper rear disc brakes are the most common example of the screw-and-nut parking brake mechanism (Figure 8-16). The caliper lever is attached to an actuator screw inside the caliper that is threaded into a large nut. The nut, in turn, is splined to the inside of a large cone that fits inside the caliper piston. When the parking brake is applied, the caliper lever rotates the actuator screw. Because the nut is splined to the inside of the cone, it cannot rotate so it forces the cone outward against the inside of the piston. Movement of the nut and cone forces the piston outward. Similarly, the piston cannot rotate because it is keyed to the brake pad, which is fixed in the caliper. The piston then applies the inboard brake pad, and the caliper slides as it does for service brake operation and forces the outboard pad against the rotor.

An adjuster spring inside the nut and cone rotates the nut outward when the parking brakes are released to provide self-adjustment. Rotation of the nut takes up clearance as the brake pads wear.

ball and ramp common kind of caliper-actuated parking brakes

screw and nut common kind of caliper-actuated parking brakes

eccentric not round or concentric

Ball-and-Ramp Operation. Ford's floating caliper rear disc brakes are the most common example of the ball-and-ramp parking brake mechanism (Figure 8-17). The caliper lever is attached to

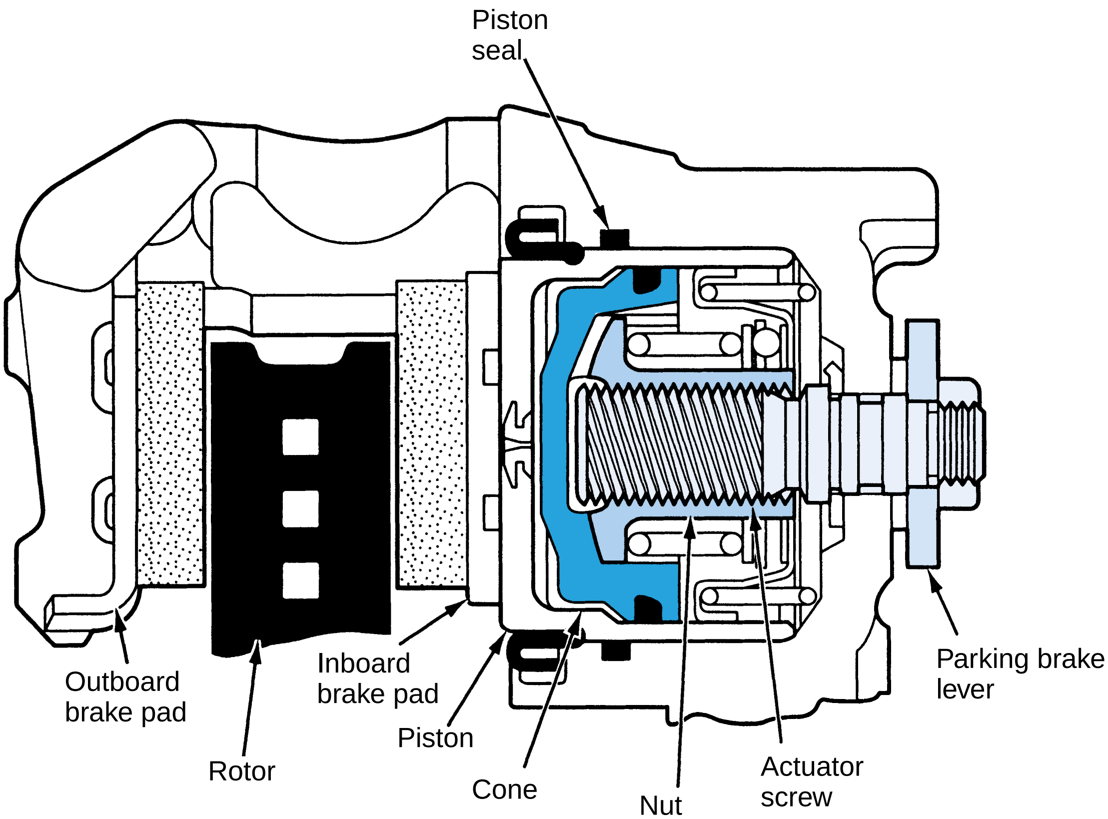

Figure 8-16 A GM screw-and-nut parking brake mechanism for rear disc brakes. (Courtesy of General Motors Corporation, Service Operations)

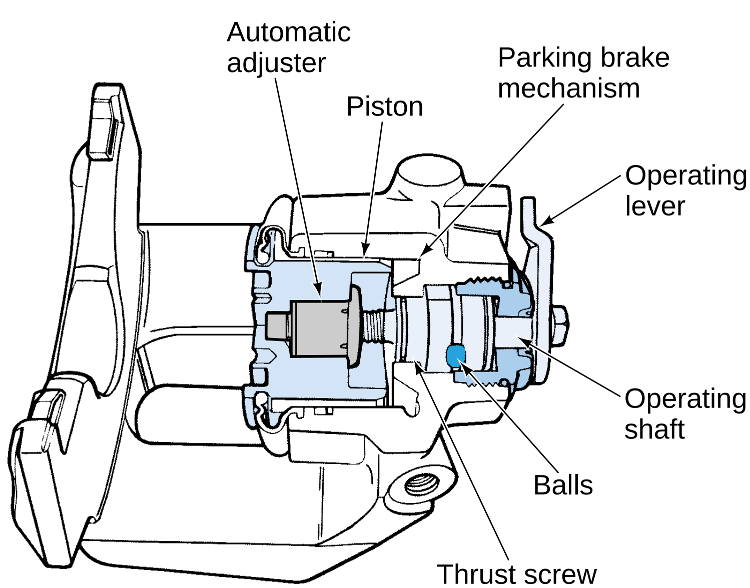

Figure 8-17 A Ford ball-and-ramp parking brake mechanism for rear disc brakes. (Courtesy of Ford Motor Company)

a shaft inside the caliper that has a small plate on the other end. Another plate is attached to a thrust screw inside the caliper piston. The two plates face each other, and three steel balls separate them. When the parking brake is applied, the caliper lever rotates the shaft and plate. Ramps in the surface of the plate force the balls outward against similar ramps in the other plate. As the plates move farther apart, the thrust screw forces the piston outward. The thrust screw cannot rotate because it is keyed to the caliper. The piston then applies the inboard brake pad, and the caliper slides as it does for service brake operation and forces the outboard pad against the rotor.

When the caliper piston moves away from the thrust screw, an adjuster nut inside the piston rotates on the screw to take up clearance and provide self-adjustment. A drive ring on the nut keeps it from rotating backward.

Driveline Parking Brakes

Until 1960, Chrysler used an external-band parking brake on its cars and light trucks (Figure 8-18, Item A). A brake drum was mounted on the transmission output shaft, and linkage operated a band that contracted around the outside of the drum to lock the drive shaft. Driveline parking brakes are used today on some light- and medium-duty trucks, but they use internally expanding shoes that are forced against the inside of the drum (Figure 8-18, Item B).

The brake shoes and backing plate are mounted on the rear of the transmission housing, and the brake drum is attached to the drive shaft. When the parking brake is applied, levers and struts attached to the brake shoes move them into contact with the brake drum. This action prevents the drum and driveshaft from turning to keep the vehicle from moving. In many motor homes, this type of parking brake is operated by either a foot pedal or a hydraulic cylinder controlled by the transmission gear selector, or by both (Figure 8-19).

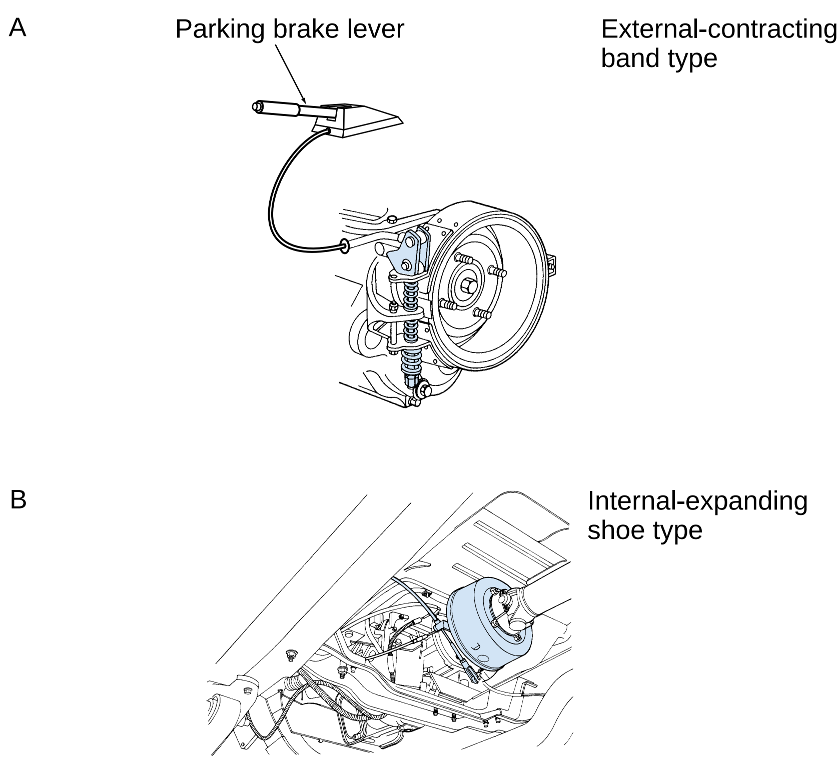

Figure 8-18 Two types of driveline or transmission parking brakes. (Courtesy of General Motors Corporation, Service Operations)

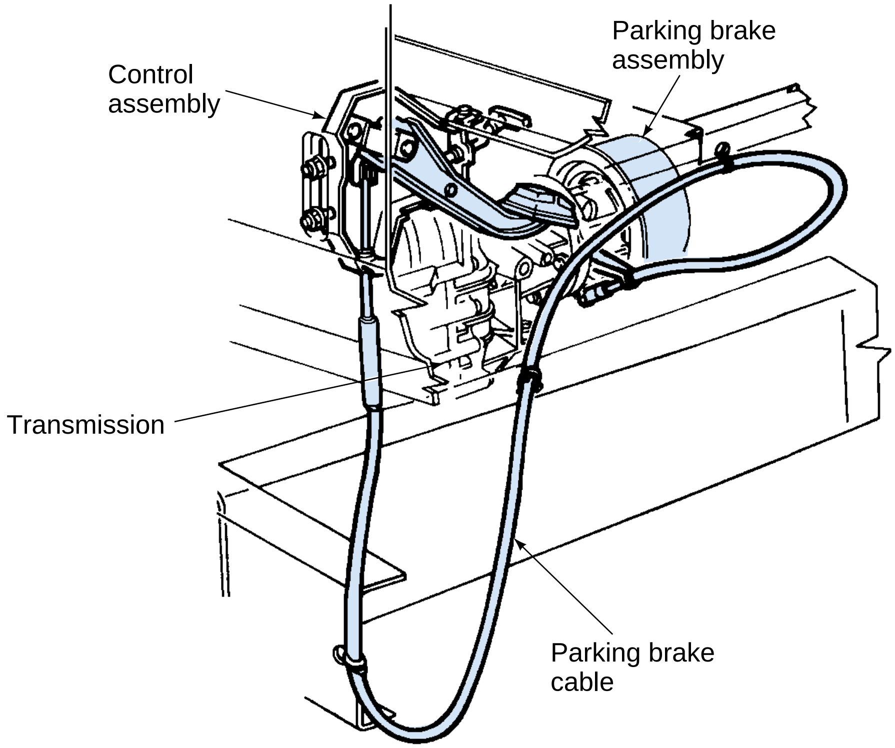

Figure 8-19 Driveline parking brake for a medium-duty truck that is operated by a hydraulic cylinder and cable. (Courtesy of Ford Motor Company)

Summary

Terms to Know

Ball and ramp
Conduit
Eccentric
Equalizer
Intermediate lever
Parking brake control
Screw and nut

- ❑ The parking brake prevents the vehicle from moving when parked.
- ❑ The control device that applies the parking brakes may be operated by either hand lever or foot pedal. The release mechanism may be either a manual release or an automatic release using a vacuum servo controlled by the transmission gear selector.
- ❑ Equalizers are used to balance the forces applied to the parking brakes during application.
- ❑ Equalizer levers are used to multiply the effort of the driver applying the parking brakes.
- ❑ Rear drum brakes use a lever and strut to move the shoes into contact with the drum.
- ❑ Integral disc parking brakes use the normal disc calipers as parking brakes to hold the vehicle while it is parked.
- ❑ Auxiliary drum parking brakes are contained inside the rotor of some rear disc brakes.
- ❑ Driveline parking brakes may be of either the external-contracting band type or the internal-expanding shoe type. This type of parking brake keeps the driveshaft from turning to prevent the vehicle from moving.

Review Questions

Short Answer Essays

1. Explain the purpose of a parking brake.
2. Describe why a parking brake should not be used as an "emergency" brake.

3. How do the levers connected to equalizers on some brake systems multiply the driver's application effort?
4. What is the function of an equalizer in a parking brake system?
5. What is the construction of a parking brake cable?
6. Why are some parking brake cables plastic-coated?
7. How are integral disc parking brakes applied?
8. Describe how the rear drum brakes are applied to hold the vehicle when it is parked.
9. Describe how the internal-expanding shoe transmission-type brake works.
10. What is the difference between an integral parking brake and an independent parking brake?

Fill in the Blanks

1. Parking brakes may be operated by ________________ or by ________________.
2. A ________________ ________________ is used on some vehicles to automatically release the parking brake.
3. Parking brake cables are made up of a ________________ of small wires to form the complete cable with the proper strength.
4. The ________________ is a device that applies the same tension to each rear brake cable.
5. Another name for the cable housing of a parking brake cable is the cable ________________.
6. The parking brake cable is attached to the ________________ that is connected to the secondary shoe web on drum brakes.
7. The parking brake ________________ connects the primary shoe to the secondary shoe.
8. A high-lead ________________ is used to move the piston and apply the brakes.
9. A ________________, lined with brake lining material, is wrapped around an external brake drum.
10. The brake drum of a driveline parking brake is attached to the __________ __________ __________ to prevent the vehicle from moving

ASE Style Review Questions

1. *Technician A* says that the parking brakes are provided with equal cable tension by the cable adjusters.
   Technician B says the parking brakes are provided with equal cable tension by the equalizer.
   Who is correct?
   A. A only
   B. B only
   C. Both A and B
   D. Neither A nor B

2. *Technician A* says that the parking brakes are mechanically operated because mechanical brakes are much more effective than hydraulic brakes.
   Technician B says that parking brakes are mechanical because the parking brakes must operate separately from the service brakes.
   Who is correct?
   A. A only
   B. B only
   C. Both A and B
   D. Neither A nor B

3. *Technician A* says the device that releases the parking brakes whenever the transmission gear selector is in drive or reverse is a vacuum motor.
Technician B says that the device that releases the parking brakes is the driver.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B

4. *Technician A* says the parking brakes are set by pulling the parking brake lever.
Technician B says that parking brakes are set by depressing the parking brake foot pedal.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B

5. *Technician A* says that an external band is a type of driveline parking brake.
Technician B says that an internal-expanding shoe is a type of driveline parking brake.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B

6. *Technician A* says that a high-lead screw forces the disc pads against the rotor in a rear disc parking brake system.
Technician B says that a ball-and-ramp assembly forces the disc pads against the rotor in a rear disc parking brake system.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B

7. *Technician A* says that driveline parking brakes are insufficient parking brakes.
Technician B says that driveline parking brakes are independent parking brakes.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B

8. *Technician A* says another name for a rear disc-drum parking brake is auxiliary drum brake.
Technician B says another name for a rear disc-drum parking brake is an integral brake.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B

9. *Technician A* says it is important to remember that the parking brake is not part of the vehicle hydraulic brake system.
Technician B says it is important to remember that the parking brake is applied mechanically.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B

10. *Technician A* says that the effort of the driver when activating the foot pedal or hand lever is multiplied and passed on to the rear cables by the front cable.
Technician B says that the effort of the driver when activating the foot pedal or hand lever is multiplied and passed on to the rear cables by the equalizer lever.
Who is correct?
A. A only
B. B only
C. Both A and B
D. Neither A nor B