

2008 BRAKES

Park Brake - LaCrosse

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Brake Caliper Guide Pin Bolts (J65)	34 N.m	25 lb ft
Park Brake Bracket Bolts	10 N.m	89 lb in
Park Brake Cable Guide Bolt	10 N.m	89 lb in
Park Brake Indicator Switch Mounting Screw	3 N.m	26 lb in
Park Brake Pedal Assembly Retaining Nuts	25 N.m	18 lb ft

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - PARK BRAKE

Begin the system diagnosis by reviewing the system description and operation. Reviewing the description and operation information will help you determine the correct symptom diagnostic procedure when a malfunction exists. Reviewing the description and operation information will also help you determine if the condition described by the customer is normal operation. Refer to **Symptoms - Park Brake** in order to identify the correct procedure for diagnosing the system and where the procedure is located.

SYMPTOMS - PARK BRAKE

IMPORTANT: Review the system operation in order to familiarize yourself with the system functions.

Refer to **Park Brake System Description and Operation**.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the park brake system.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

Park Brake Will Not Hold or Release

PARK BRAKE WILL NOT HOLD OR RELEASE

Step	Action	Yes	No
1	Were you sent here from the Park Brake Symptom table?	Go to Step 2	Go to <u>Diagnostic Starting Point - Park Brake</u>
2	Inspect the disc brake system for proper operation. Refer to <u>Disc Brake System Diagnosis</u> . Did you find and correct a condition?	Go to Step 5	Go to Step 3

PARK BRAKE SYSTEM DIAGNOSIS

Step	Action	Yes	No
DEFINITION: This diagnostic table is designed to diagnose ONLY the components of the PARK brake system in order to determine if the PARK brake system is operating properly. You will be directed by the appropriate Symptom table to go to other brake system diagnostic tables as appropriate.			
1	Were you sent here from a Hydraulic Brake Symptom table?	Go to Step 4	Go to Step 2
2	Were you sent here from a Park Brake Symptom table?	Go to Step 4	Go to Step 3
3	Is the symptom related to the ability of the park brake system to hold and/or release?	Go to <u>Diagnostic Starting Point - Park Brake</u>	Go to <u>Diagnostic Starting Point - Hydraulic Brakes</u>
4	1. Raise and support the vehicle with the rear axle supported by jack stands. Refer to <u>Lifting and Jacking the Vehicle</u> . 2. With the park brake RELEASED, attempt to rotate the rear wheels to check the rear brakes for a significant amount of drag.		
5	Do the rear brakes have a significant amount of drag? 1. Apply the park brake. 2. Attempt to rotate the rear wheels to check the rear brakes for a significant amount of drag.	Go to Step 9	Go to Step 5
6	Do the rear brakes have a significant amount of drag? Visually check the park brake cable connections and the cables that are accessible on the UNDERSIDE of the vehicle for disconnections and/or damage. Were any or the park brake cables disconnected and/or damaged?	Go to Step 19	Go to Step 7
7	Reconnect or replace the park brake cables as necessary. Refer to the following procedures as necessary: • <u>Parking Brake Front Cable Replacement</u> • <u>Parking Brake Rear Cable Replacement - Left Side (J65)</u> • <u>Parking Brake Rear Cable Replacement - Right Side (J65)</u>	Go to Step 7	Go to Step 8

REPAIR INSTRUCTIONS

PARKING BRAKE LEVER PEDAL ASSEMBLY REPLACEMENT

Removal Procedure

CAUTION: Refer to Park Brake Cable to Caliper Caution .

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .

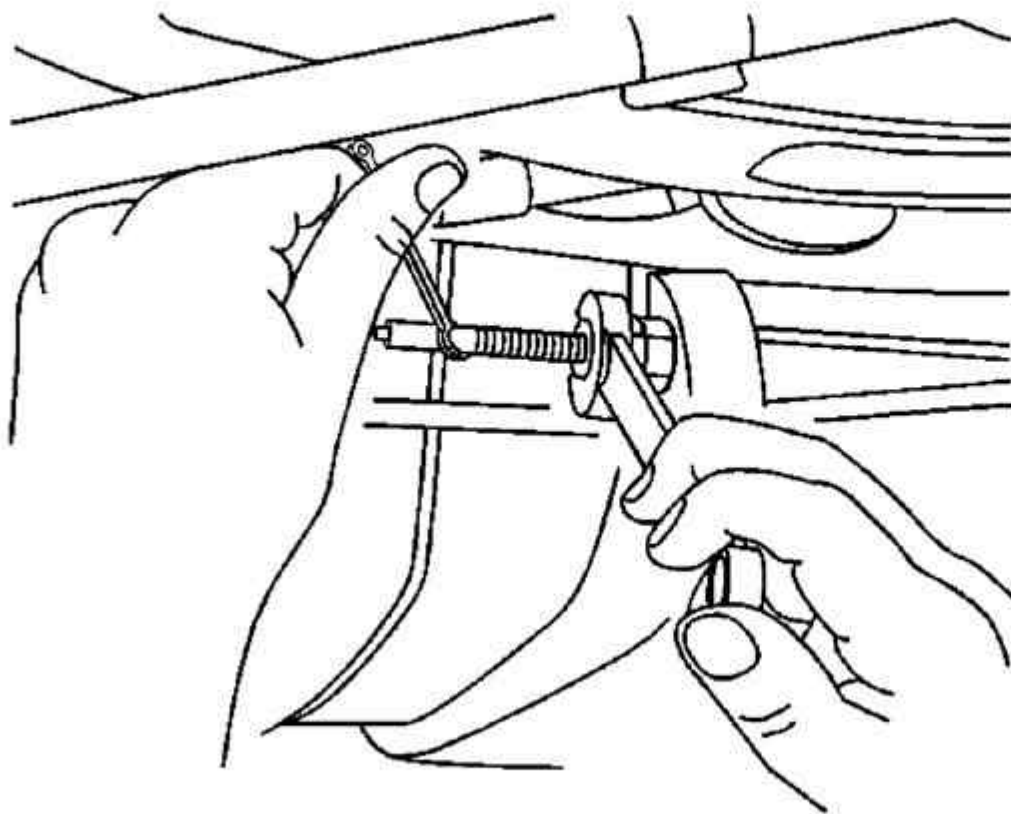


Fig. 1: Adjusting Park Brake Tension At Equalizer Assembly
Courtesy of GENERAL MOTORS CORP.

2. Relieve cable tension at the park brake equalizer.

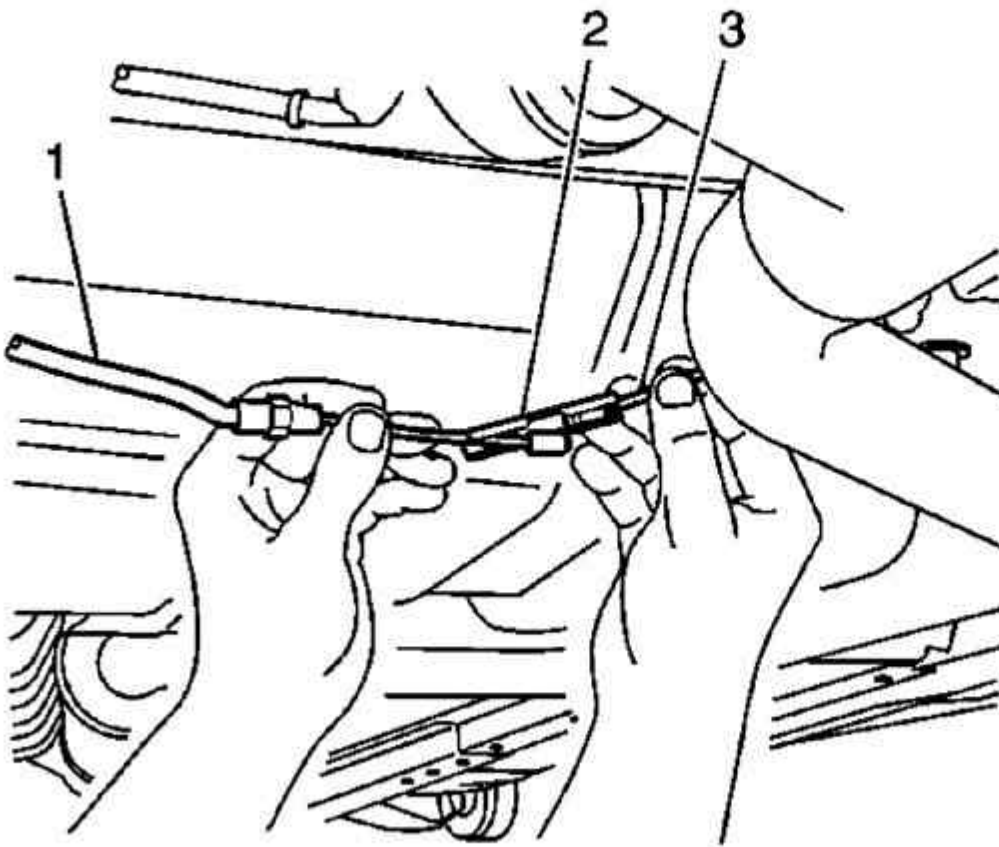


Fig. 2: View Of Front Brake Cable Connected To Right Rear Cable
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the front cable from the connector (2).
4. Lower the vehicle.
5. Remove the left side closeout/insulator panel. Refer to **Instrument Panel Insulator Panel Replacement - Left Side**.
6. Remove the left side front carpet retainer. Refer to **Center Pillar Lower Trim Panel Replacement**.
7. Disconnect the electrical connector at the park brake switch.

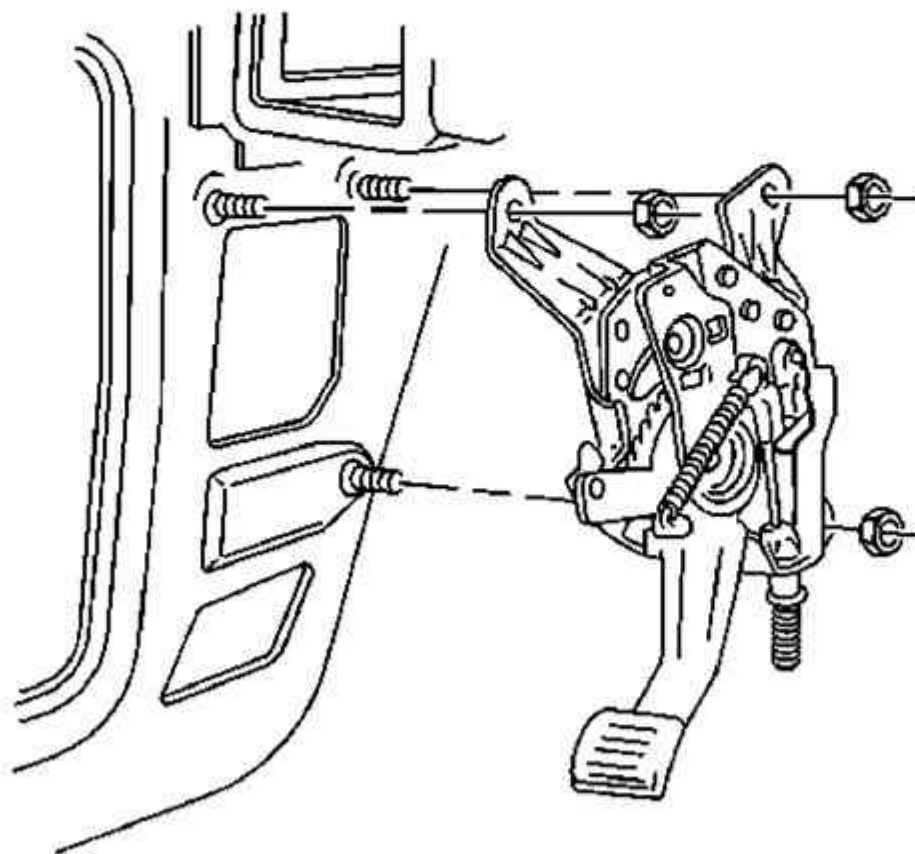


Fig. 3: View Of Park Brake Pedal Assembly Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

8. Remove the 3 park brake pedal assembly retaining nuts from the body mounting studs.

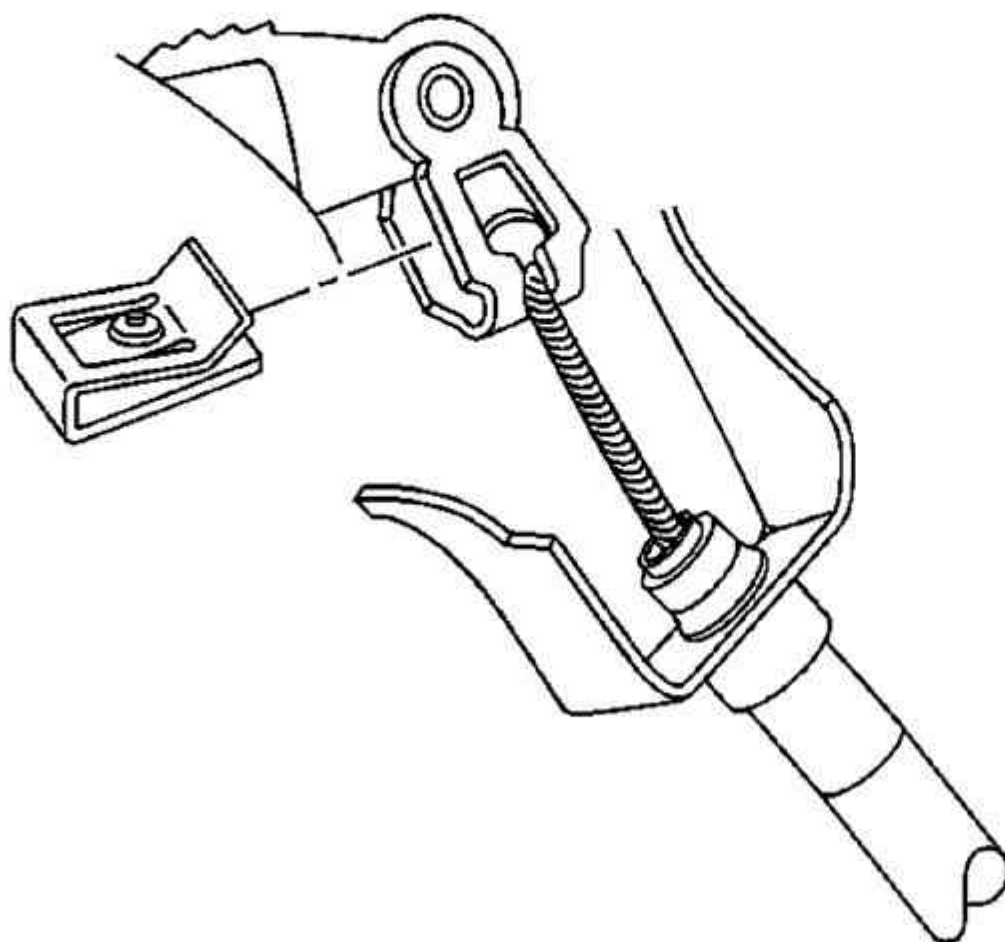


Fig. 4: View Of Retaining Clip
Courtesy of GENERAL MOTORS CORP.

9. Remove the retaining clip and disconnect the cable from the clevis.
10. Use a 13 mm box-end wrench to release and remove the cable from the bracket on the pedal assembly.
11. Remove the park brake pedal assembly.

Installation Procedure

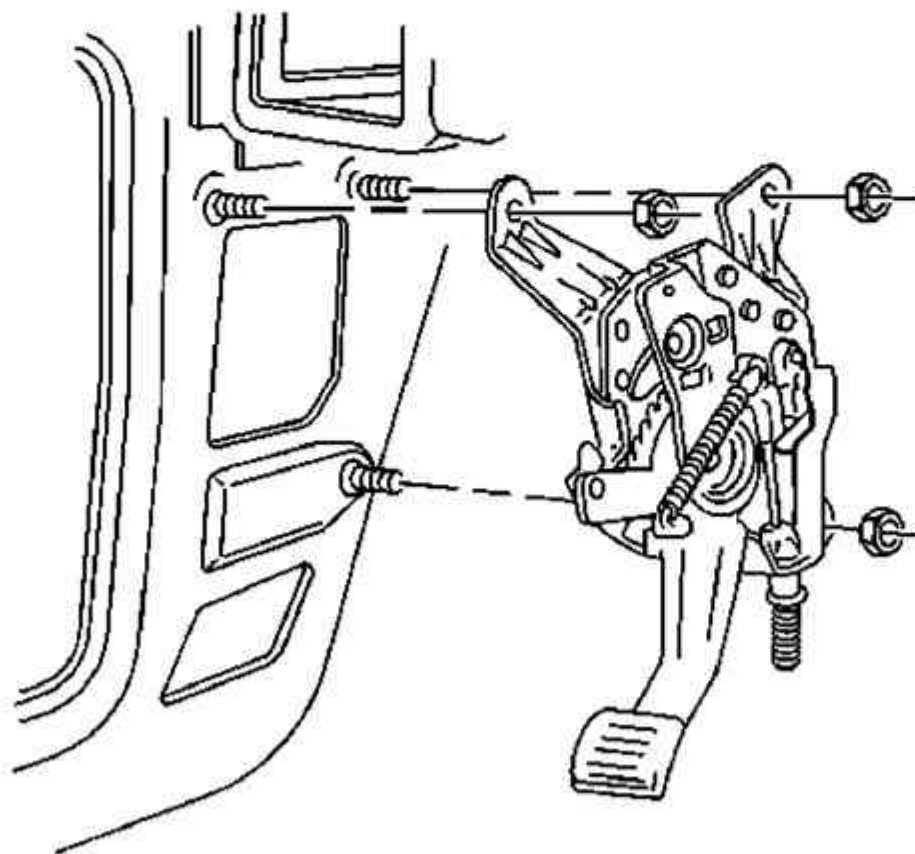


Fig. 5: View Of Park Brake Pedal Assembly Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

1. Install the park brake assembly onto the body mounting studs.

NOTE: Refer to Fastener Notice .

2. Install the 3 park brake pedal assembly retraining nuts.

Tighten: Tighten the nuts to 25 N.m (18 lb ft).

3. Install the front park brake cable into the bracket on the park brake pedal assembly.

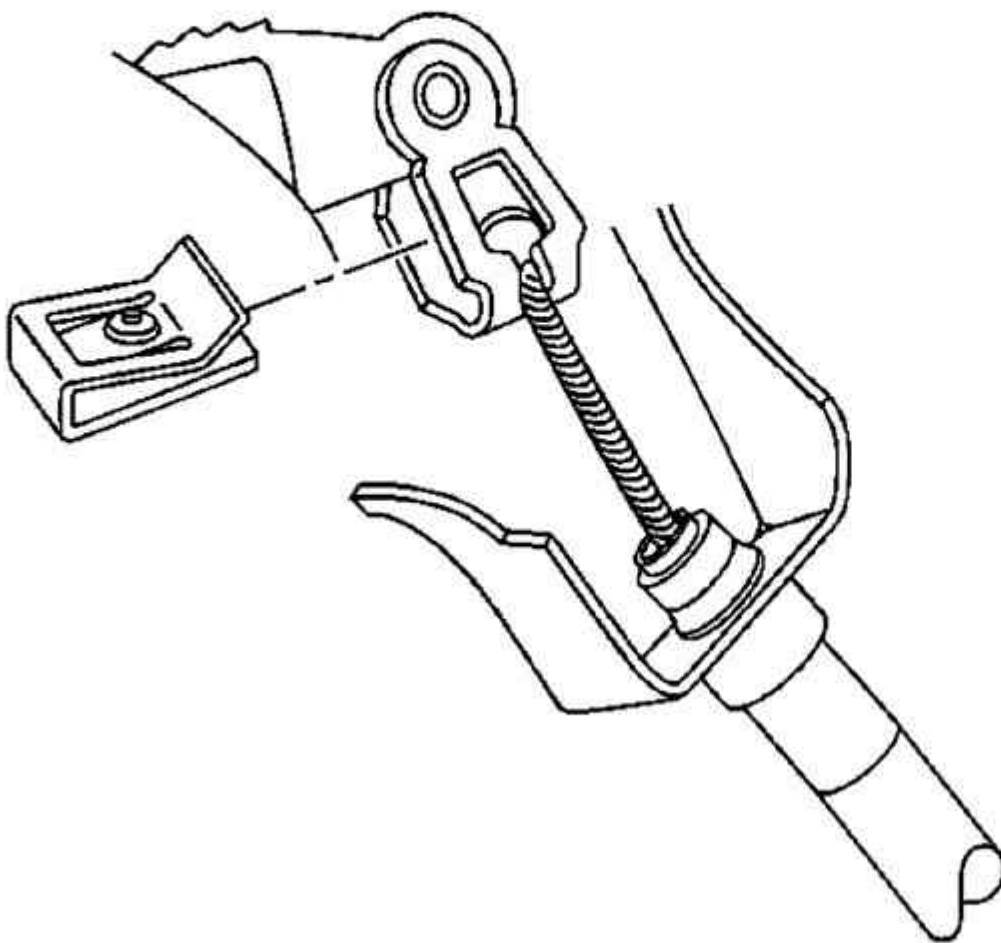


Fig. 6: View Of Retaining Clip
Courtesy of GENERAL MOTORS CORP.

4. Insert the cable button into the clevis and install the retaining clip.
5. Connect the electrical connector to the park brake switch.
6. Reposition the carpet properly.
7. Install the left side front carpet retainers and the lower center pillar trim panel on the left side. Refer to **Center Pillar Lower Trim Panel Replacement**.
8. Install the left side closeout/insulator panel. Refer to **Instrument Panel Insulator Panel Replacement - Left Side**.
9. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**.
10. Install the front park brake cable through the park brake cable guides.

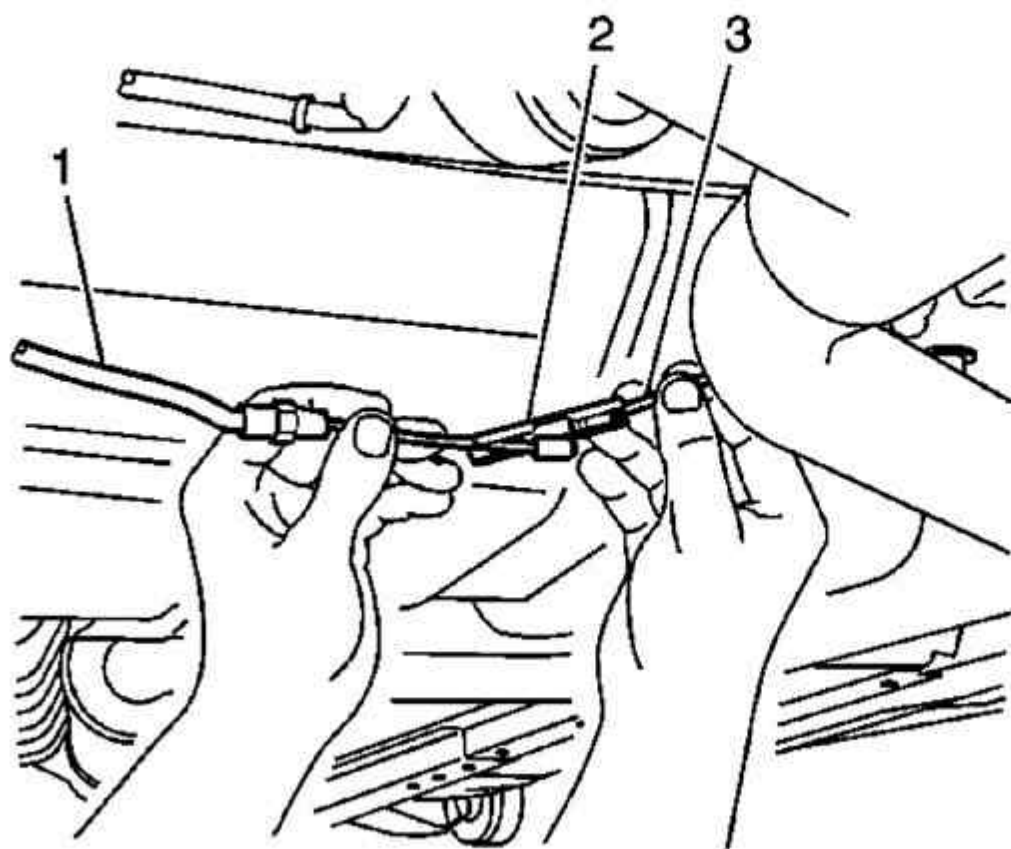


Fig. 7: View Of Front Brake Cable Connected To Right Rear Cable
Courtesy of GENERAL MOTORS CORP.

11. Connect the front park brake cable (1) to the rear cable (3) at the connector clip (2).

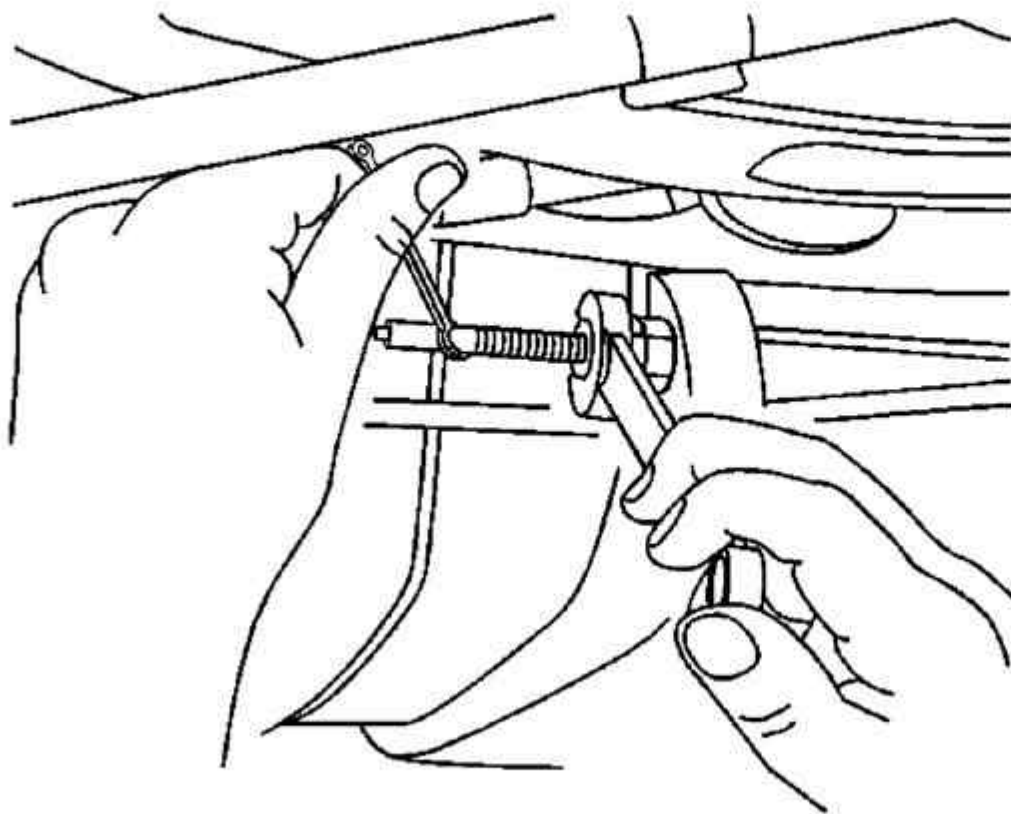


Fig. 8: Adjusting Park Brake Tension At Equalizer Assembly
Courtesy of GENERAL MOTORS CORP.

12. Tighten the nut on the equalizer in order to remove slack in the cable.
13. Lower the vehicle.
14. Adjust the park brake system. Refer to **Park Brake Adjustment (L26 and L32)**.

PARKING BRAKE INDICATOR SWITCH REPLACEMENT

Removal Procedure

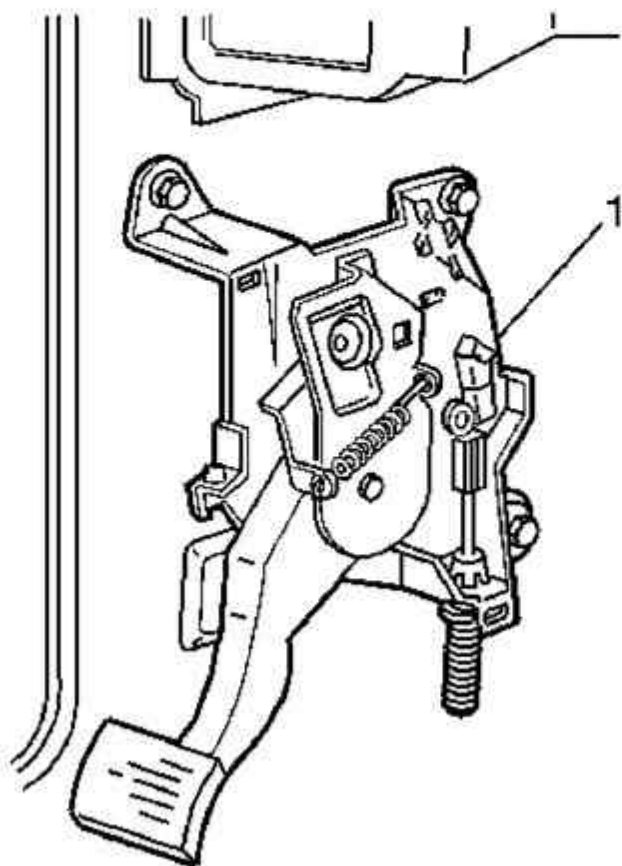


Fig. 9: Identifying Parking Brake Indicator Switch
Courtesy of GENERAL MOTORS CORP.

1. Remove the left side instrument panel insulator. Refer to **Instrument Panel Insulator Panel Replacement - Left Side**.
2. Remove the left carpet retainers. Refer to **Center Pillar Lower Trim Panel Replacement**.
3. Disconnect the electrical connector from the switch.
4. Remove the mounting screw.
5. Remove the parking brake indicator switch (1).

Installation Procedure

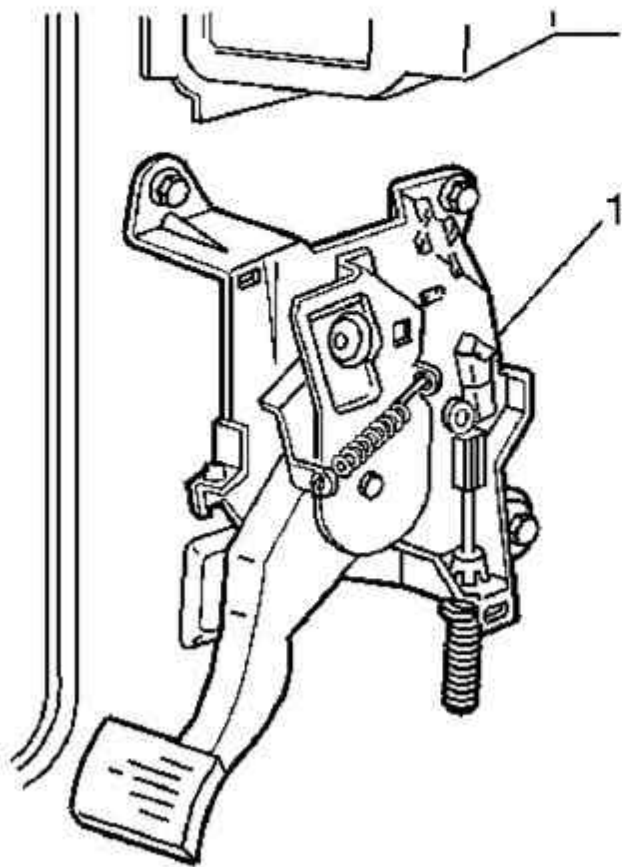


Fig. 10: Identifying Parking Brake Indicator Switch
Courtesy of GENERAL MOTORS CORP.

1. Install the parking brake indicator switch (1).

NOTE: Refer to Fastener Notice .

2. Install the mounting screw.

Tighten: Tighten the mounting screw to 3 N.m (26 lb in).

3. Connect the electrical connector to the switch.

Check the operation of the switch.

4. Install the left carpet retainers. Refer to Center Pillar Lower Trim Panel Replacement .
5. Install the left side instrument panel insulator. Refer to Instrument Panel Insulator Panel Replacement - Left Side .

PARKING BRAKE FRONT CABLE REPLACEMENT

Removal Procedure

CAUTION: Refer to Park Brake Cable to Caliper Caution .

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .

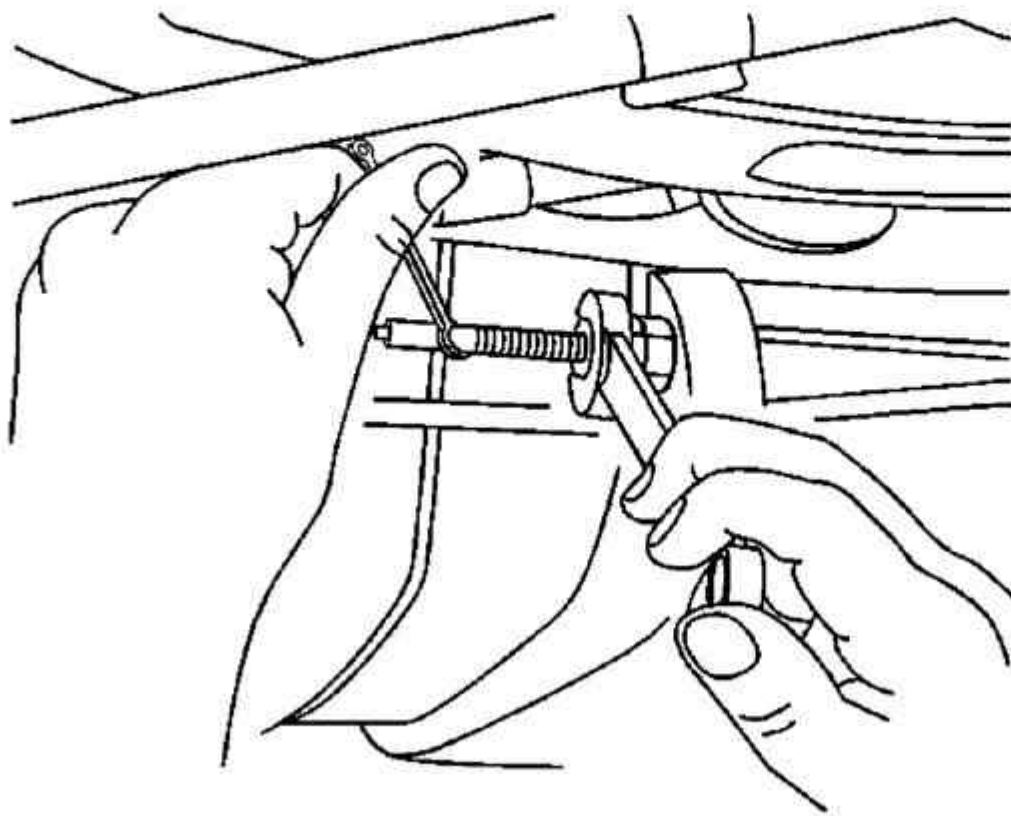


Fig. 11: Adjusting Park Brake Tension At Equalizer Assembly
Courtesy of GENERAL MOTORS CORP.

2. Relieve the cable tension at the park brake equalizer.

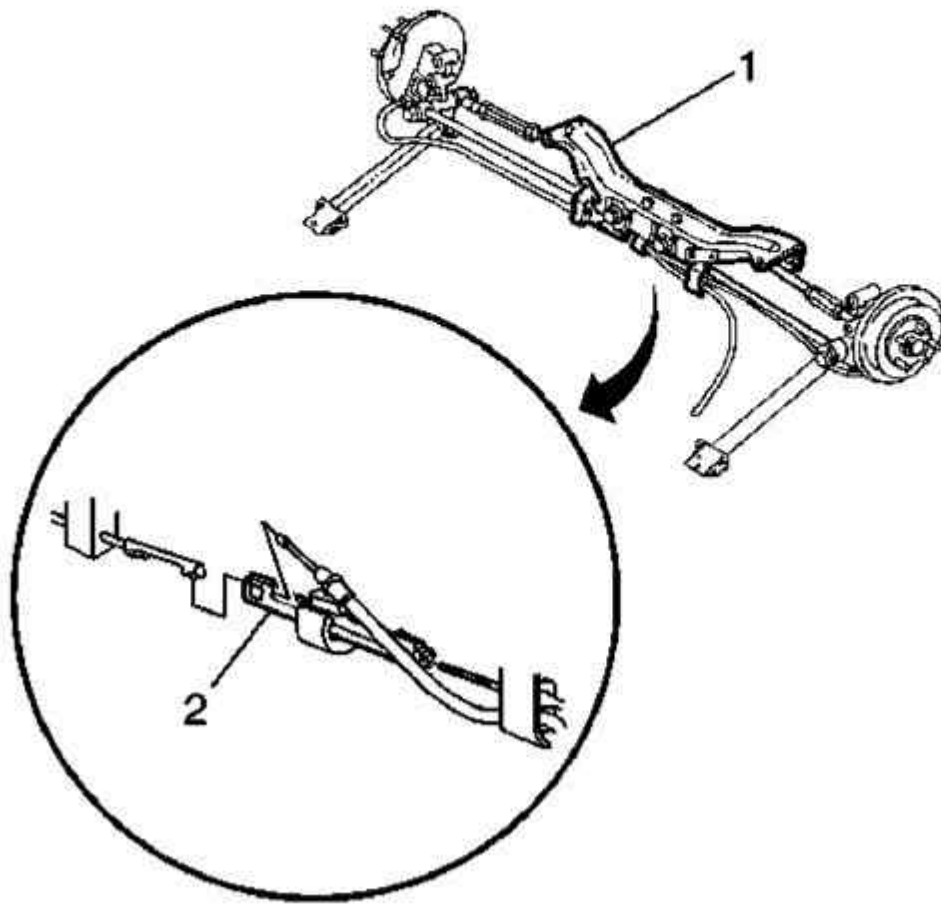


Fig. 12: View Of Parking Brake Adjustment
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the front cable from the connector (2).

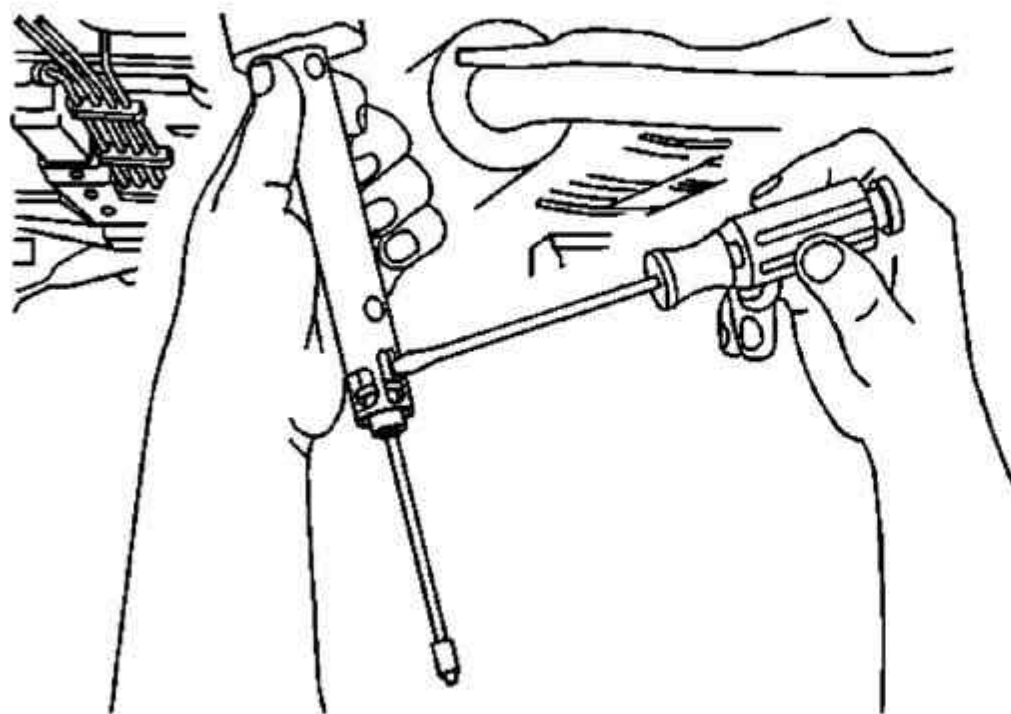


Fig. 13: Installing/Removing Equalizer Assembly From Front Park Brake Cable
Courtesy of GENERAL MOTORS CORP.

4. Remove the front cable from the equalizer.
5. Remove the front cable from the cable guides.
6. Lower the vehicle.
7. Remove the left side closeout/insulator panel. Refer to **Instrument Panel Insulator Panel Replacement - Left Side**.
8. Remove the lower center pillar panel on the left side and the left side carpet retainers. Refer to **Center Pillar Lower Trim Panel Replacement**.
9. Fold back the carpeting in order to gain access to the front park brake cable.

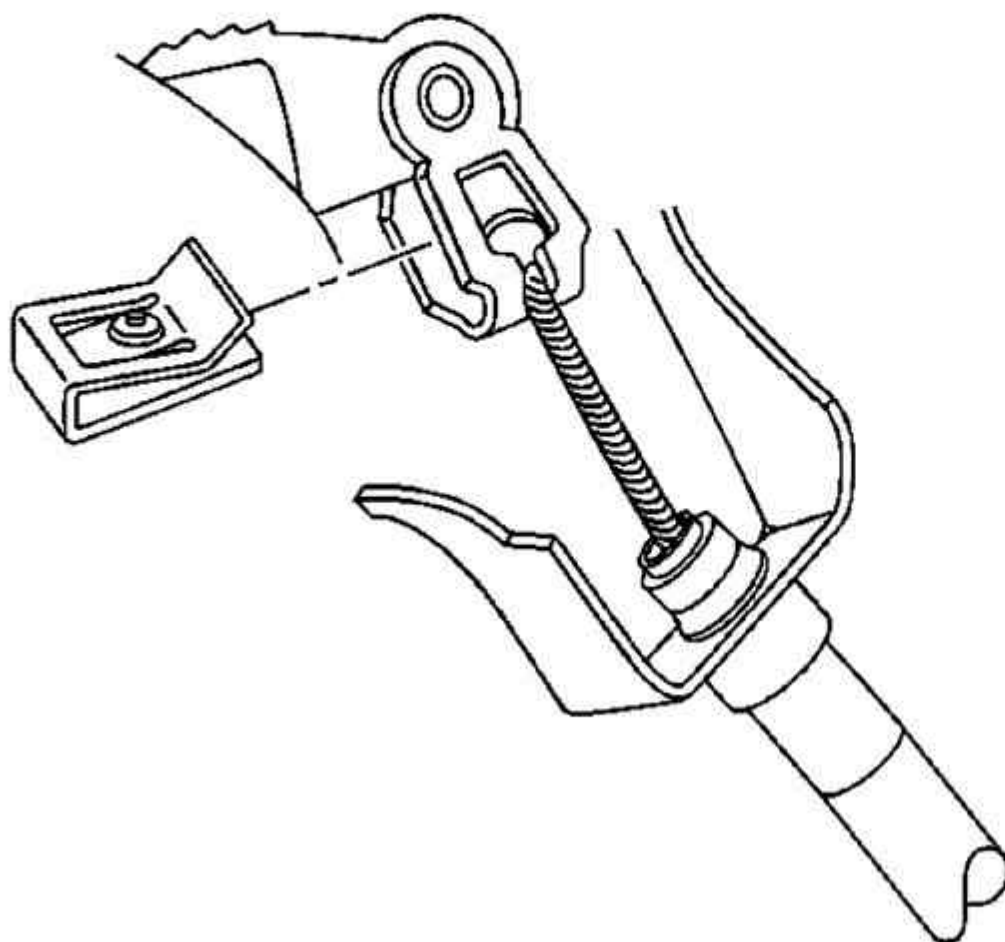


Fig. 14: View Of Retaining Clip
Courtesy of GENERAL MOTORS CORP.

10. Remove the retaining clip and disconnect the cable button from the clevis.
11. Use a 13 mm box-end wrench to release the retainer holding cable to the bracket on the pedal assembly.
12. Remove the front cable from the vehicle.

Note routing of the cable for installation.

Installation Procedure

1. Install the front cable into the vehicle as noted in the removal procedure.
2. Install the front park brake cable into the bracket on the park brake assembly.

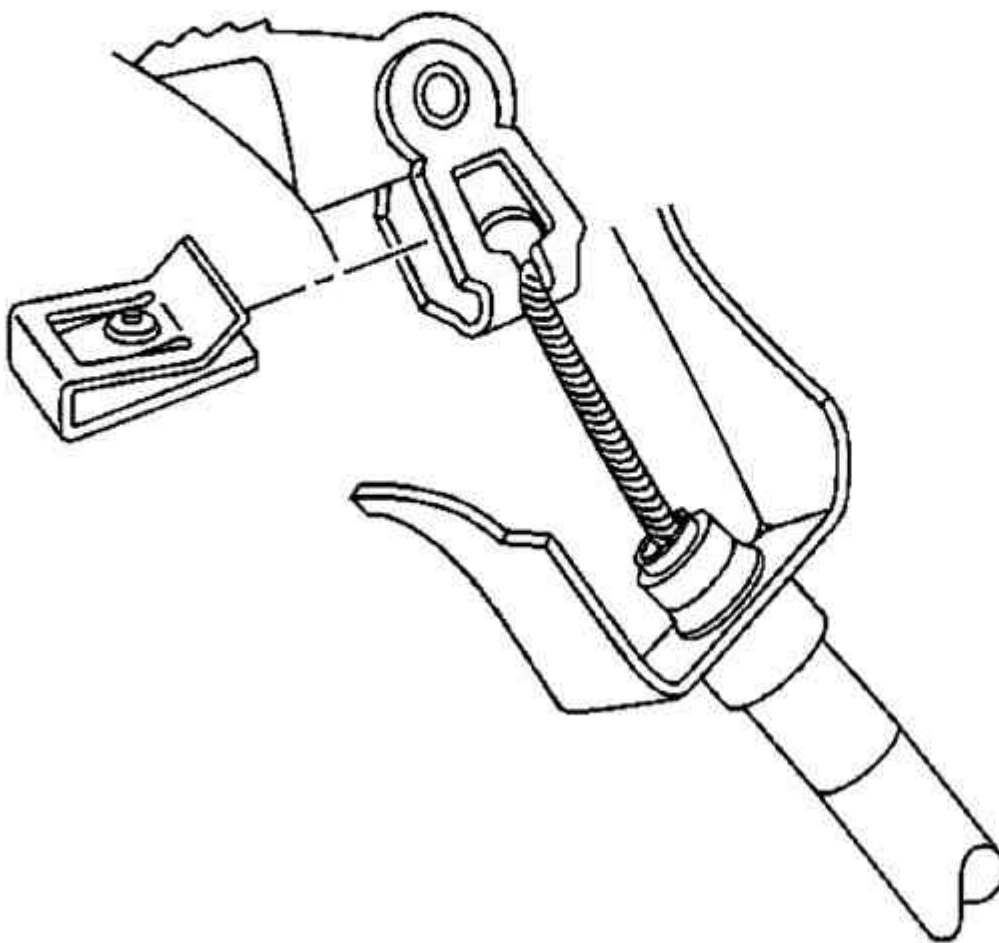


Fig. 15: View Of Retaining Clip
Courtesy of GENERAL MOTORS CORP.

3. Insert the cable button end into the clevis and install the retaining clip.
4. Reposition the carpeting properly.
5. Install the left side carpet retainers and the lower center pillar panel on the left side. Refer to **Center Pillar Lower Trim Panel Replacement**.
6. Install the left side closeout/insulator panel. Refer to **Instrument Panel Insulator Panel Replacement - Left Side**.
7. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**.
8. Install the front park brake cable through the park brake cable guides.
9. Install the front park brake cable into the equalizer.

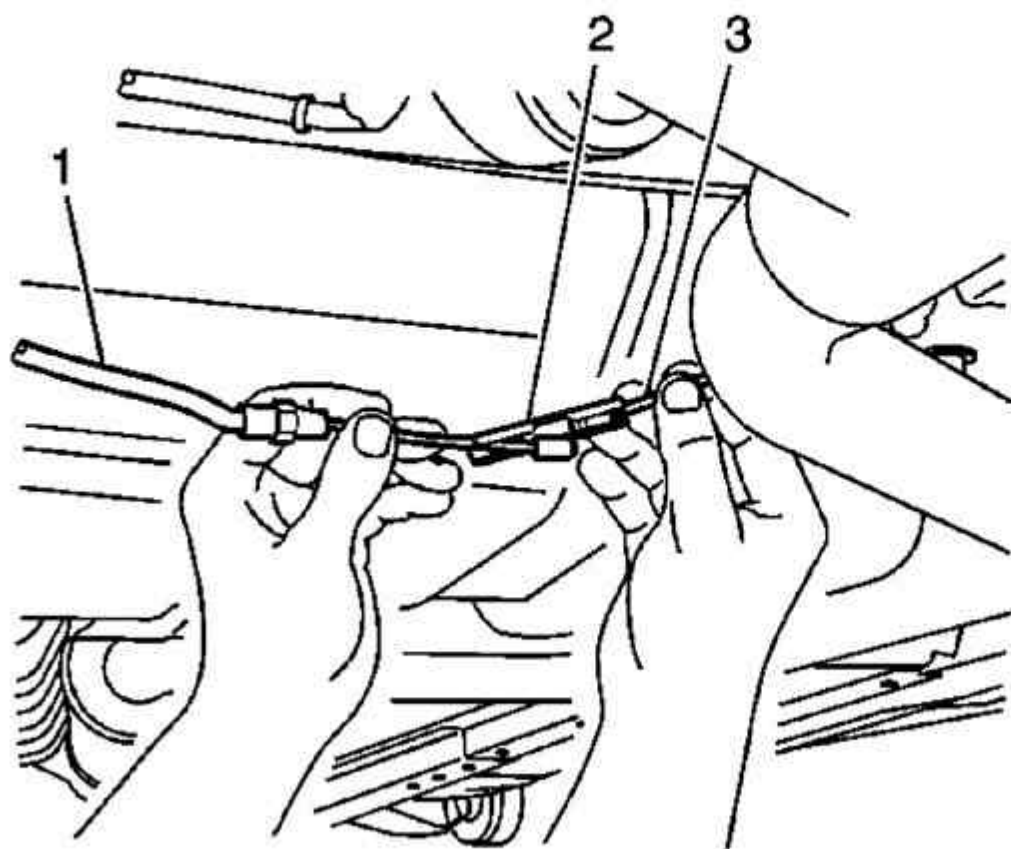


Fig. 16: View Of Front Brake Cable Connected To Right Rear Cable
Courtesy of GENERAL MOTORS CORP.

10. Connect the front park brake cable (1) to the rear cable (3) at the connector clip (2).

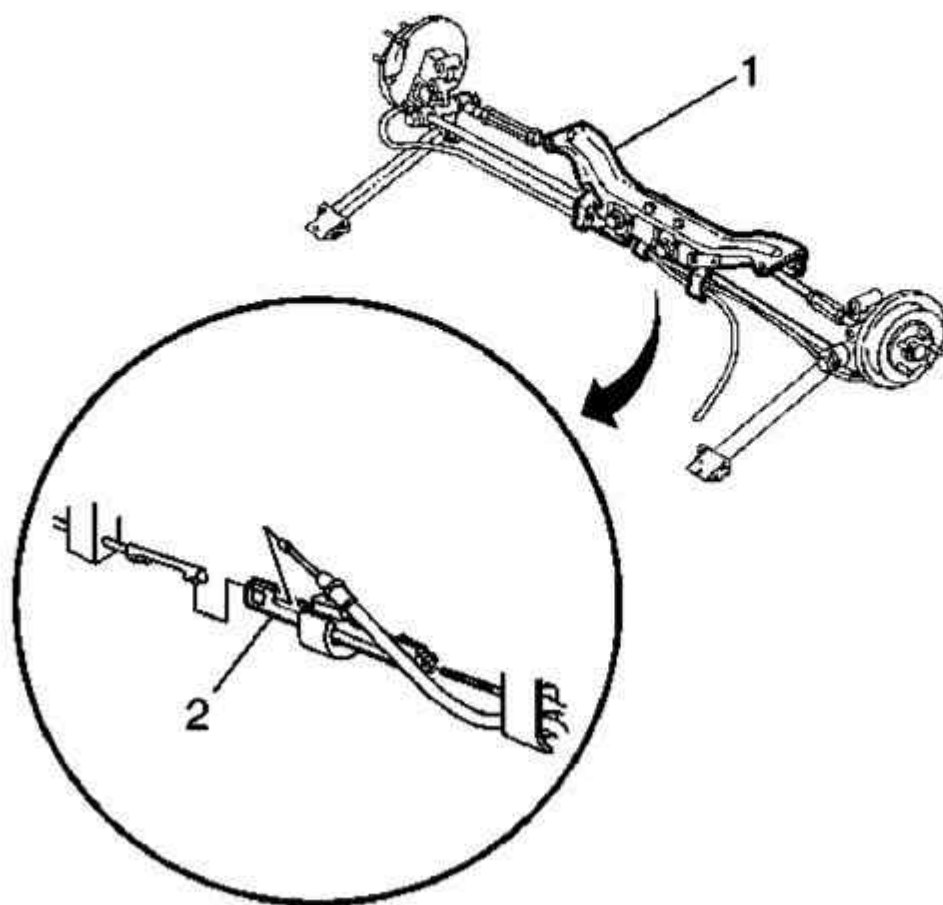


Fig. 17: View Of Parking Brake Adjustment
Courtesy of GENERAL MOTORS CORP.

11. Tighten the nut on the equalizer (2) in order to remove slack in the cable.
12. Lower the vehicle.
13. Adjust the park brake system. Refer to **Park Brake Adjustment (L26 and L32)**.

PARKING BRAKE REAR CABLE REPLACEMENT (JL9)

Tools Required

J 37043 Parking Brake Cable Release Tool. See **Special Tools**.

Removal Procedure

CAUTION: Refer to **Brake Fluid Irritant Caution** .

NOTE: Refer to **Brake Fluid Effects on Paint and Electrical Components Notice** .

1. Raise and suitably support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Relieve the park brake cable tension at the equalizer.
3. Disconnect the front cable from the rear cable that is to be replaced.

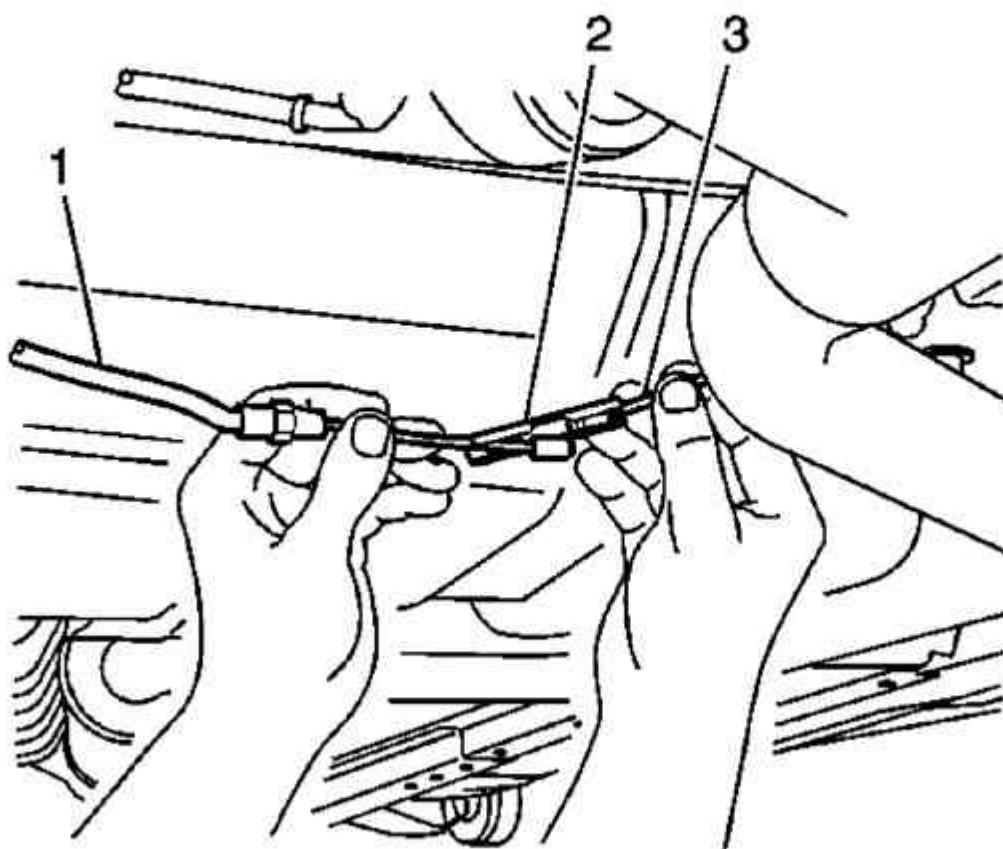


Fig. 18: View Of Front Brake Cable Connected To Right Rear Cable
Courtesy of GENERAL MOTORS CORP.

- For the right rear cable, disconnect the cable (3) from the clip (2).
- For the left rear cable, fully remove the equalizer nut from the equalizer stud, which is part of the left rear cable.

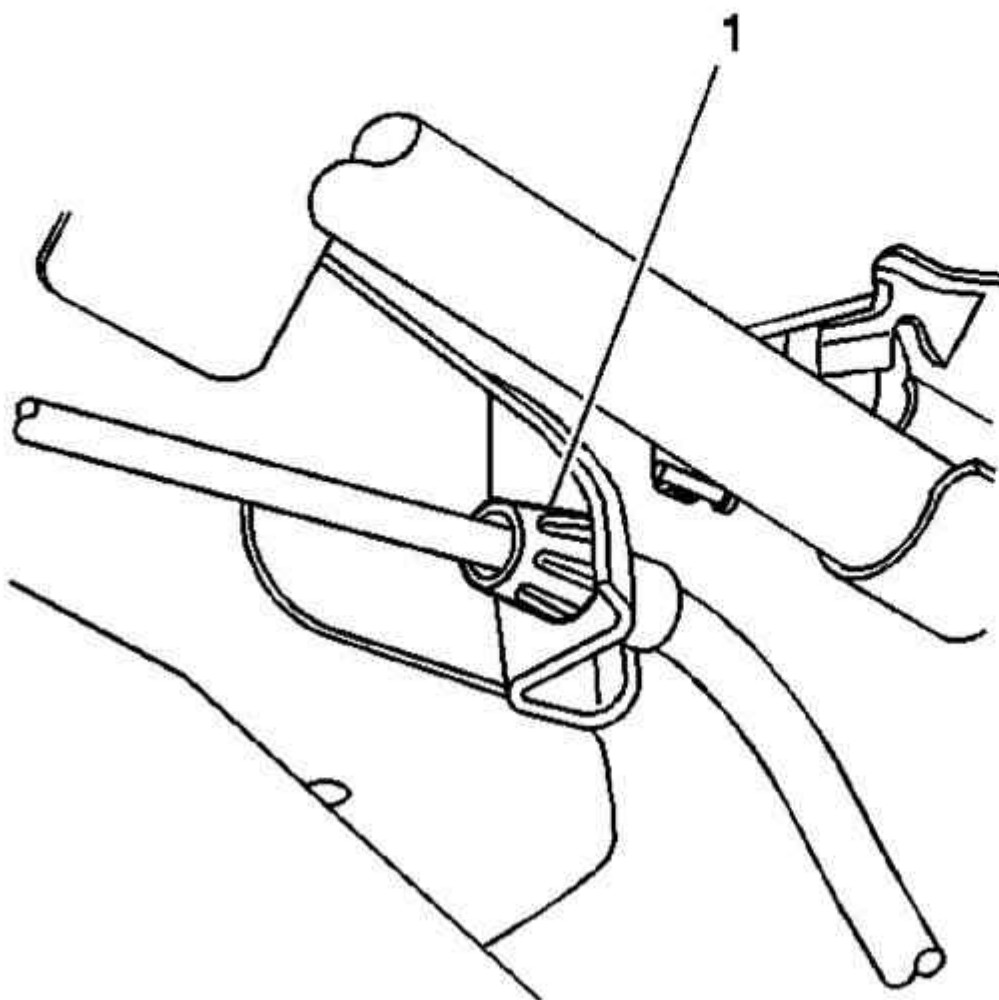


Fig. 19: View Of Park Brake Cable
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the retainer (1) that holds the cable to the support bracket. Use the **J 37043** to release the retainer. See Special Tools.

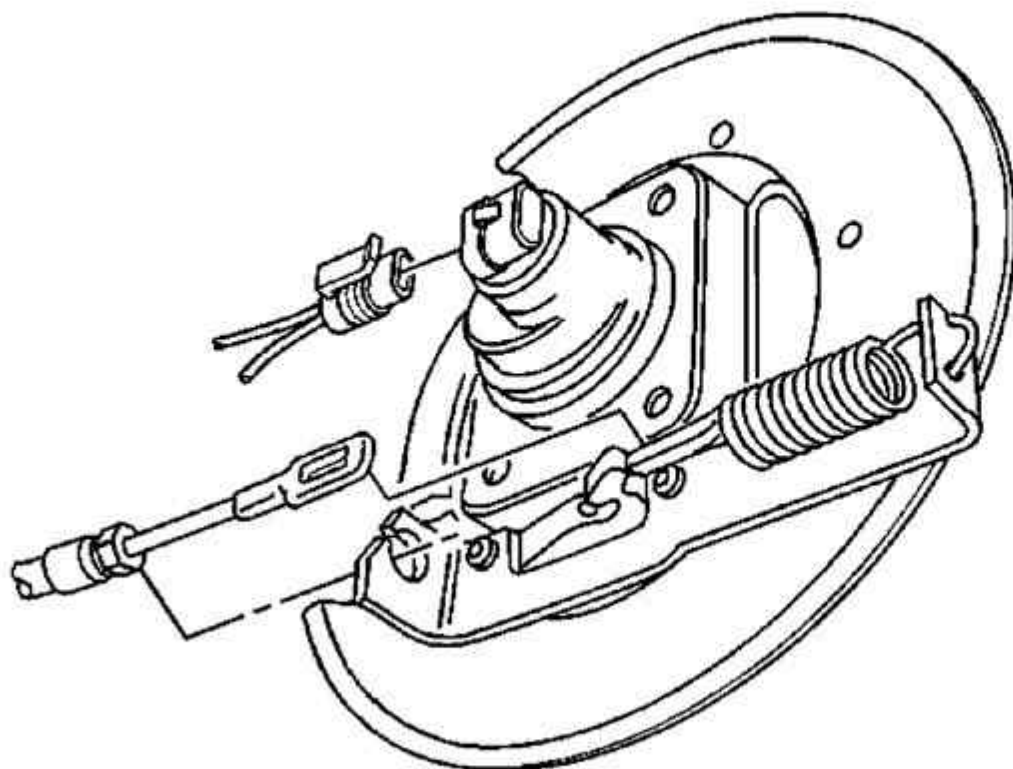


Fig. 20: View Of Rear Park Brake Cable & Wheel Speed Sensor Electrical Connector
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the park brake cable from the actuator lever.
6. Remove cable retaining pin from the support bracket and remove the park brake cable.

Installation Procedure

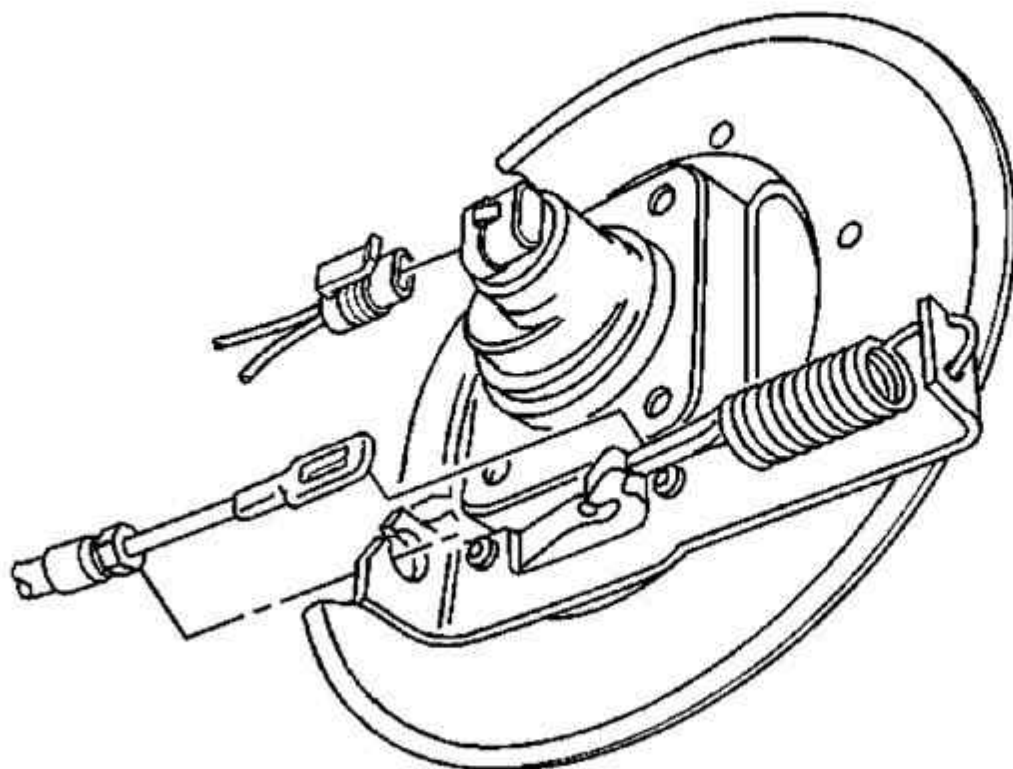


Fig. 21: View Of Rear Park Brake Cable & Wheel Speed Sensor Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Position the park brake cable into the support bracket and install the cable retaining pin.
2. Install the park brake cable to the actuator lever.

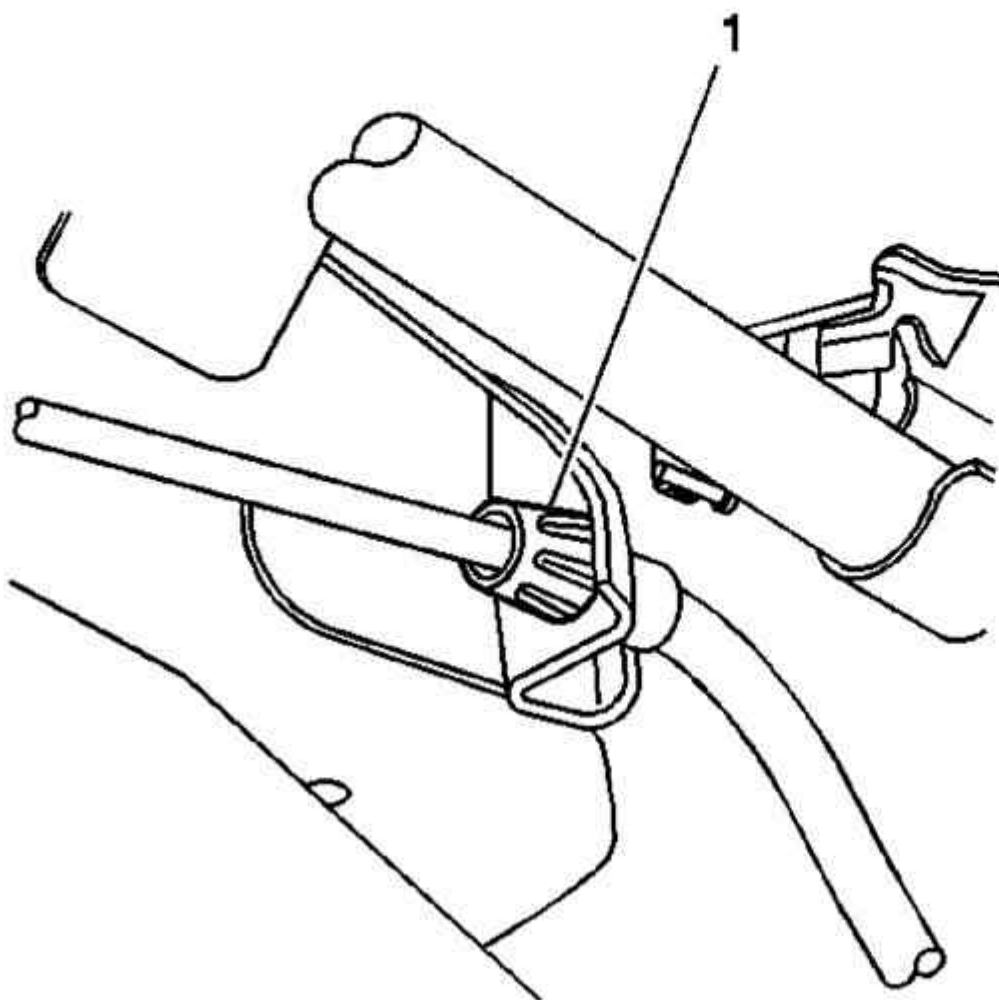


Fig. 22: View Of Park Brake Cable
Courtesy of GENERAL MOTORS CORP.

3. Connect the retainer (1) that holds the cable to the support bracket.
4. Connect the rear cable to the front cable.

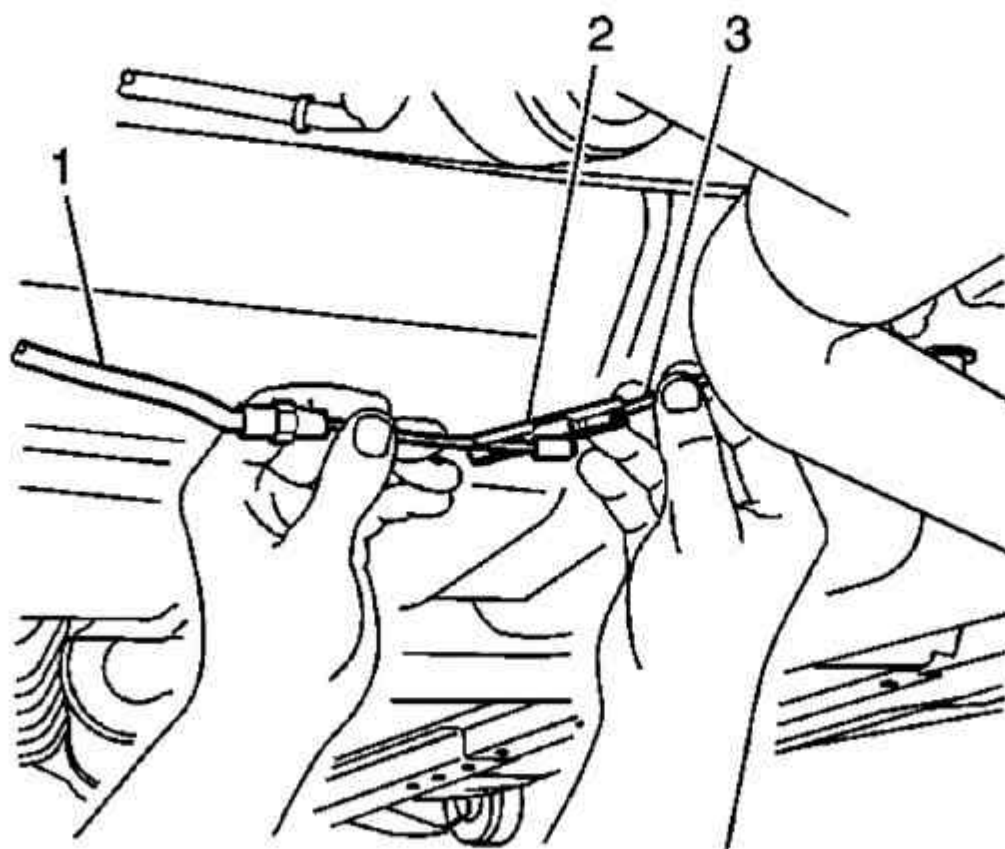


Fig. 23: View Of Front Brake Cable Connected To Right Rear Cable
Courtesy of GENERAL MOTORS CORP.

- For the right rear cable, connect the cable (3) to the clip (2).
 - For the left rear cable, install the equalizer stud to the equalizer nut, which is part of the equalizer assembly.
5. Adjust the park brake. Refer to **Park Brake Adjustment (L26 and L32)**.
 6. Lower the vehicle.

PARKING BRAKE REAR CABLE REPLACEMENT - LEFT SIDE (J65)

Tools Required

J 37043 Parking Brake Cable Release Tool. See **Special Tools**.

Removal Procedure

CAUTION: Refer to **Park Brake Cable to Caliper Caution** .

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Remove the rear tire and assembly. Refer to **Tire and Wheel Removal and Installation** .
3. Disconnect the cable from the equalizer at the rear suspension support assembly.
4. Use **J 37043** to depress the retaining tabs on the park brake cable on the end nearest to the equalizer. See **Special Tools**.
5. Remove the rear brake caliper guide bolts, and remove the caliper from the bracket.

6. Slide the loose end of the parking brake cable out through the wheel opening.
7. Rotate the caliper so that the convex side is facing down, and the lower guide pin hole in the caliper aligns with the upper guide pin hole in the caliper bracket.
8. Install the guide pin bolt through the lower guide pin hole in the caliper and into the upper guide pin hole in the bracket to provide support for the caliper assembly.
9. Rotate the parking brake cable end in the caliper lever such that one of the 3 retainer tabs is visible in the lever window.
10. Using a screwdriver, depress the tab through the caliper lever window, while tilting the cable elbow toward the front of the vehicle.
11. Slide the cable end up and out of the caliper lever.
12. Remove the park brake cable from the vehicle.

Installation Procedure

1. Position the park brake cable in the vehicle.
2. Install the cable end fitting into the caliper lever. Ensure that the locking tabs are properly seated.
3. Feed the opposite end of the cable through the wheel opening toward the rear support assembly.

NOTE: Refer to Fastener Notice .

4. Remove the caliper guide bolt and reinstall the brake caliper in the proper position.

Tighten: Tighten the guide bolts to 34 N.m (25 lb ft).

5. Install the equalizer stud to the equalizer nut, which is part of the equalizer assembly.

Take up the cable slack at the equalizer.

6. Install the rear tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .
7. Lower the vehicle.
8. Adjust the park brake system. Refer to Park Brake Adjustment (L26 and L32).

PARKING BRAKE REAR CABLE REPLACEMENT - RIGHT SIDE (J65)**Tools Required**

J 37043 Parking Brake Cable Release Tool. See Special Tools.

Removal Procedure

CAUTION: Refer to Park Brake Cable to Caliper Caution .

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Remove the rear tire and assembly. Refer to Tire and Wheel Removal and Installation .
3. Disconnect the cable from the equalizer at the rear suspension support assembly.
4. Use **J 37043** to depress the retaining tabs on the park brake cable on the end nearest to the equalizer. See Special Tools.
5. Remove the rear brake caliper guide bolts, and remove the caliper from the bracket.
6. Slide the loose end of the parking brake cable out through the wheel opening.
7. Rotate the caliper so that the convex side is facing down, and the lower guide pin hole in the caliper aligns

with the upper guide pin hole in the caliper bracket.

8. Install the guide pin bolt through the lower guide pin hole in the caliper and into the upper guide pin hole in the bracket to provide support for the caliper assembly.
9. Rotate the parking brake cable end in the caliper lever such that one of the 3 retainer tabs is visible in the lever window.
10. Using a screwdriver, depress the tab through the caliper lever window, while tilting the cable elbow toward the front of the vehicle.
11. Slide the cable end up and out of the caliper lever.
12. Remove the park brake cable from the vehicle.

Installation Procedure

1. Position the park brake cable in the vehicle.
2. Install the cable end fitting into the caliper lever. Ensure that the locking tabs are properly seated.
3. Feed the opposite end of the cable through the wheel opening toward the rear support assembly.

NOTE: Refer to Fastener Notice .

4. Remove the caliper guide bolt and reinstall the brake caliper in the proper position.

Tighten: Tighten the guide bolts to 34 N.m (25 lb ft).

5. Install the equalizer stud to the equalizer nut, which is part of the equalizer assembly.

Take up the cable slack at the equalizer.

6. Install the rear tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .
7. Lower the vehicle.
8. Adjust the park brake system. Refer to Park Brake Adjustment (L26 and L32).

PARK BRAKE CABLE EQUALIZER REPLACEMENT

Removal Procedure

CAUTION: Refer to Park Brake Cable to Caliper Caution .

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .

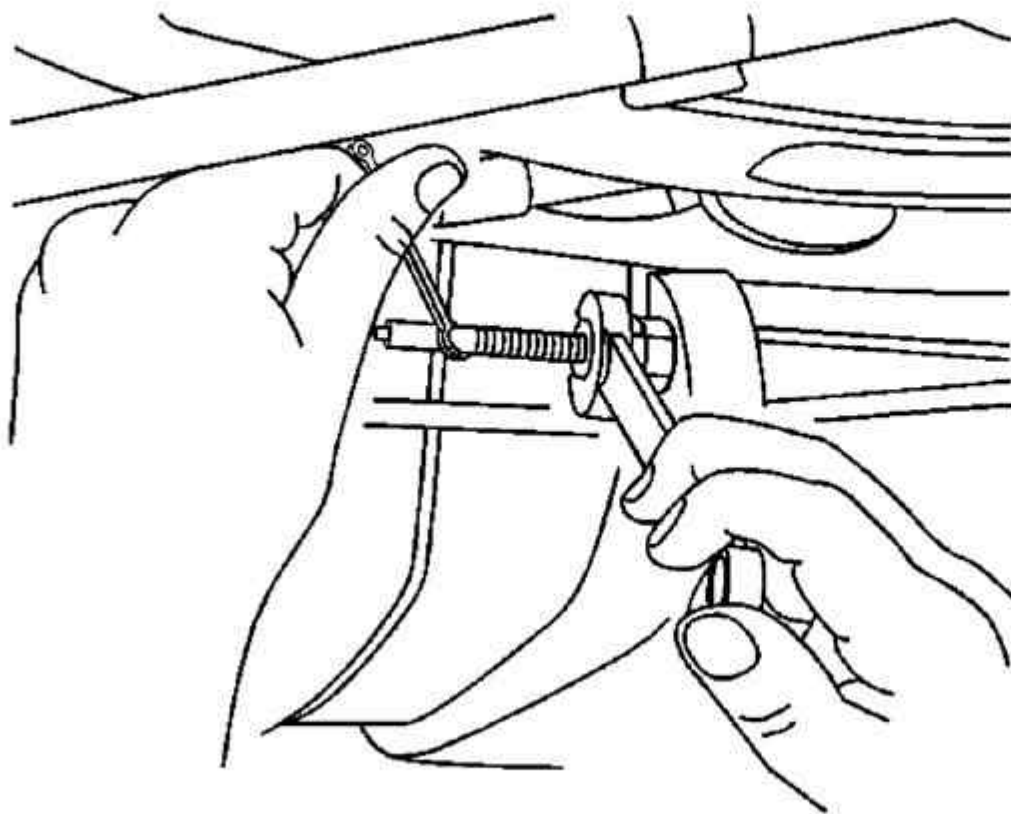


Fig. 24: Adjusting Park Brake Tension At Equalizer Assembly
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the left rear park brake cable and adjustment stud assembly from the equalizer assembly by removing the equalizer nut from the adjustment stud.

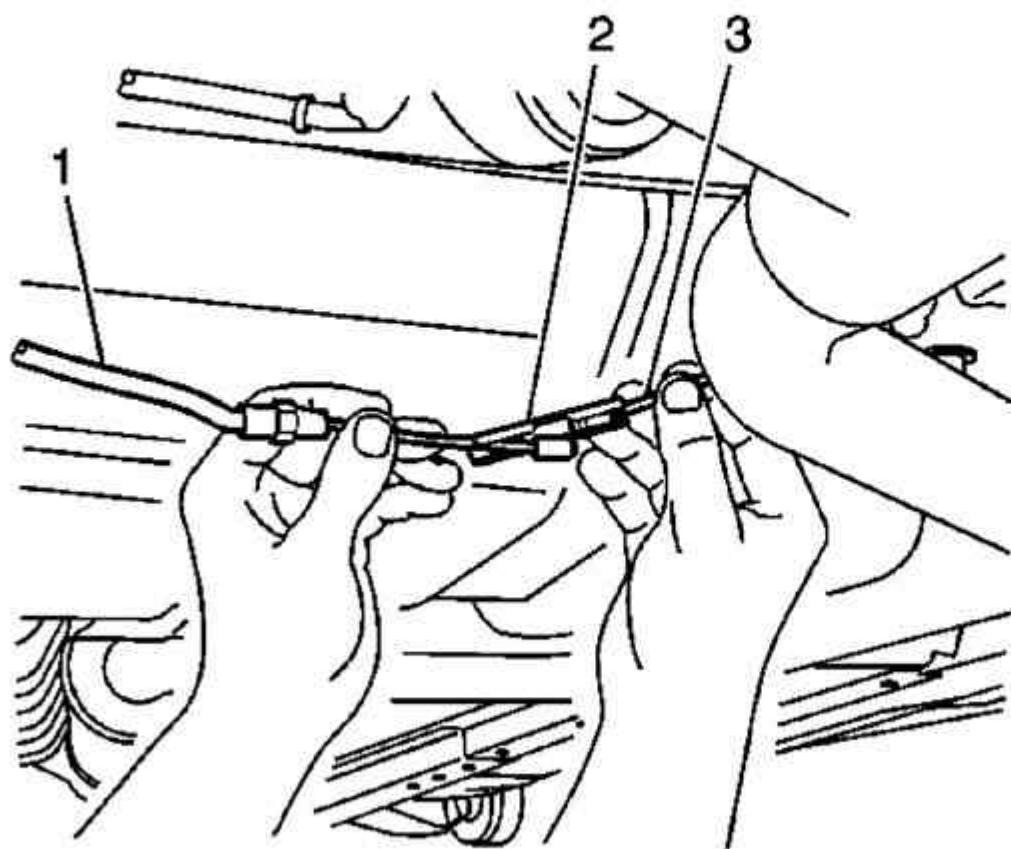


Fig. 25: View Of Front Brake Cable Connected To Right Rear Cable
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the front park brake cable (1) from the right rear cable (3) at the connector clip (2).

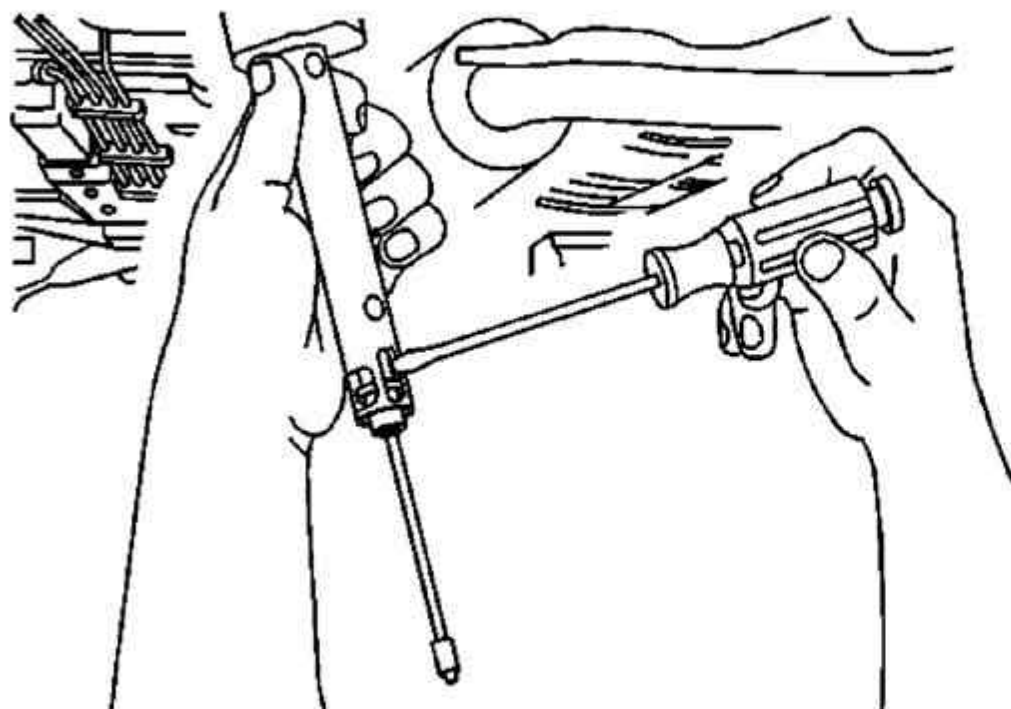


Fig. 26: Installing/Removing Equalizer Assembly From Front Park Brake Cable
Courtesy of GENERAL MOTORS CORP.

4. Remove the equalizer assembly from the front park brake cable. Insert a flat-bladed tool into the equalizer and lightly twist to reposition the equalizer retaining tab. This will release the assembly from the cable.

Installation Procedure

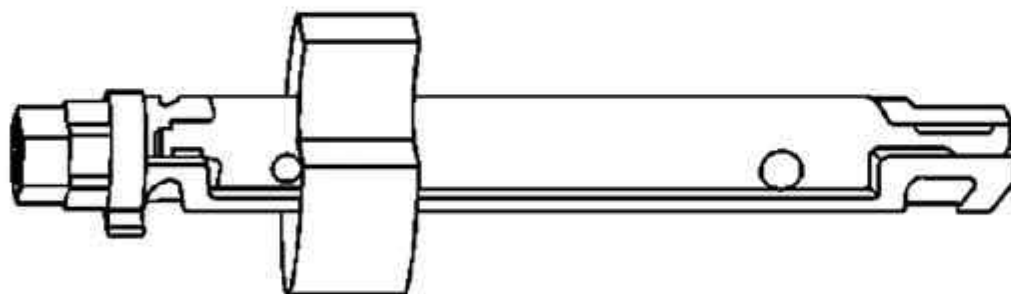


Fig. 27: View Of Equalizer Assembly
Courtesy of GENERAL MOTORS CORP.

1. Install the equalizer assembly to the front park brake cable.

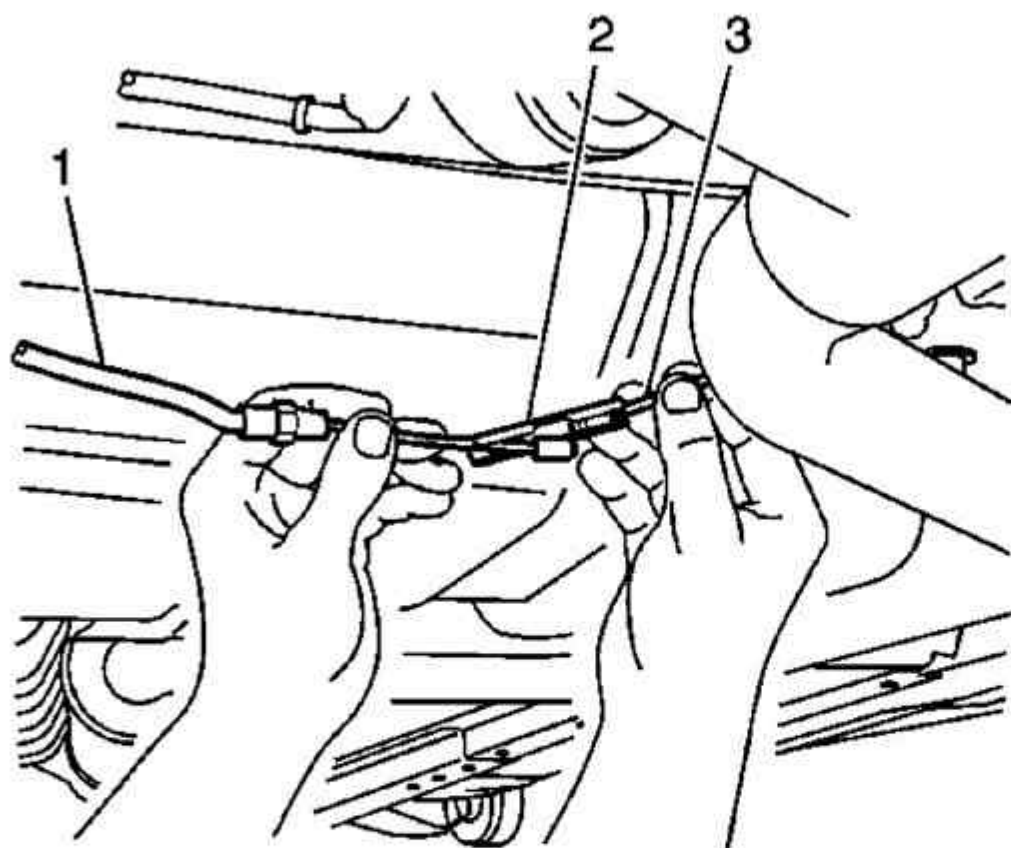


Fig. 28: View Of Front Brake Cable Connected To Right Rear Cable
Courtesy of GENERAL MOTORS CORP.

2. Connect the front brake cable (1) to the right rear cable (3) at the connector clip (2).
3. Connect the left rear brake cable and adjustment stud assembly to the equalizer assembly by installing the adjustment stud to the equalizer nut.
4. Adjust the Park Brake System. Refer to **Park Brake Adjustment (L26 and L32)**.
5. Lower the vehicle.

PARK BRAKE ADJUSTMENT (L26 AND L32)

CAUTION: Refer to **Park Brake Cable to Caliper Caution** .

CAUTION: Refer to **Brake Dust Caution** .

Adjustment of manual adjustment park brake cable system is necessary whenever the rear brake cables have been disconnected. A need for park brake cable adjustment is indicated if the hydraulic brake system operates with good reserve, but a firm park brake pedal feel cannot be achieved with less than one full stroke of the park brake pedal.

1. Apply and release the park brake 4 times.
2. Park brake light should be illuminated after park brake has been depressed slightly.
3. Check park brake pedal assembly for full release by turning the ignition on and inspecting PARK BRAKE warning light. Light should be off. If PARK BRAKE warning light is on and park brake appears to be fully released, pull the pedal back by hand and continue with the adjustment procedure.
4. Raise the vehicle and suitably support. Refer to **Lifting and Jacking the Vehicle** .
5. Check park brake levers on rear calipers. Levers should be against the stops on the caliper housing. If levers are not against stops, check for binding in rear brake cables and position levers against stops.
6. Tighten park brake cable at equalizer until either the left or right lever begins to move off stop.
7. Loosen adjustment at equalizer until the lever which has moved off the stop, as in step 5, is again resting fully against stops. Loosen tension at equalizer until the cables feel slightly loose to the touch. Cables should not sag under their own weight.
8. Operate park brake several times to check adjustment. A firm pedal feel should be obtained by depressing the pedal less than one full stroke.
9. Inspect left and right caliper levers. Both levers must be resting on stops after adjustment of parking brake.
10. Check the operation of the park brake. Refer to **Maintenance Schedule (North American Emissions)** .
11. To achieve optimal performance ensure cables are not over-tensioned at the equalizer.

DESCRIPTION AND OPERATION

PARK BRAKE SYSTEM DESCRIPTION AND OPERATION

IMPORTANT: Plastic coated park brake cables do not need periodic lubrication.

Coated park brake cables are used to reduce apply effort and increase corrosion protection. The cables are coated with a plastic material which slides against nylon seals inside the conduit end fittings.

The park brake lever has an indicator switch which closes when the park brake is set, thus illuminating the red BRAKE lamp.

Park brake application is completely independent of the hydraulic brake system. The park brake system is a mechanical system which operates the rear disc brakes through the calipers. The system is activated by depressing

the park brake pedal, which applies the rear disc brakes via cables. When the park brake is set and the ignition switch is on, the BRAKE warning lamp on the instrument panel will be on. The park brake is released by pushing the pedal down until a click is heard and then releasing. The pedal will click again and the BRAKE lamp in the instrument panel will go out when the park brake system is fully released.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/Description
	J 37043 Parking Brake Cable Release Tool

2008 Buick LaCrosse CXL
2008 BRAKES Park Brake - LaCrosse

2008 Buick LaCrosse CXL
2008 BRAKES Park Brake - LaCrosse

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