

2007 BRAKES**Park Brake - Outlook****SPECIFICATIONS****FASTENER TIGHTENING SPECIFICATIONS****Fastener Tightening Specifications**

Application	Specification	
	Metric	English
Driver Footrest Nuts	10 N.m	89 lb in
Park Brake Cable Bracket Bolt	10 N.m	89 lb in
Park Brake Cable Bracket Nut	9 N.m	80 lb in
Park Brake Pedal Nut	10 N.m	89 lb in
Park Brake Warning Lamp Switch Bolt	2.5 N.m	22 lb in

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.

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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

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 park brake system for proper operation. Refer to <u>Park Brake System Diagnosis</u> . Did you find and correct a condition?	Go to Step 5	Go to Step 3
3	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 4
4	Inspect the hydraulic brake system for proper operation. Refer to <u>Hydraulic Brake System Diagnosis</u> . Did you find and correct a condition?	Go to Step 5	Go to <u>Diagnostic Starting Point - Park Brake</u>
5	Road test the vehicle in order to confirm proper operation. Refer to <u>Brake System Vehicle Road Test</u> . Is the condition still present?	Go to Step 2	System OK

PARK BRAKE SYSTEM DIAGNOSIS

Park Brake System Diagnosis

Step	Action	Yes	No
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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

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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	<ol style="list-style-type: none"> 1. Raise and support the vehicle with the rear axle supported by jack stands. Refer to <u>Lifting and Jacking the Vehicle</u> . 2. Shift the transmission into NEUTRAL. 3. With the park brake RELEASED, attempt to rotate the rear wheels to check the rear brakes for a significant amount of drag. <p>Do the rear brakes have a significant amount of drag?</p>	Go to Step 11	Go to Step 5
5	<ol style="list-style-type: none"> 1. Shift the transmission into NEUTRAL. 2. Apply the park brake. 3. Attempt to rotate the rear wheels to check the rear brakes for a significant amount of drag. <p>Do the rear brakes have a significant amount of drag?</p>	Go to Step 6	Go to Step 7
6	<ol style="list-style-type: none"> 1. Release the park brake. 2. Rotate the rear wheels to check the rear brakes for a significant reduction in the amount of drag. 		

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	Did the rear brakes exhibit a significant reduction in the amount of drag?	Go to Step 22	Go to Step 11
7	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 8	Go to Step 9
8	<p>Reconnect or replace the park brake cables as necessary. Refer to the following procedures as necessary:</p> <ul style="list-style-type: none"> • <u>Parking Brake Front Cable Replacement</u> • <u>Parking Brake Rear Cable Replacement - Left Side</u> • <u>Parking Brake Rear Cable Replacement - Right Side</u> <p>Did you complete the repair and/or replacement?</p>	Go to Step 9	-
9	Check the adjustment of the park brake. Refer to <u>Park Brake Adjustment</u> . Was the park brake adjusted properly?	Go to Step 11	Go to Step 10
10	Adjust the park brake. Refer to <u>Park Brake Adjustment</u> . Were you able to attain adjustment of the park brake?	Go to Step 16	Go to Step 11
11	<p>NOTE: Do not depress the brake pedal with the brake rotors and/or the brake drums removed or with the brake calipers repositioned away from the brake rotors or damage to the brake system may result.</p> <p>1. Remove the rear brake rotors. Refer to <u>Rear Brake Rotor Replacement</u> .</p>		

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	<p>2. Inspect the park brake shoe hardware for looseness, damaged, broken or missing components.</p> <p>3. Check the park brake actuators for a seized condition.</p> <p>Does the park brake hardware and/or the park brake actuators require replacement?</p>	Go to Step 12	Go to Step 13
12	<p>Replace the park brake actuators as necessary. Refer to <u>Parking Brake Actuator Replacement</u>.</p> <p>Did you complete the replacement?</p>	Go to Step 13	-
13	<p>Have an assistant apply and release the park brake, while you observe the park brake cables for free movement.</p> <p>Did the park brake cables move freely?</p>	Go to Step 14	Go to Step 17
14	<p>Check the adjustment of the park brake. Refer to <u>Park Brake Adjustment</u>.</p> <p>Was the park brake adjusted properly?</p>	Go to Step 16	Go to Step 15
15	<p>Adjust the park brake. Refer to <u>Park Brake Adjustment</u>.</p> <p>Were you able to attain adjustment of the park brake?</p>	Go to Step 16	Go to Step 26
16	<p>1. With the transmission still in NEUTRAL, apply the park brake.</p> <p>2. Attempt to rotate the rear wheels to check the rear brakes for a significant amount of drag.</p> <p>3. Release the park brake.</p> <p>4. Rotate the rear wheels to check the rear brakes for a significant reduction of drag.</p> <p>Did the park brake apply and release properly?</p>	Go to Step 28	Return to <u>Park Brake System Diagnosis</u>
	<p>Disconnect the park brake cable connections that are accessible on the UNDERSIDE of the vehicle one at a time</p>		

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17	and check each cable for free movement. Do any of the park brake cables accessible on the underside of the vehicle require replacement?	Go to Step 18	Go to Step 19
18	<p>Replace any of the park brake cables that do not have free movement (not releasing properly). Refer to the following procedures as necessary:</p> <ul style="list-style-type: none"> • <u>Parking Brake Front Cable Replacement</u> • <u>Parking Brake Rear Cable Replacement - Left Side</u> • <u>Parking Brake Rear Cable Replacement - Right Side</u> <p>Did you complete the replacement?</p>	Go to Step 19	-
19	<ol style="list-style-type: none"> 1. Disconnect the front park brake cable connection accessible INSIDE the vehicle at the park brake pedal assembly and check for free movement. 2. Replace the front park brake cable if it does not have free movement. Refer to <u>Parking Brake Front Cable Replacement</u>. <p>Did you find and correct a condition?</p>	Go to Step 24	Go to Step 20
20	<p>Replace the park brake pedal assembly (not releasing properly). Refer to <u>Park Brake Pedal Assembly Replacement</u>.</p> <p>Did you complete the replacement?</p>	Go to Step 25	-
21	<p>Check the adjustment of the park brake. Refer to <u>Park Brake Adjustment</u>.</p> <p>Is the park brake adjusted properly?</p>	Go to Step 28	Go to Step 22
22	<p>Adjust the park brake. Refer to <u>Park Brake Adjustment</u>.</p>		

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	Were you able to attain adjustment of the park brake system?	Go to Step 27	Go to Step 23
23	<ol style="list-style-type: none"> 1. Remove the rear brake rotors, if they have not yet been removed. Refer to <u>Rear Brake Rotor Replacement</u> . 2. Check the park brake actuators for a seized condition. 3. Replace the park brake actuators as necessary. Refer to <u>Parking Brake Actuator Replacement</u>. 		
	Did you find and correct a condition?	Go to Step 24	Go to Step 26
24	Adjust the park brake. Refer to <u>Park Brake Adjustment</u> . Were you able to attain adjustment of the park brake system?	Go to Step 27	Go to Step 26
25	Adjust the park brake. Refer to <u>Park Brake Adjustment</u> . Were you able to attain adjustment of the park brake system?	Go to Step 27	Return to Symptom Table
26	<ol style="list-style-type: none"> 1. Replace the component that is used to adjust the park brake system. Refer to <u>Park Brake Pedal Assembly Replacement</u>. 2. Adjust the park brake. Refer to <u>Park Brake Adjustment</u>. 		
	Did you complete the replacement and adjustment?	Go to Step 27	Return to Symptom Table
27	<ol style="list-style-type: none"> 1. With the transmission still in NEUTRAL, apply the park brake. 2. Attempt to rotate the rear wheels to check the rear brakes for a significant amount of drag. 3. Release the park brake. 4. Rotate the rear wheels to check the rear brakes for a significant 		

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	reduction of drag. Did the park brake apply and release properly?	Go to Step 28	Return to Symptom Table
28	Install or connect any components that were removed or disconnected during diagnosis. Did you complete the operation?	Park Brake System OK Return to Symptom Table	-

PARK BRAKE SHOE INSPECTION

CAUTION: Refer to Brake Dust Caution .

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .
3. Remove the rear brake caliper bracket with the rear brake caliper. Refer to Rear Brake Caliper Bracket Replacement .

IMPORTANT: DO NOT apply the park brake pedal with the rotors removed.

4. Remove the rear brake rotor. Refer to Rear Brake Rotor Replacement .
5. Inspect and replace the park brake shoe and lining if any of the following conditions are found:
 - Excessive wear indicated by the park brake lining being worn down to the shoe
 - Park brake lining cracking
 - Oil or fluid contamination of the park brake lining
6. Adjust the park brake shoe. Refer to Park Brake Adjustment .
7. Install the rear brake rotor. Refer to Rear Brake Rotor Replacement .
8. Install the rear brake caliper with the rear brake caliper bracket. Refer to Rear Brake Caliper Bracket Replacement .
9. Install the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .
10. Lower the vehicle.

REPAIR INSTRUCTIONS

PARK BRAKE SHOE REPLACEMENT

Removal Procedure

CAUTION: Refer to Brake Dust Caution .

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .
3. Remove the rear brake rotor. Refer to Rear Brake Rotor Replacement .
4. Retract the park brake shoe adjuster to ease removal. Refer to Park Brake Adjustment.

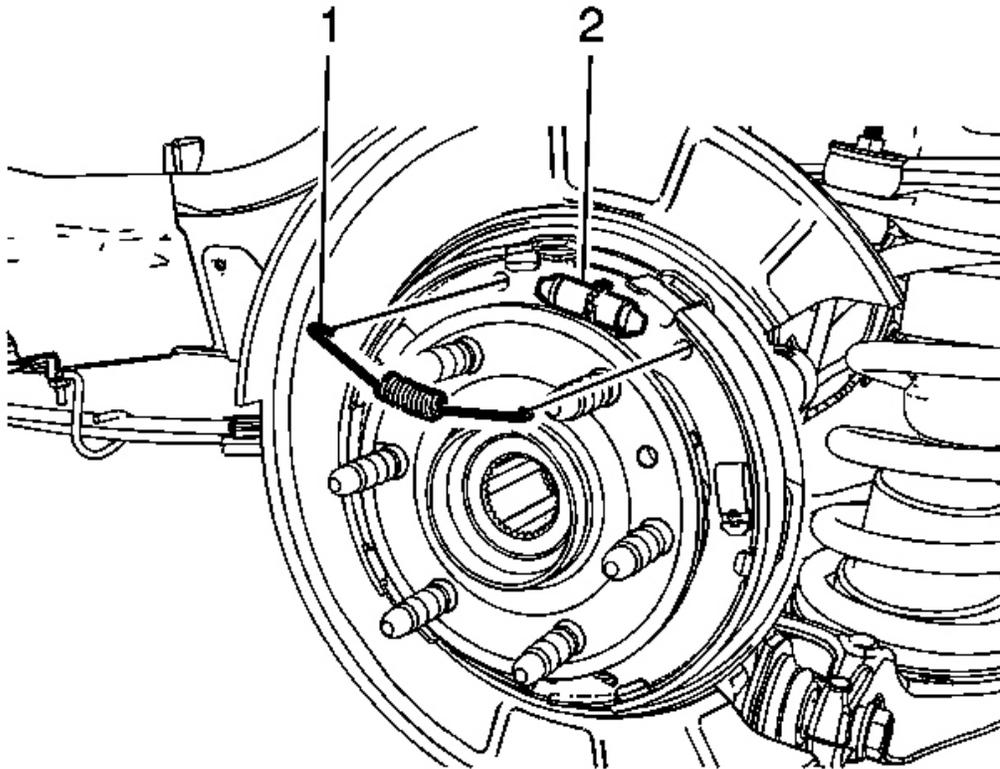


Fig. 1: Identifying Upper Park Brake Shoe Retainer Spring
Courtesy of GENERAL MOTORS CORP.

5. Remove the upper park brake shoe retainer spring (1).
6. Remove the park brake shoe adjuster (2).

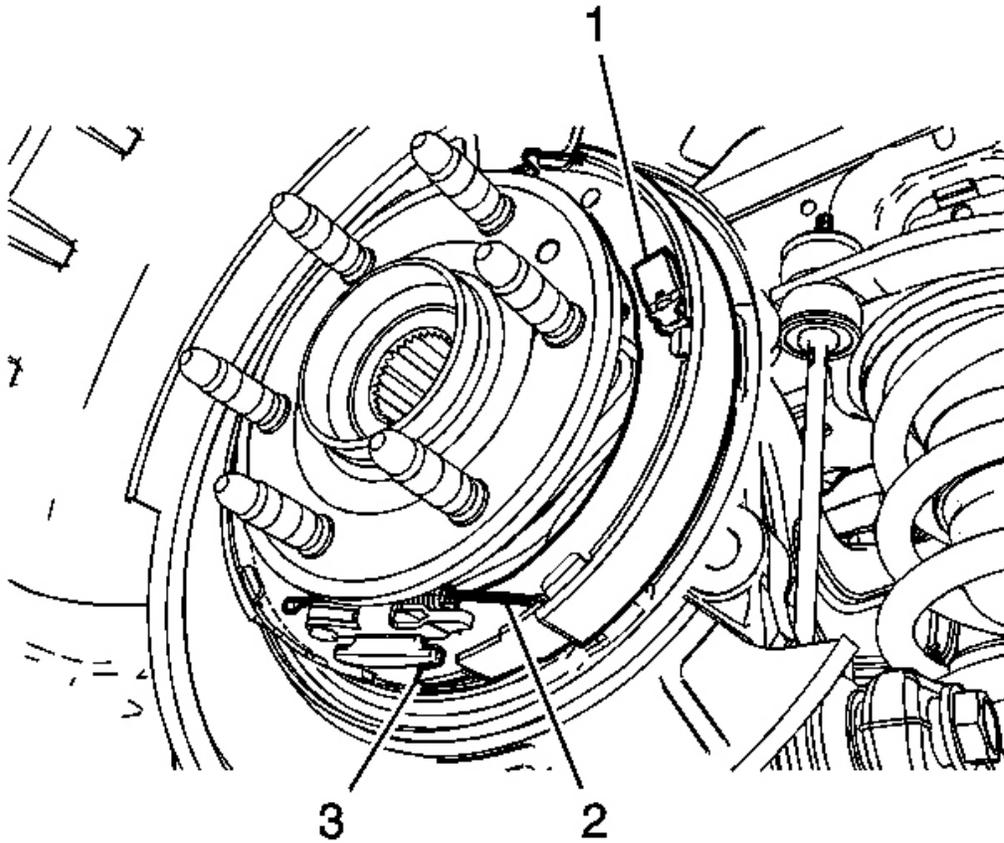


Fig. 2: View Of Lower Park Brake Shoe Retainer Spring & Rear Park Brake Shoe
Courtesy of GENERAL MOTORS CORP.

7. Remove the rear park brake shoe hold down spring (1) by compressing the spring and rotating 1/4 turn.
8. Remove the lower park brake shoe retainer spring (2) and the rear park brake shoe (3).

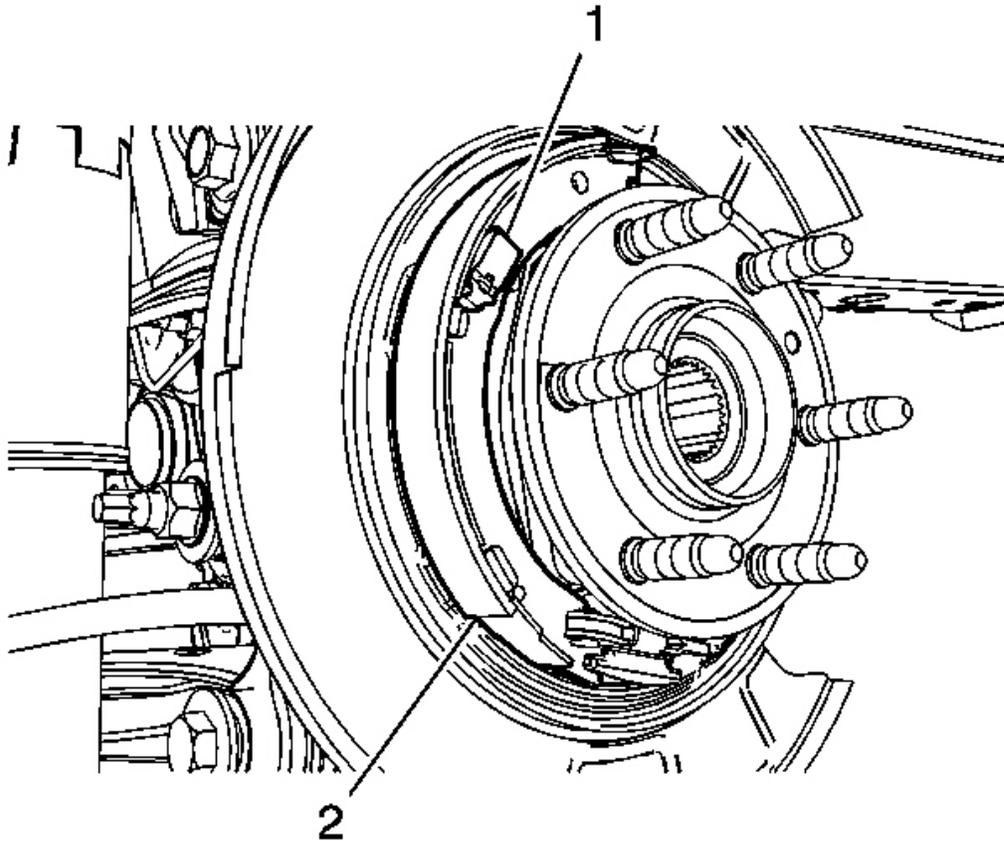


Fig. 3: Identifying Front Park Brake Shoe
Courtesy of GENERAL MOTORS CORP.

9. Remove the front park brake shoe hold down spring (1) by compressing the spring and rotating 1/4 turn.
10. Remove the front park brake shoe (2).
11. Clean the rear brake backing plate with denatured alcohol or equivalent and allow to dry.

Installation Procedure

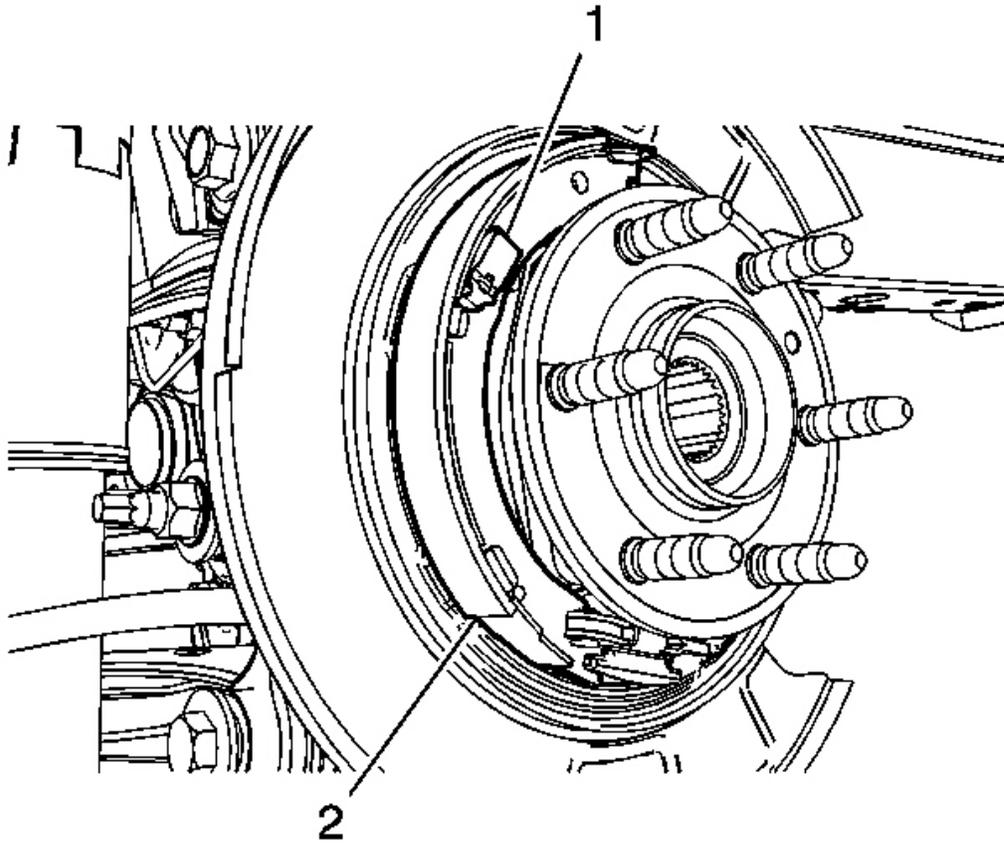


Fig. 4: Identifying Front Park Brake Shoe
Courtesy of GENERAL MOTORS CORP.

1. Apply a light coat of high temperature brake lubricant to the park brake shoe contact areas of the brake backing plate.
2. Install the front park brake shoe (2).

Ensure the park brake shoe is properly seated in the park brake actuator.

3. Install the front park brake shoe hold down spring (1) by compressing the spring and rotating 1/4 turn.

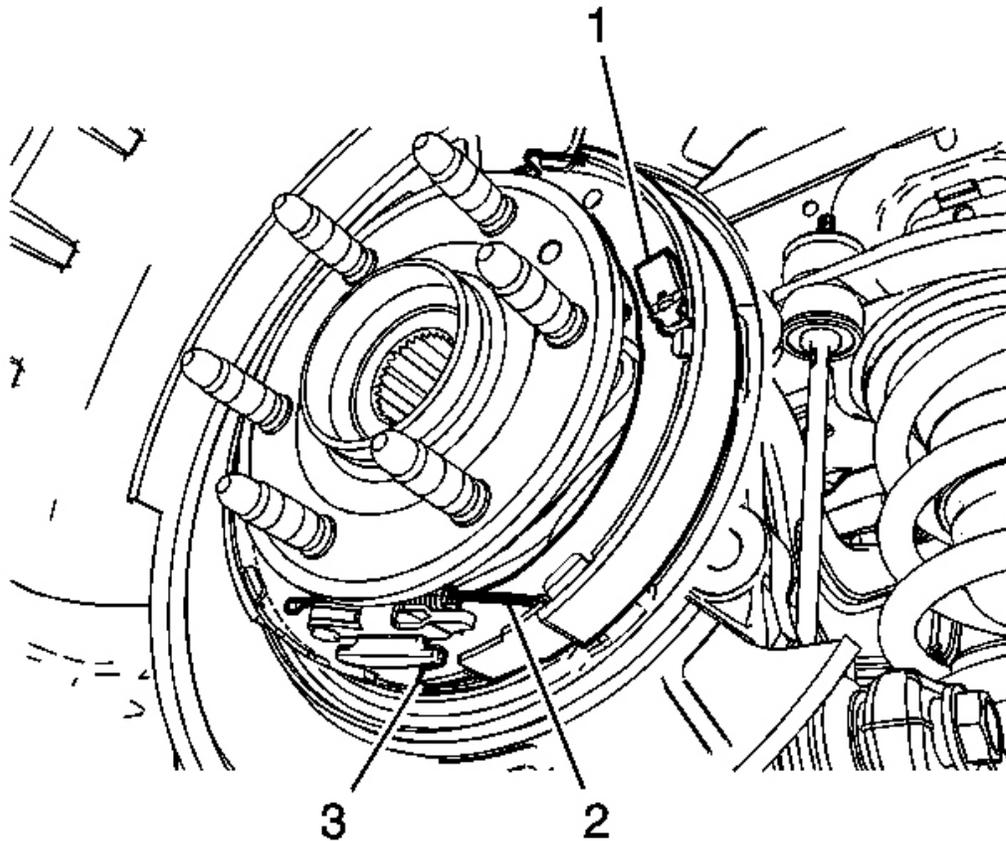


Fig. 5: View Of Lower Park Brake Shoe Retainer Spring & Rear Park Brake Shoe
Courtesy of GENERAL MOTORS CORP.

4. Install the rear park brake shoe (3) and the lower park brake shoe retainer spring (2).

Ensure the park brake shoe is properly seated in the park brake actuator.

5. Install the rear park brake shoe hold down spring (1) by compressing the spring and rotating 1/4 turn.

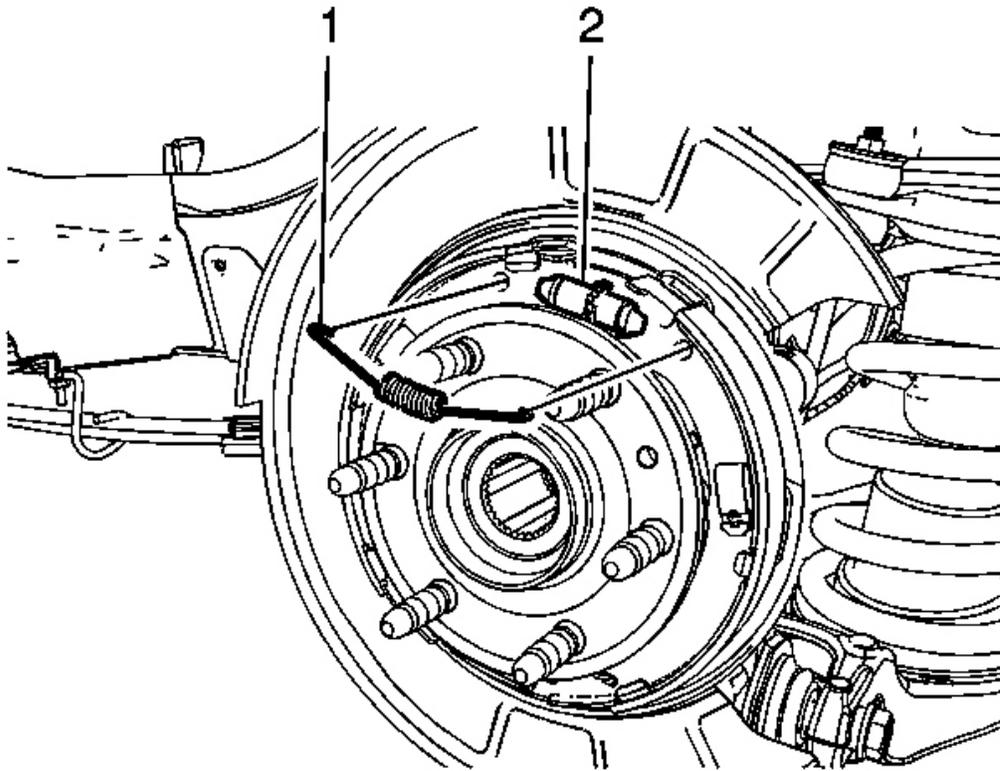


Fig. 6: Identifying Upper Park Brake Shoe Retainer Spring
Courtesy of GENERAL MOTORS CORP.

6. Install the park brake shoe adjuster (2).
7. Install the upper park brake shoe retainer spring (1).
8. Adjust the park brake. Refer to **Park Brake Adjustment**.

PARK BRAKE PEDAL ASSEMBLY REPLACEMENT

Removal Procedure

1. Remove the left side instrument panel insulator panel. Refer to **Instrument Panel Insulator Panel Replacement - Left Side** .
2. Remove the driver side front carpet retainer. Refer to **Front Carpet Retainer Replacement** .
3. Disconnect the park brake warning indicator switch electrical connector.

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

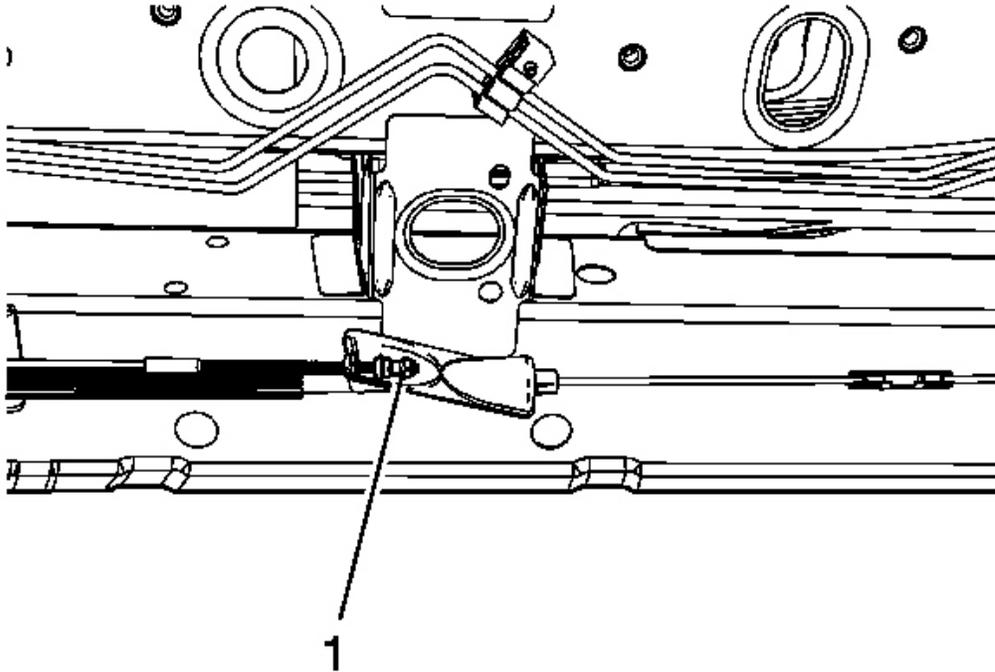


Fig. 7: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

5. Loosen the park brake cable locknut (1) at the equalizer to relieve tension on the park brake cable.

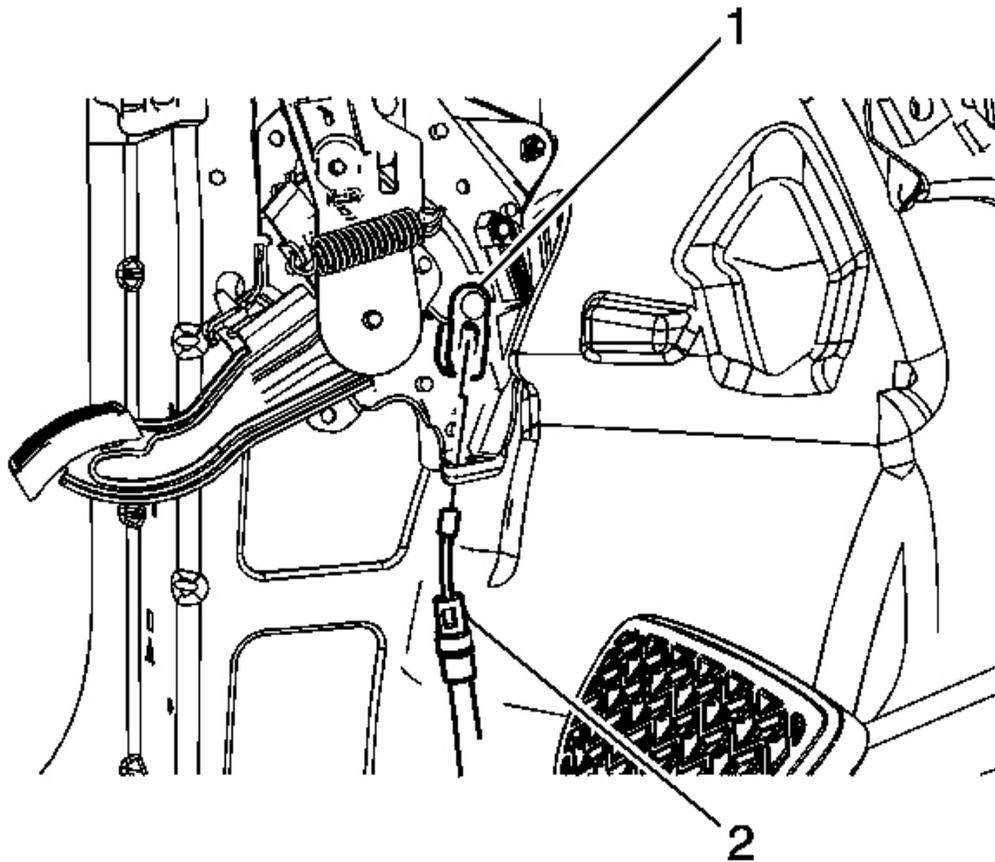


Fig. 8: Identifying Front Park Brake Cable & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the front park brake cable from the park brake pedal clevis (1).
7. Remove the front park brake cable from the park brake pedal assembly by compressing the locking tabs on the cable conduit (2).

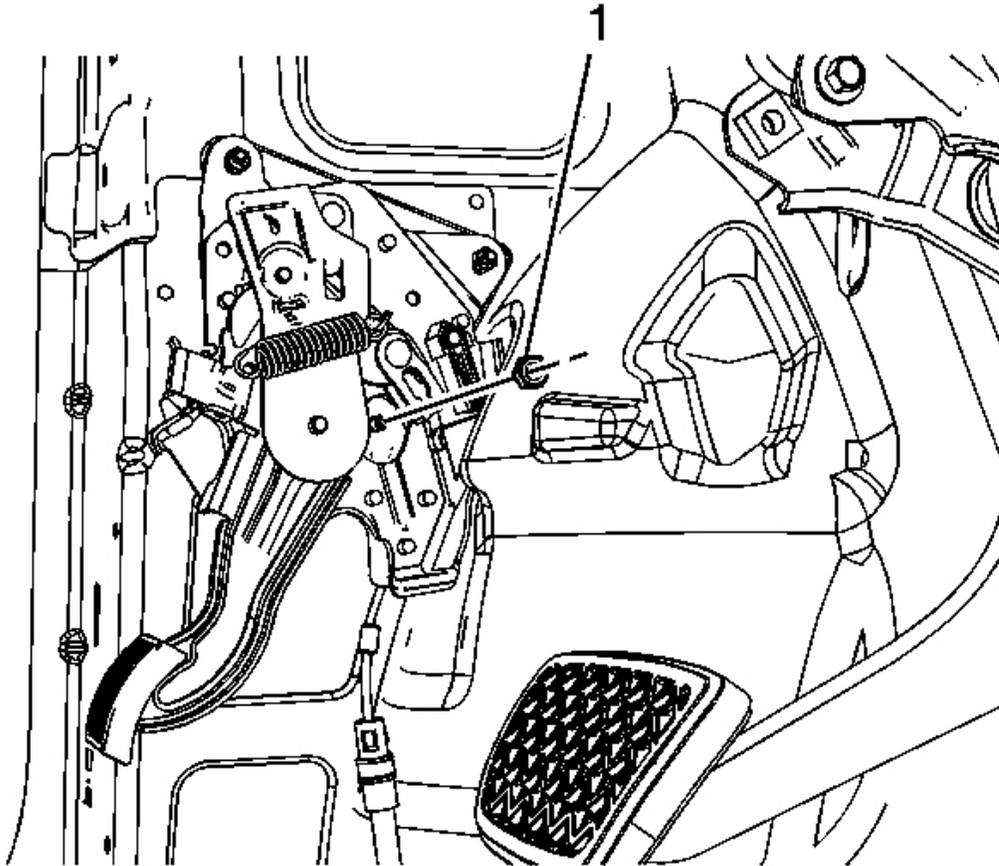


Fig. 9: Identifying Lower Park Brake Pedal Nut
Courtesy of GENERAL MOTORS CORP.

8. Apply the park brake pedal until the clevis exposes the lower park brake pedal nut.
9. Remove the lower park brake pedal nut (1).

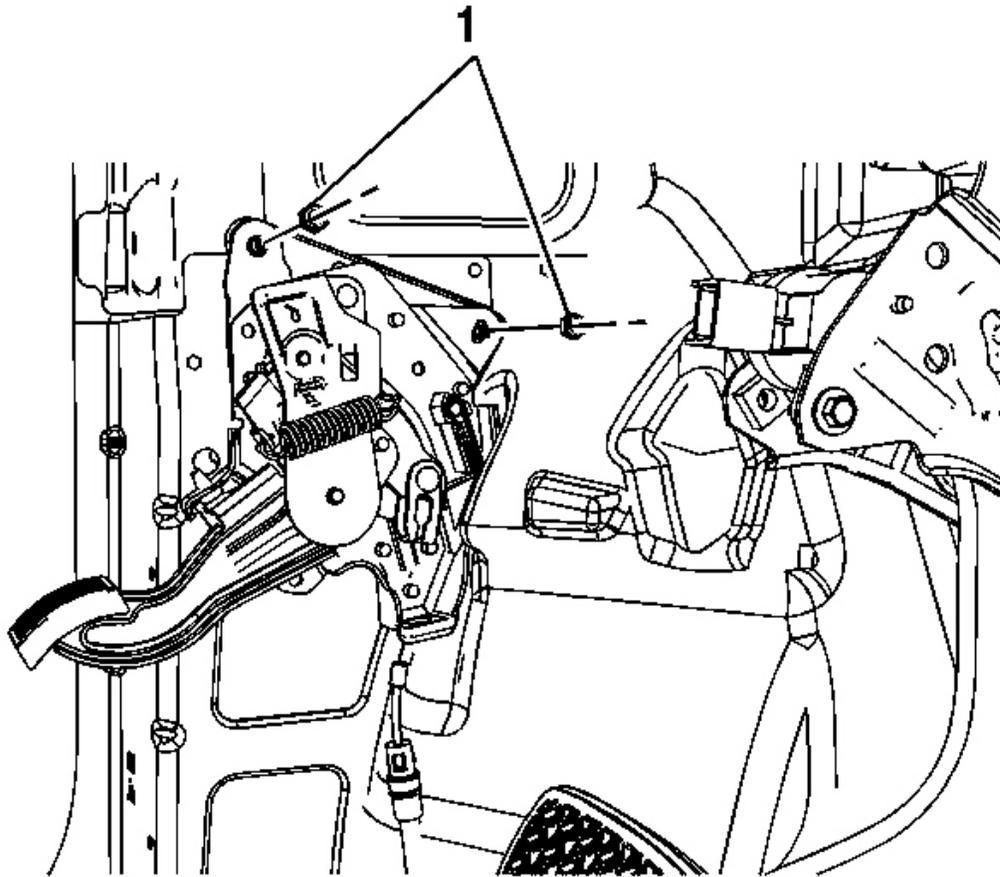


Fig. 10: View Of Upper Park Brake Pedal Nuts
Courtesy of GENERAL MOTORS CORP.

10. Remove the 2 upper park brake pedal nuts (1).
11. Remove the park brake pedal assembly.

Installation Procedure

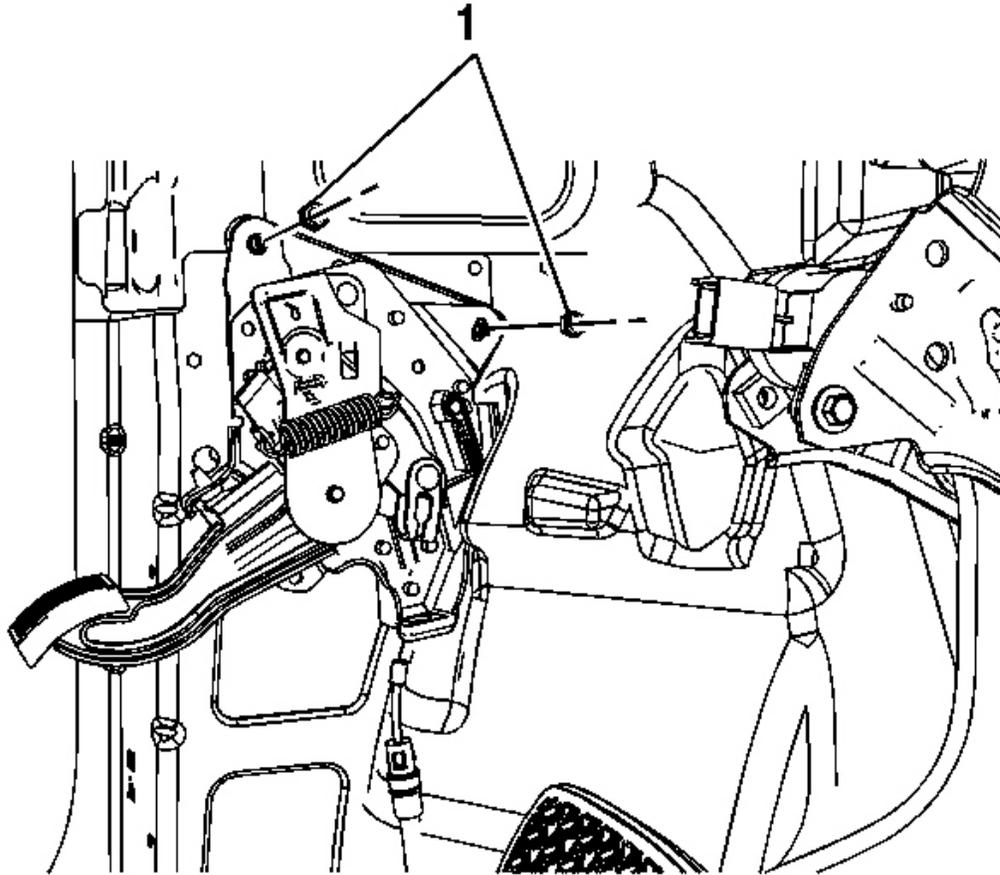


Fig. 11: View Of Upper Park Brake Pedal Nuts
Courtesy of GENERAL MOTORS CORP.

1. Install the park brake pedal assembly.

NOTE: Refer to Fastener Notice .

2. Install the 2 upper park brake pedal nuts (1).

Tighten: Tighten the nuts to 10 N.m (89 lb in).

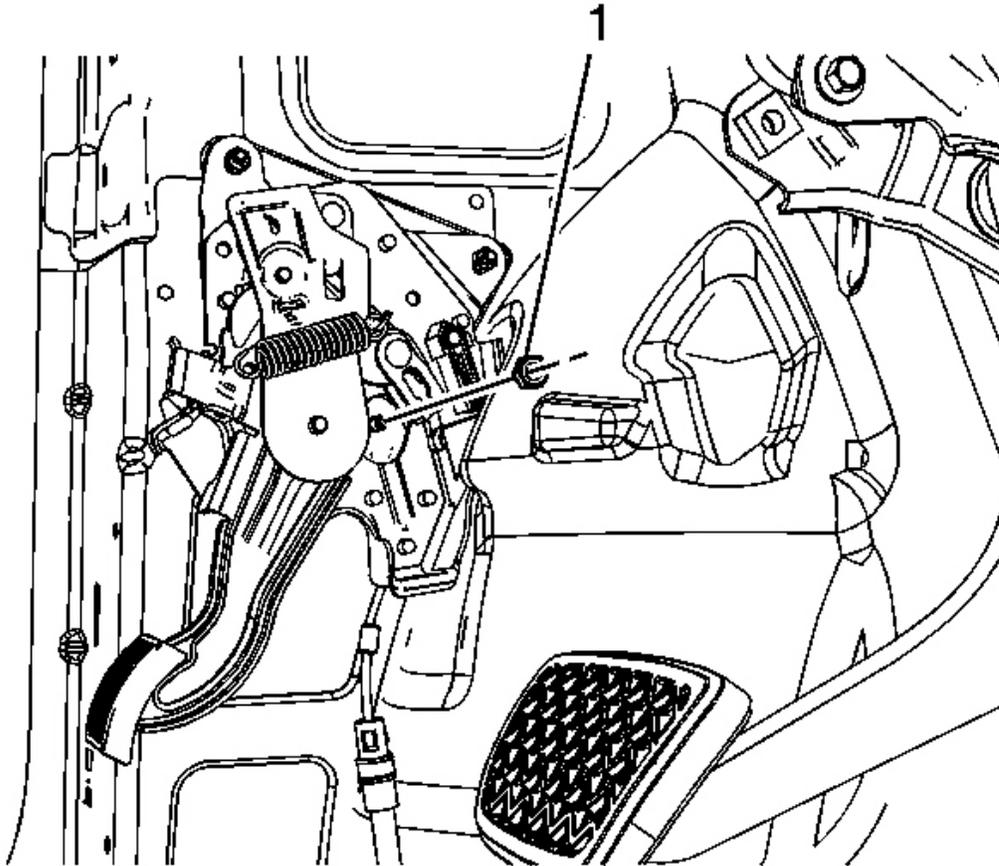


Fig. 12: Identifying Lower Park Brake Pedal Nut
Courtesy of GENERAL MOTORS CORP.

3. If necessary, apply the park brake pedal until the clevis exposes the lower park brake pedal assembly mounting stud.
4. Install the lower park brake pedal nut (1).

Tighten: Tighten the nut to 10 N.m (89 lb in).

5. Release the park brake pedal.

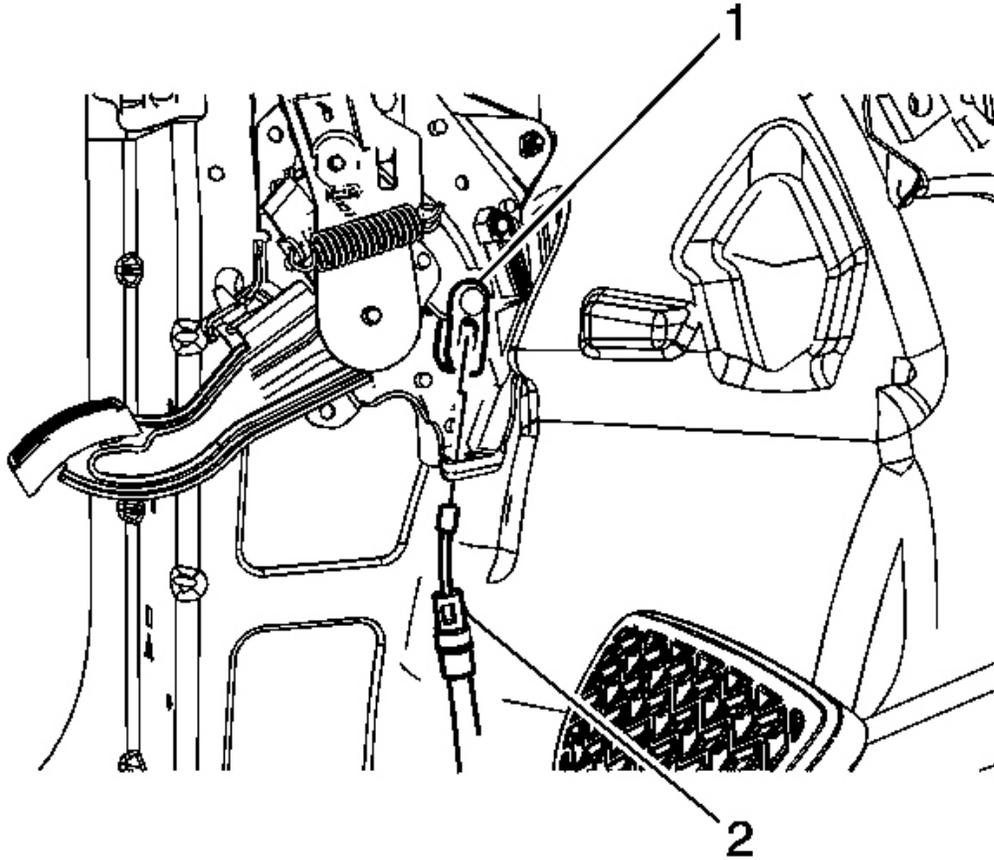


Fig. 13: Identifying Front Park Brake Cable & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

6. Connect the front park brake cable to the park brake pedal clevis (1).
7. Install the front park brake cable to the park brake pedal assembly.

Ensure the locking tabs on the cable conduit (2) are fully engaged to the park brake pedal assembly.

8. Connect the park brake warning indicator switch electrical connector.
9. Install the driver side front carpet retainer. Refer to **Front Carpet Retainer Replacement** .
10. Install the left side instrument panel insulator panel. Refer to **Instrument Panel Insulator**

Panel Replacement - Left Side .

11. Adjust the park brake. Refer to **Park Brake Adjustment.**

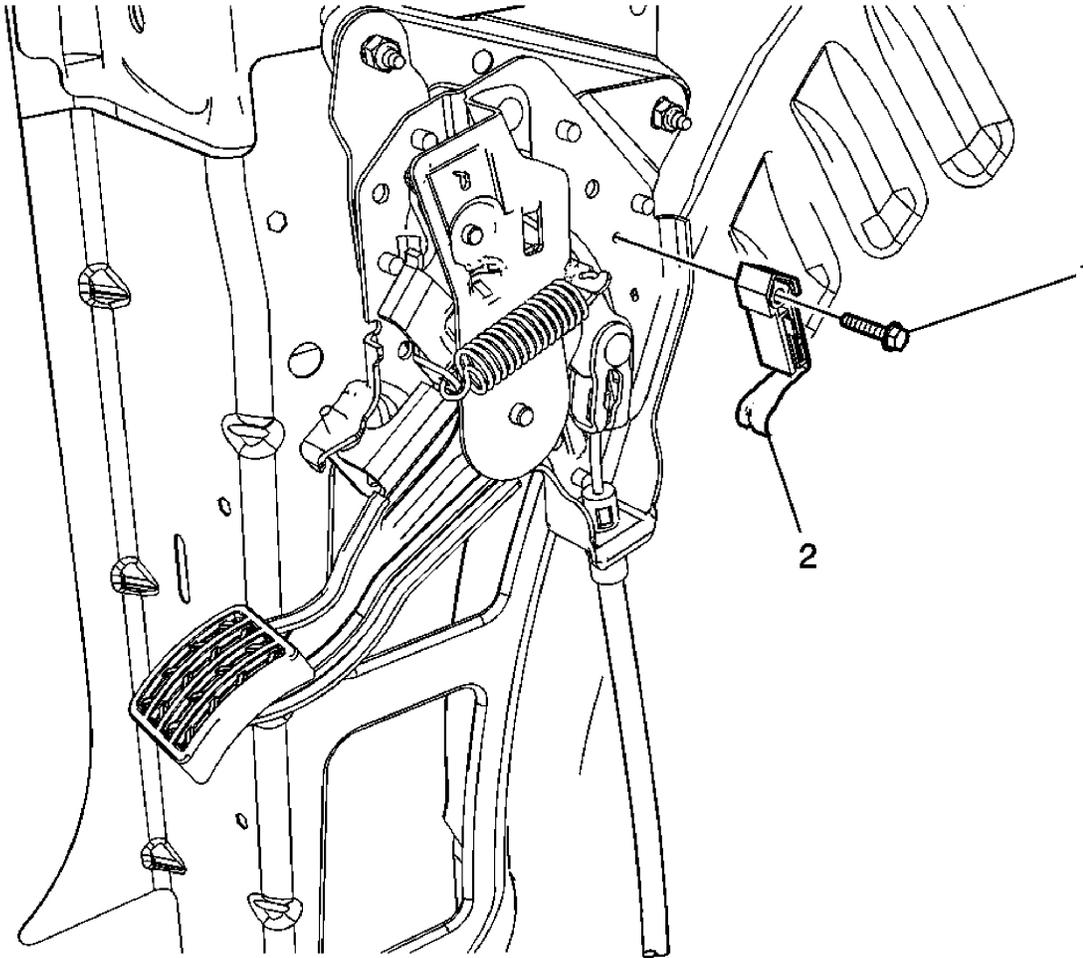
PARK BRAKE WARNING LAMP SWITCH REPLACEMENT

Fig. 14: Identifying Parking Brake Indicator Switch
 Courtesy of GENERAL MOTORS CORP.

Park Brake Warning Lamp Switch Replacement

Callout	Component Name
Preliminary Procedures	
1.	Remove the left side instrument panel insulator panel. Refer to <u>Instrument Panel Insulator Panel Replacement - Left Side .</u>
2.	Remove the driver side front carpet retainer. Refer to <u>Front Carpet Retainer</u>

Replacement .

3. Disconnect the park brake warning indicator switch electrical connector.

1	Park Brake Warning Lamp Switch Bolt NOTE: Refer to <u>Fastener Notice</u> . Tighten: 2.5 N.m (22 lb in)
2	Park Brake Warning Lamp Switch

PARKING BRAKE FRONT CABLE REPLACEMENT**Removal Procedure**

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

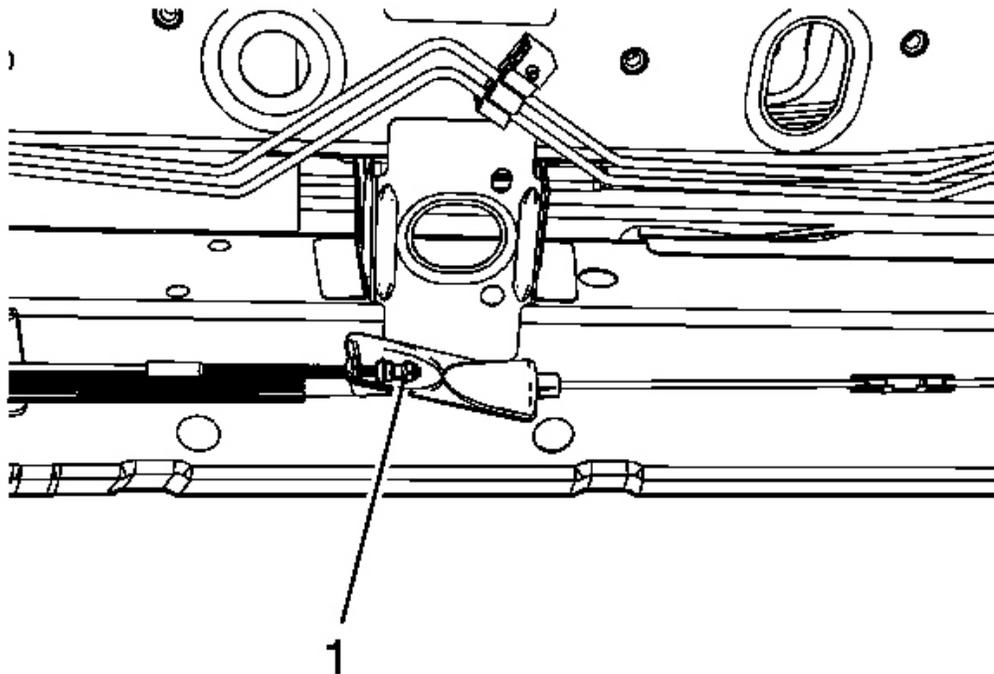


Fig. 15: Identifying Park Brake Cable Locknut
 Courtesy of GENERAL MOTORS CORP.

2. Loosen the park brake cable locknut (1) at the equalizer to relieve tension on the park brake cable.

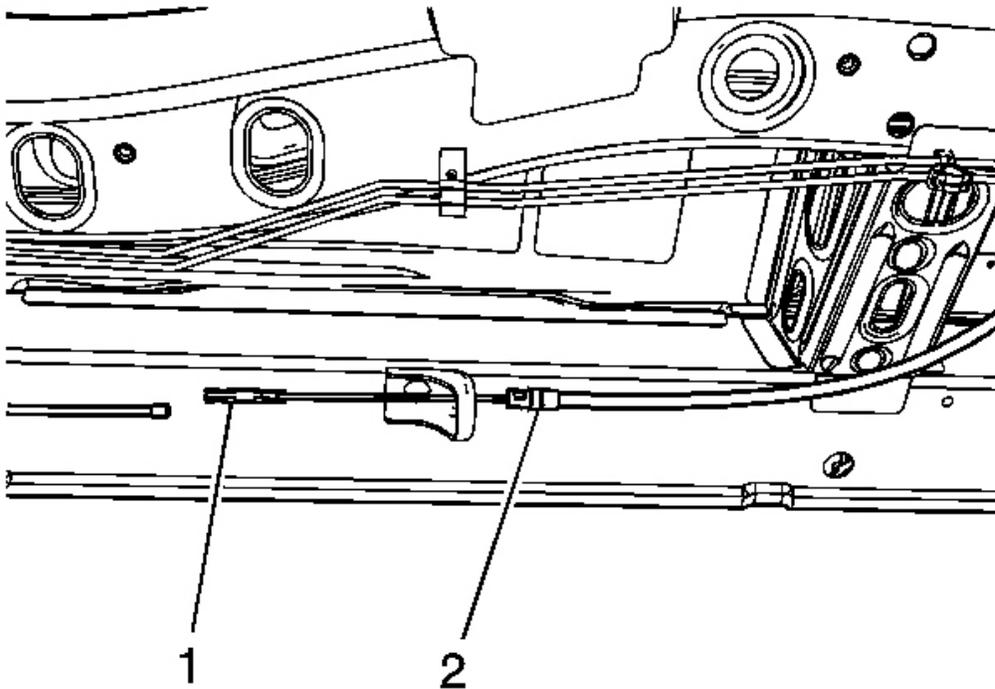


Fig. 16: Identifying Front Park Brake Cable
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the front park brake cable (1) from the rear park brake cable.
4. Remove the front park brake cable from the park brake cable bracket on the body by compressing the locking tabs on the cable conduit (2).
5. Remove the left side instrument panel insulator panel. Refer to **Instrument Panel Insulator Panel Replacement - Left Side** .
6. Remove the driver side front carpet retainer. Refer to **Front Carpet Retainer Replacement** .

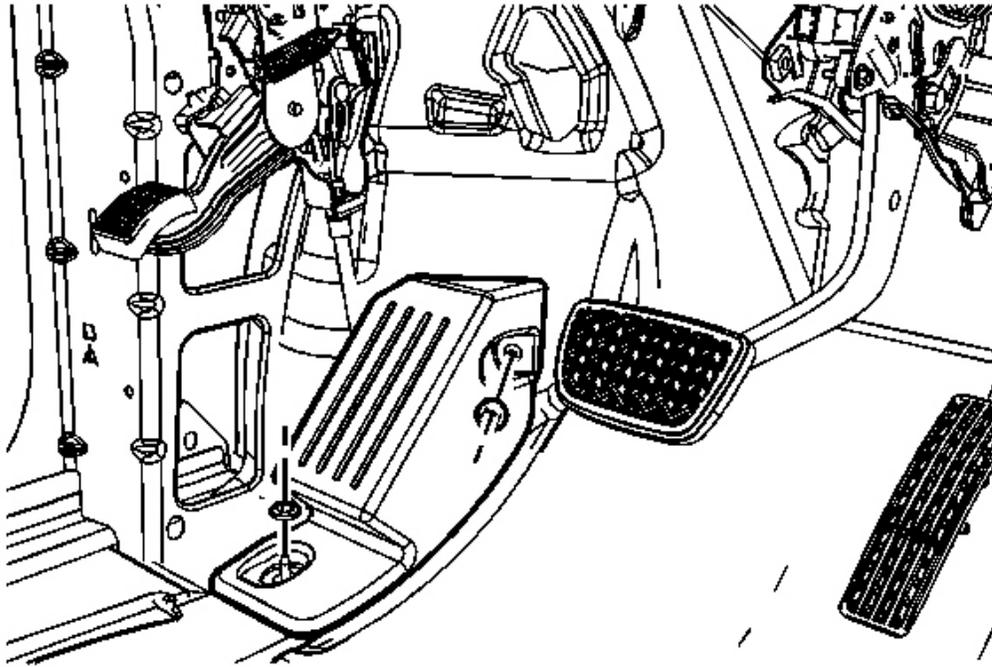


Fig. 17: View Of Driver Footrest & Nuts
Courtesy of GENERAL MOTORS CORP.

7. Remove the 2 nuts and the driver footrest.

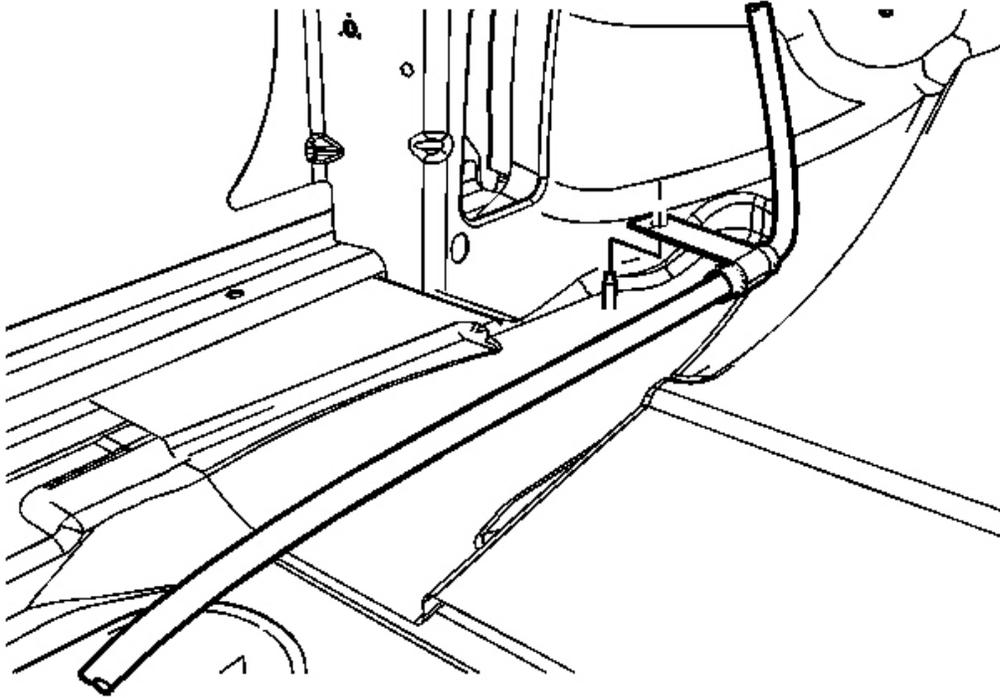


Fig. 18: View Of Park Brake Cable & Routing Clip
Courtesy of GENERAL MOTORS CORP.

8. Lift the driver floor carpet to expose the front park brake cable routing clip.
9. Release the park brake cable routing clip from the floor stud.

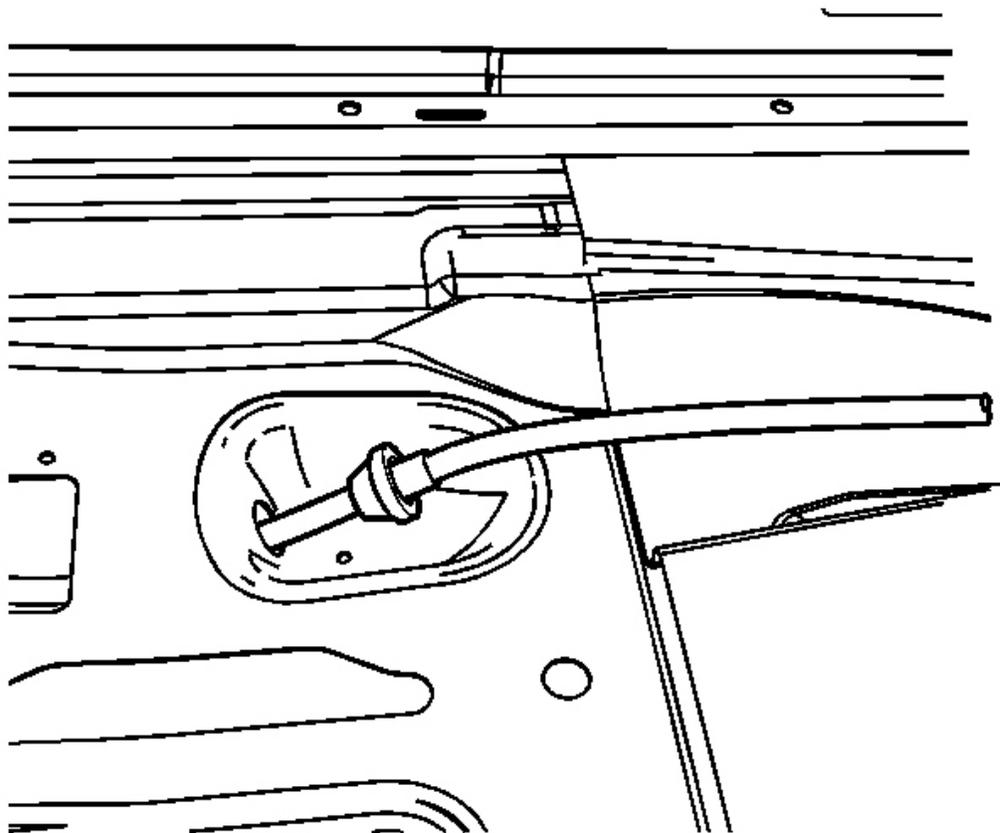


Fig. 19: View Of Park Brake Cable Pass Through Grommet
Courtesy of GENERAL MOTORS CORP.

10. Release the front park brake cable pass through grommet.

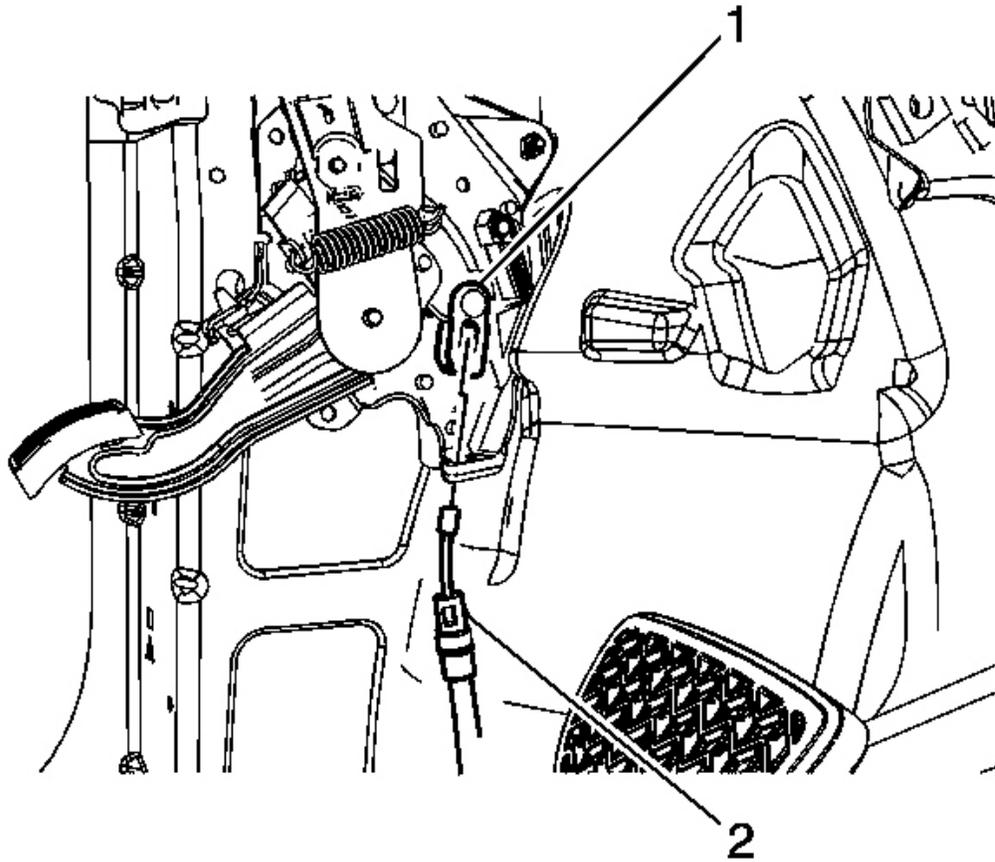


Fig. 20: Identifying Front Park Brake Cable & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

11. Disconnect the front park brake cable from the park brake pedal clevis (1).
12. Remove the front park brake cable from the park brake pedal assembly by compressing the locking tabs on the cable conduit (2).
13. Remove the front park brake cable assembly.

Installation Procedure

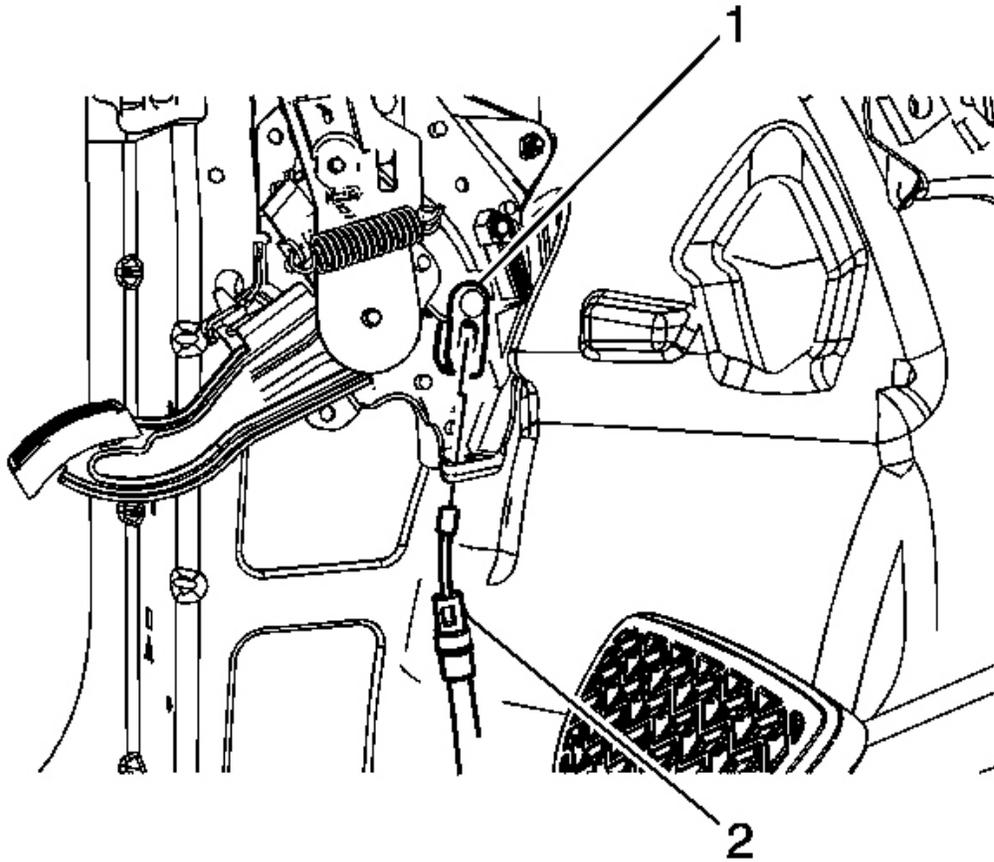


Fig. 21: Identifying Front Park Brake Cable & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

1. Install the front park brake cable assembly.
2. Connect the front park brake cable to the park brake pedal clevis (1).
3. Install the front park brake cable to the park brake pedal assembly.

Ensure the locking tabs on the cable conduit (2) are fully engaged to the park brake pedal assembly.

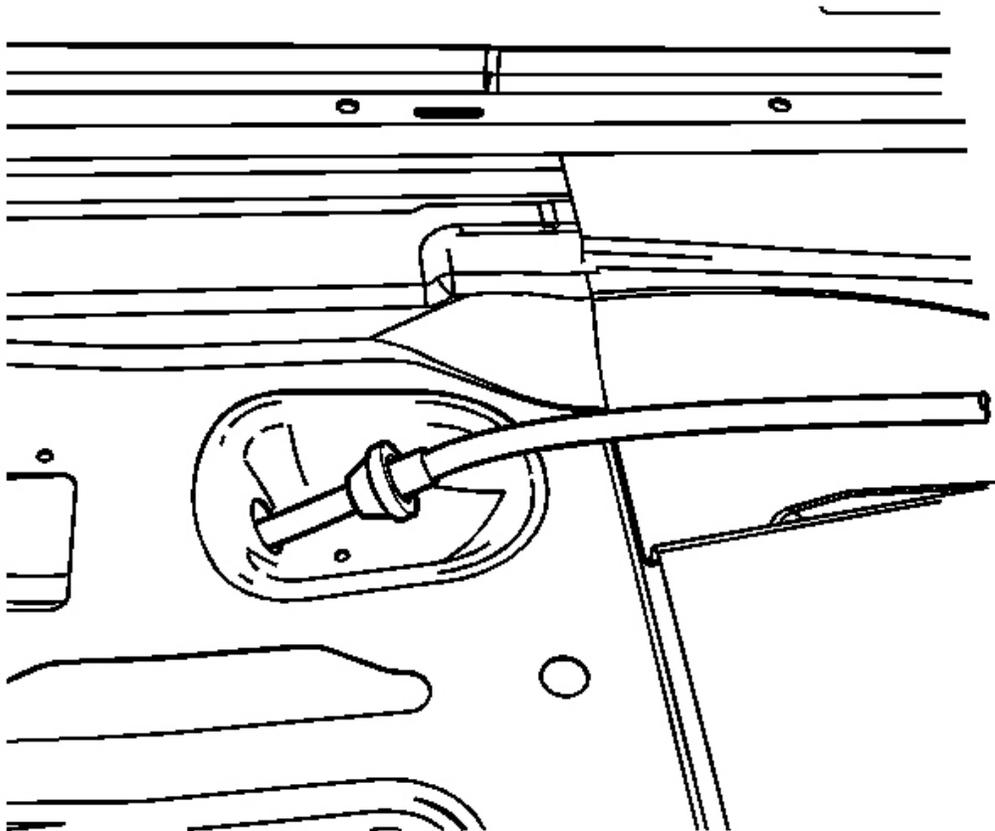


Fig. 22: View Of Park Brake Cable Pass Through Grommet
Courtesy of GENERAL MOTORS CORP.

4. Route the front park brake cable through the vehicle floor and seat the pass through grommet.

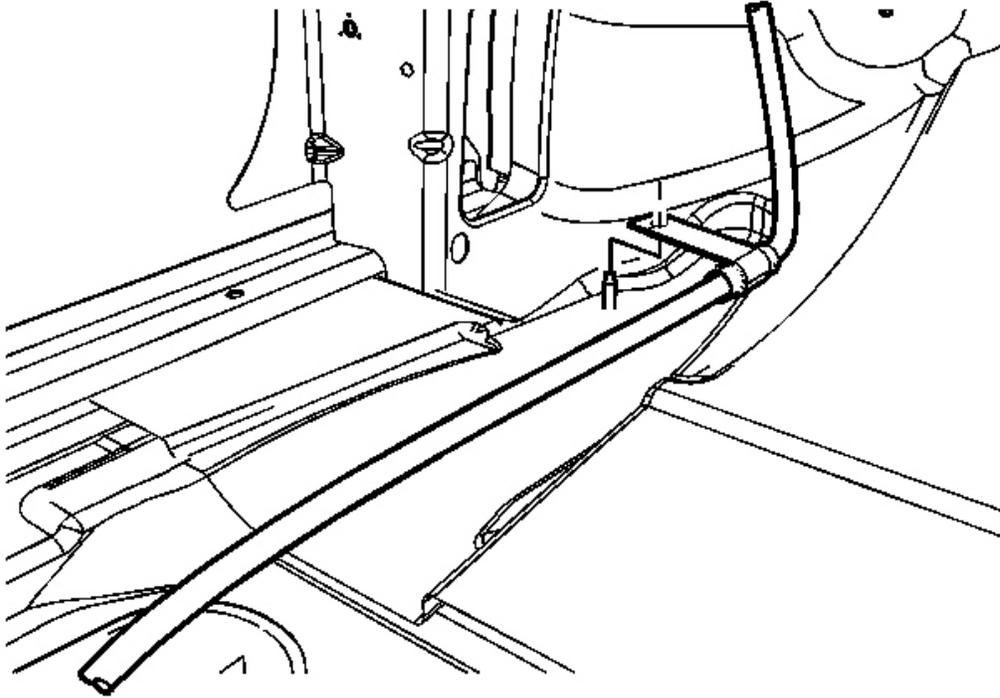


Fig. 23: View Of Park Brake Cable & Routing Clip
Courtesy of GENERAL MOTORS CORP.

5. Position the park brake cable routing clip to the floor stud.
6. Position the driver floor carpet to the vehicle floor.

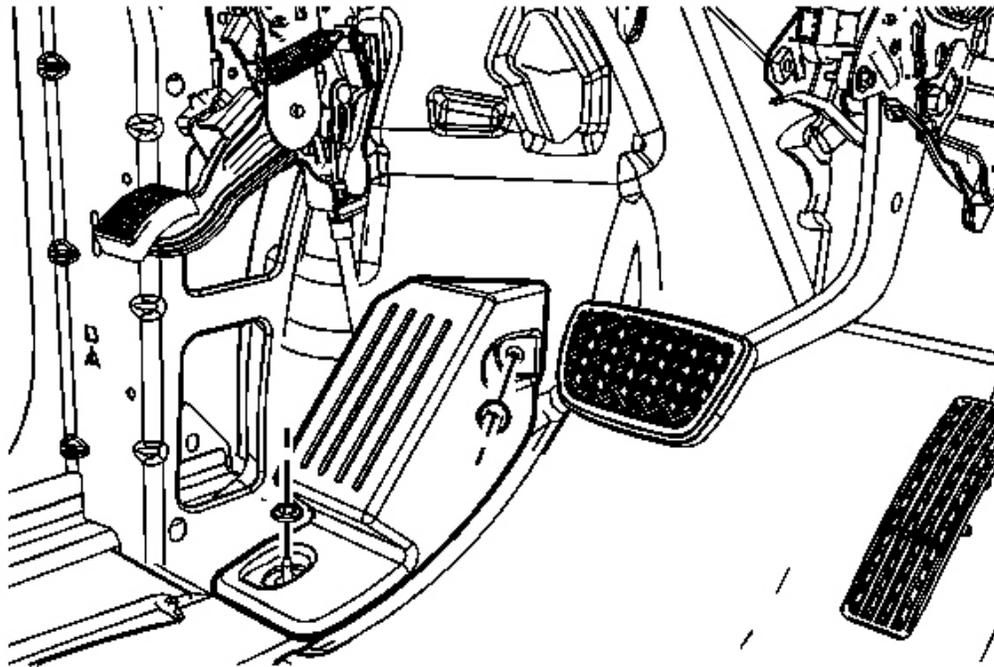


Fig. 24: View Of Driver Footrest & Nuts
Courtesy of GENERAL MOTORS CORP.

7. Install the driver footrest.

NOTE: Refer to Fastener Notice .

8. Install the 2 driver footrest nuts.

Tighten: Tighten the nuts to 10 N.m (89 lb in).

9. Connect the park brake warning indicator switch electrical connector.
10. Install the driver side front carpet retainer. Refer to Front Carpet Retainer Replacement .
11. Install the left side instrument panel insulator panel. Refer to Instrument Panel Insulator Panel Replacement - Left Side .

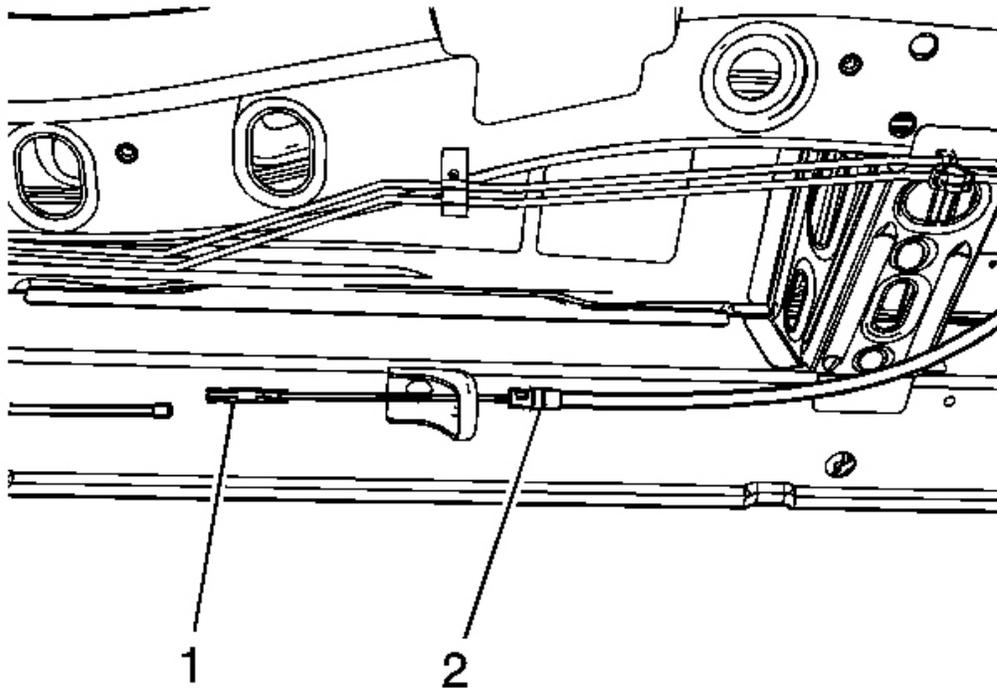


Fig. 25: Identifying Front Park Brake Cable
Courtesy of GENERAL MOTORS CORP.

12. Install the front park brake cable (1) to the park brake cable bracket on the body.

Ensure the locking tabs on the cable conduit (2) are fully engaged to the park brake cable bracket.

13. Connect the front park brake cable to the rear park brake cable.

14. Adjust the park brake. Refer to **Park Brake Adjustment**.

PARKING BRAKE REAR CABLE REPLACEMENT - LEFT SIDE

Removal Procedure

1. Release the park brake.
2. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**.

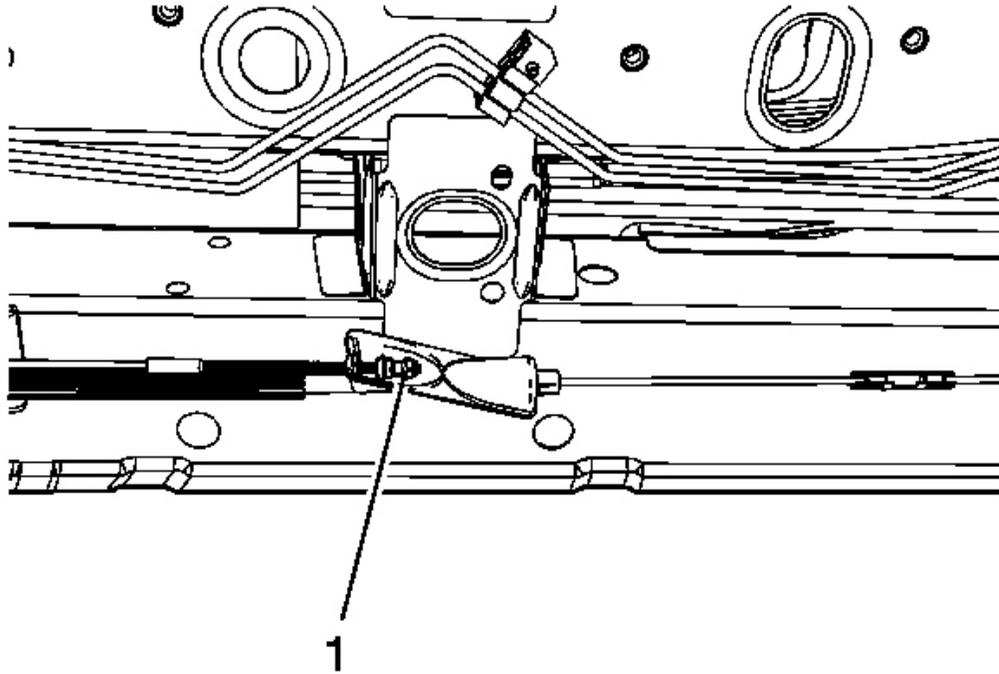


Fig. 26: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

3. Remove the park brake equalizer locknut (1).

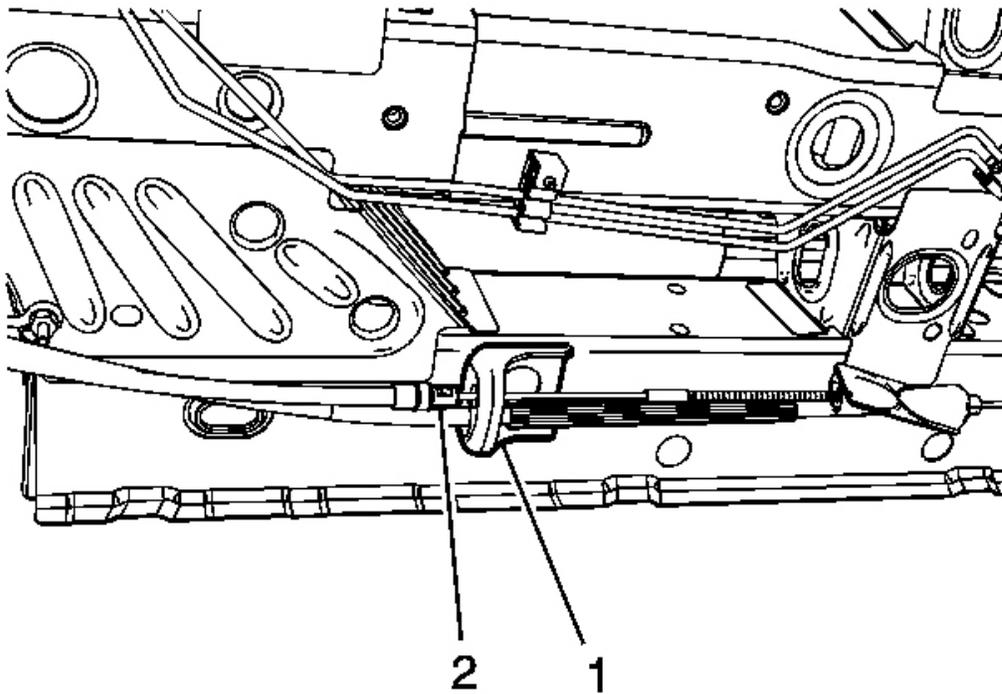


Fig. 27: View Of Park Brake Cable Bracket
Courtesy of GENERAL MOTORS CORP.

4. Release the park brake cable from the park brake cable bracket (1) by compressing the locking tabs on the cable conduit (2).
5. Remove the park brake cable from the bracket and the equalizer.

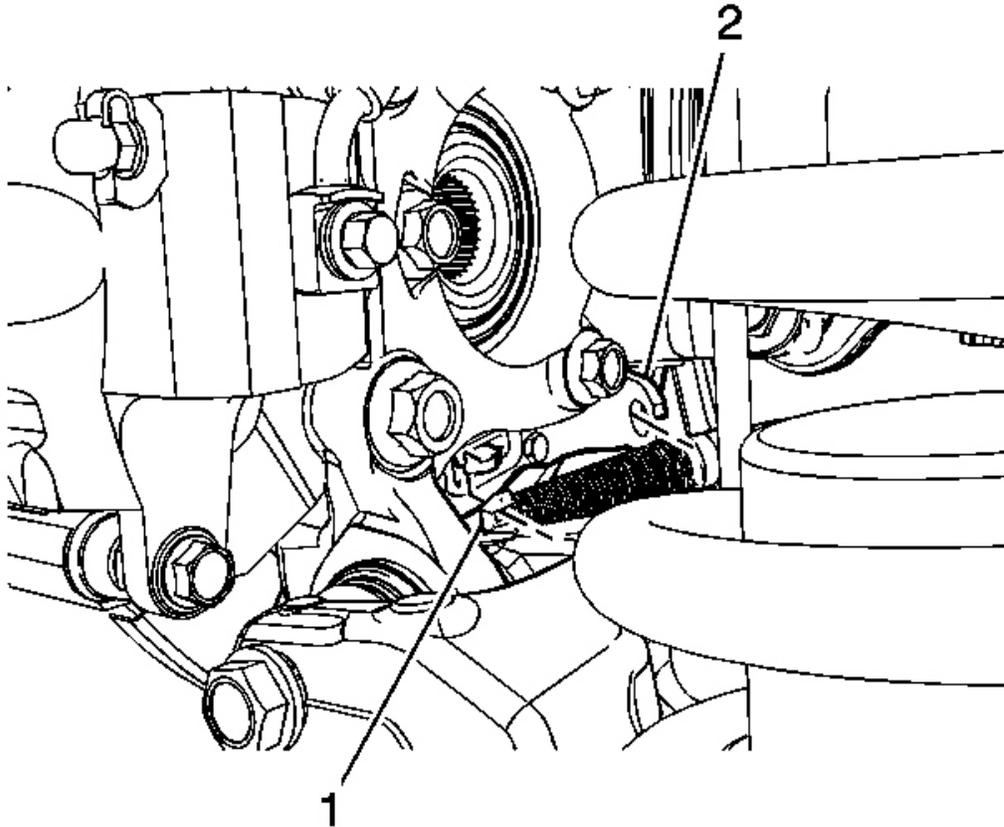


Fig. 28: Identifying Park Brake Cable Eyelet
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the park brake cable eyelet (1) from the park brake actuator.
7. Compress the locking tabs and pull the park brake cable conduit toward the front of the vehicle to compress the park brake cable spring.
8. Remove the park brake cable from the cable bracket (2).
9. Pull the park brake cable through the cable guides and remove the park brake cable from the vehicle.

Installation Procedure

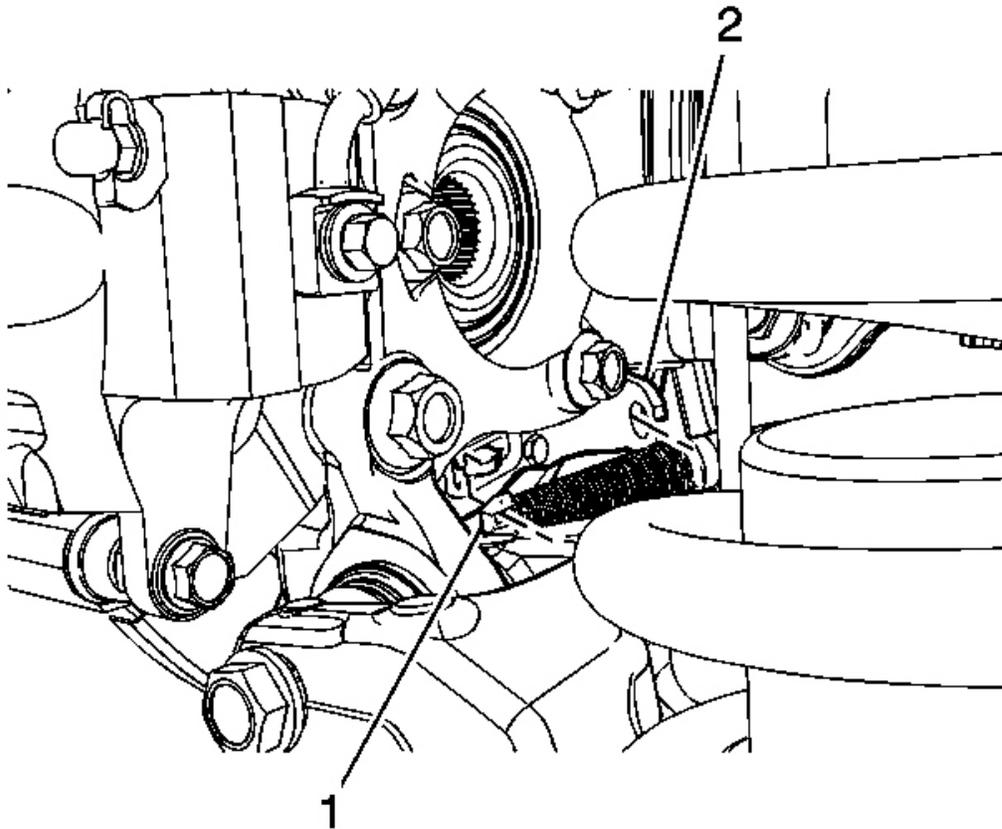


Fig. 29: Identifying Park Brake Cable Eyelet
Courtesy of GENERAL MOTORS CORP.

1. Install the park brake cable to the cable guides.
2. Connect the park brake cable eyelet (1) to the park brake actuator.
3. Compress the park brake cable spring and install the park brake cable to the cable bracket (2).

Ensure the locking tabs on the cable conduit are fully engaged to the cable bracket.

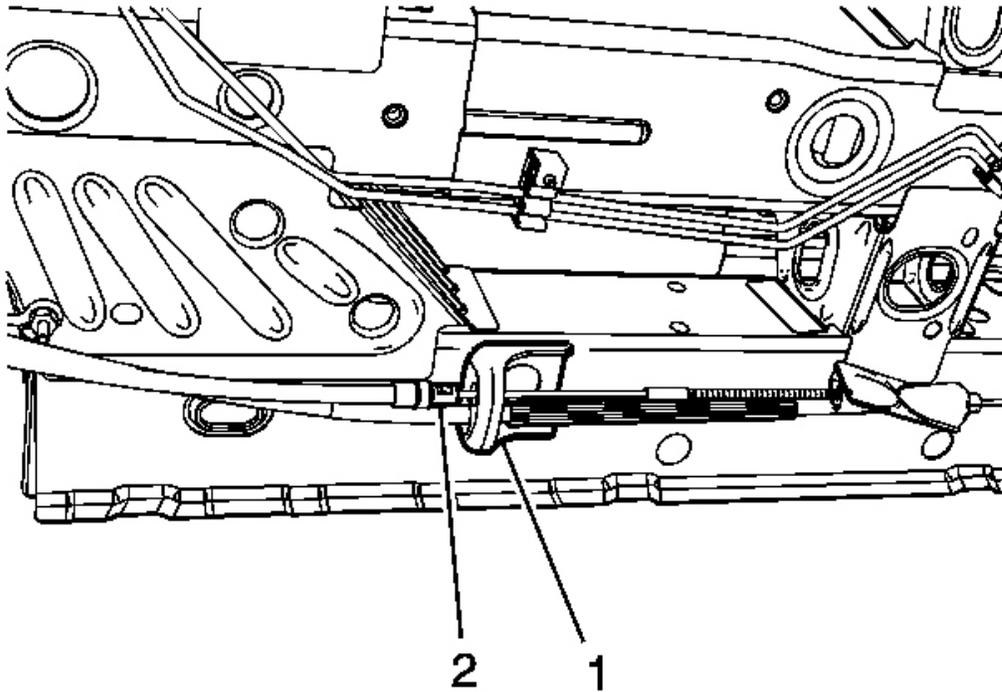


Fig. 30: View Of Park Brake Cable Bracket
Courtesy of GENERAL MOTORS CORP.

4. Install the park brake cable to the park brake cable bracket (1).

Ensure the locking tabs on the cable conduit (2) are fully engaged to the park brake cable bracket.

5. Install the park brake cable to the equalizer.

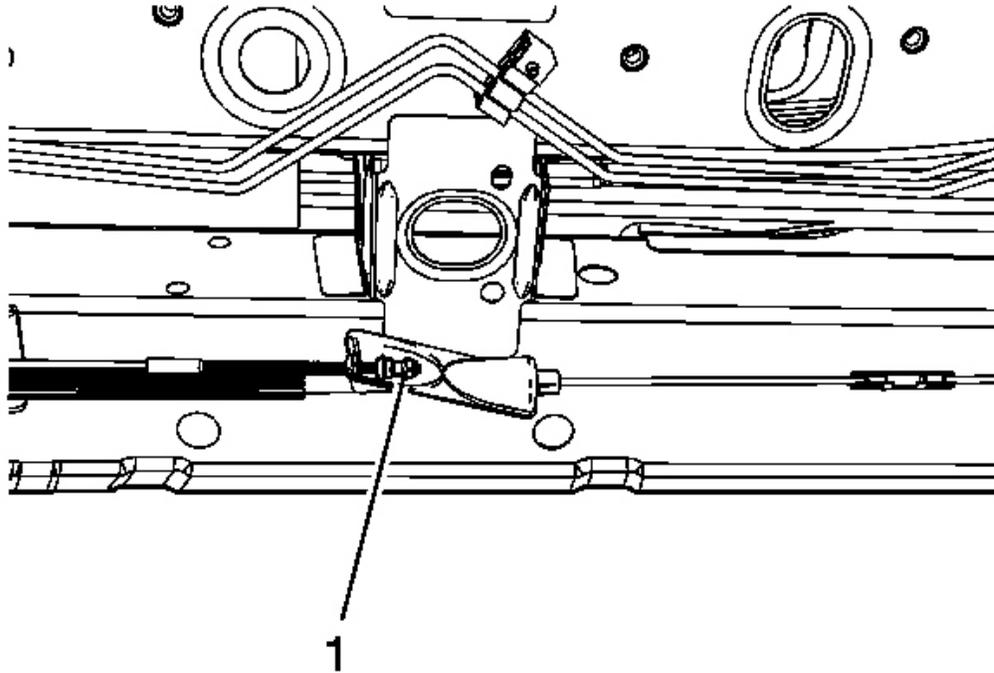


Fig. 31: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

6. Loosely install the park brake equalizer locknut (1).
7. Adjust the park brake. Refer to **Park Brake Adjustment**.

PARKING BRAKE REAR CABLE REPLACEMENT - RIGHT SIDE

Removal Procedure

1. Release the park brake.
2. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .

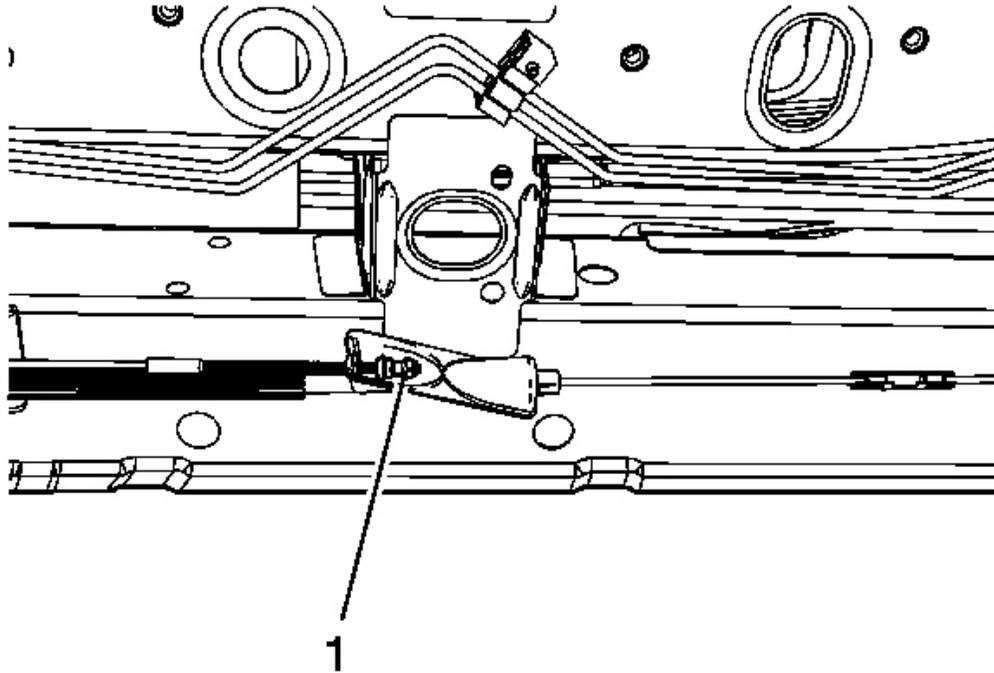


Fig. 32: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

3. Loosen, but do not remove the park brake equalizer locknut (1).

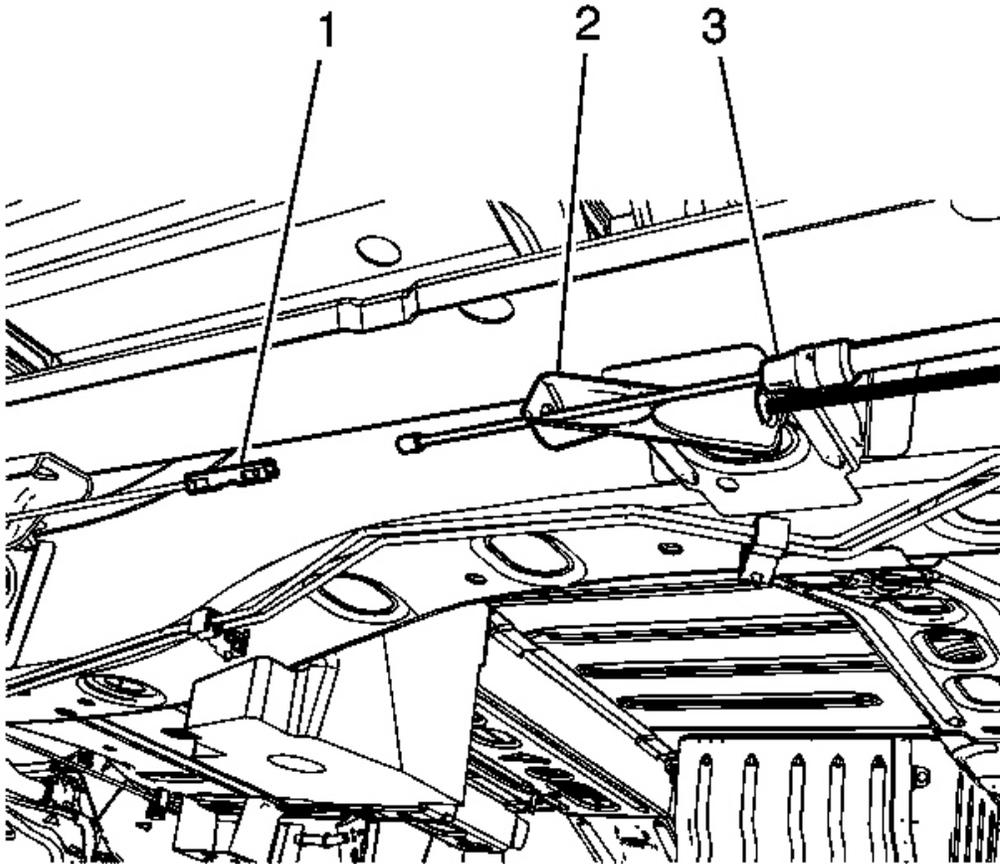


Fig. 33: View Of Park Brake Cable & Park Brake Equalizer
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the front park brake cable (1) from the right park brake cable.
5. Release the park brake cable from the park brake equalizer (2) by compressing the locking tabs on the cable conduit (3).

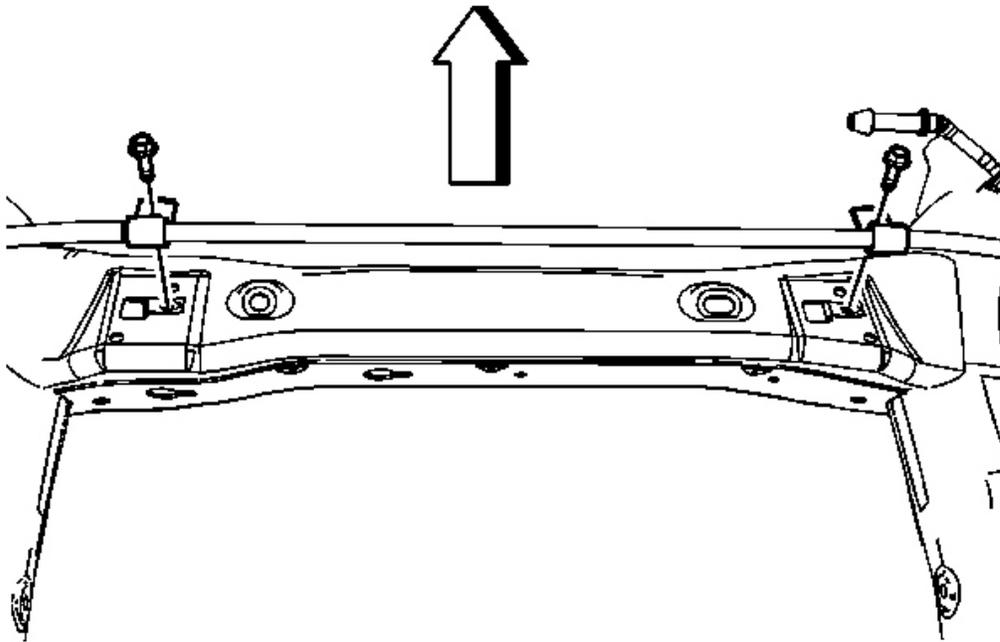


Fig. 34: View Of Park Brake Cable Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

6. Remove the 2 park brake cable bracket bolts located on top of the crossmember above the rear suspension module.

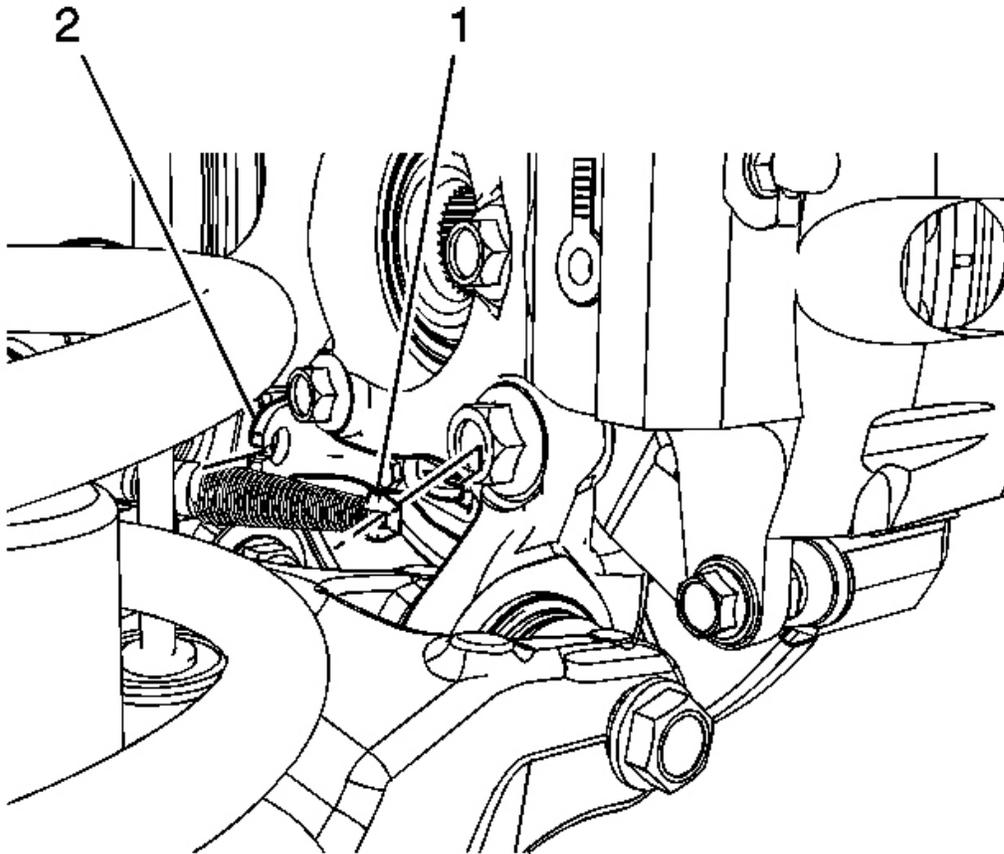


Fig. 35: Identifying Park Brake Cable Eyelet & Cable Bracket
Courtesy of GENERAL MOTORS CORP.

7. Disconnect the park brake cable eyelet (1) from the park brake actuator.
8. Compress the locking tabs and pull the park brake cable conduit toward the front of the vehicle to compress the park brake cable spring.
9. Remove the park brake cable from the cable bracket (2).
10. Pull the park brake cable through the cable guides and remove the park brake cable from the vehicle.

Installation Procedure

1. Position the park brake cable over the rear suspension module.

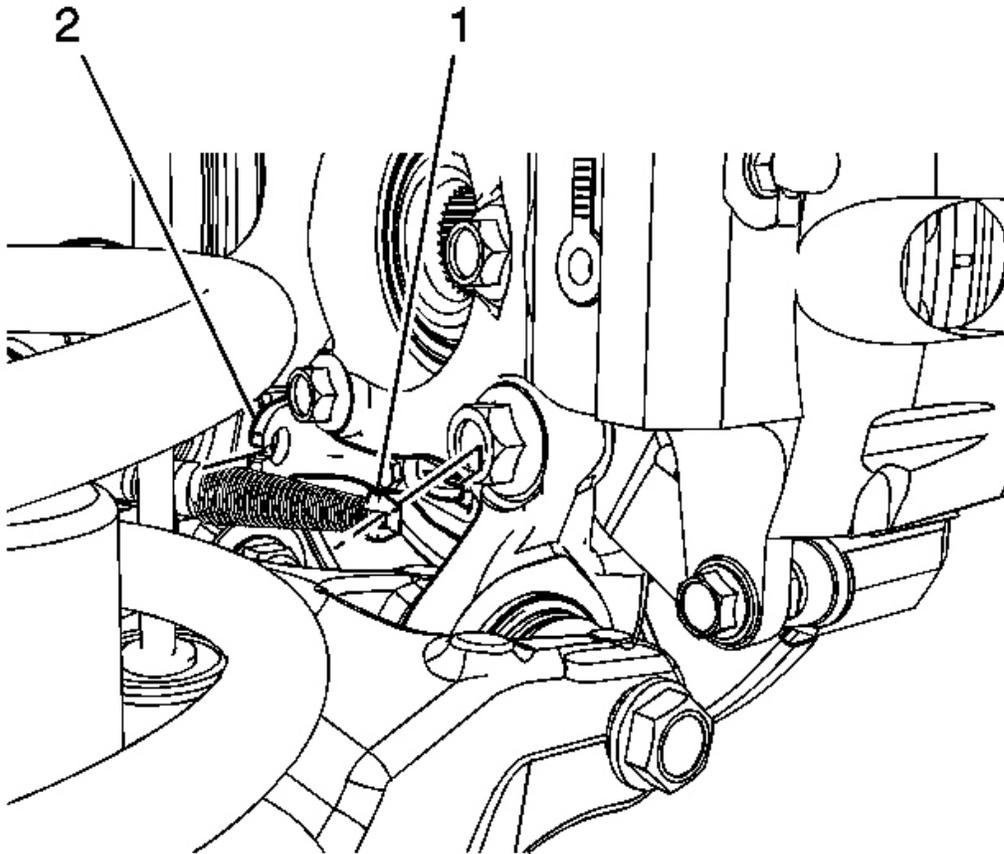


Fig. 36: Identifying Park Brake Cable Eyelet & Cable Bracket
Courtesy of GENERAL MOTORS CORP.

2. Connect the park brake cable eyelet (1) to the park brake actuator.
3. Compress the park brake cable spring and install the park brake cable to the cable bracket (2).

Ensure the locking tabs on the cable conduit are fully engaged to the cable bracket.

NOTE: Refer to Fastener Notice .

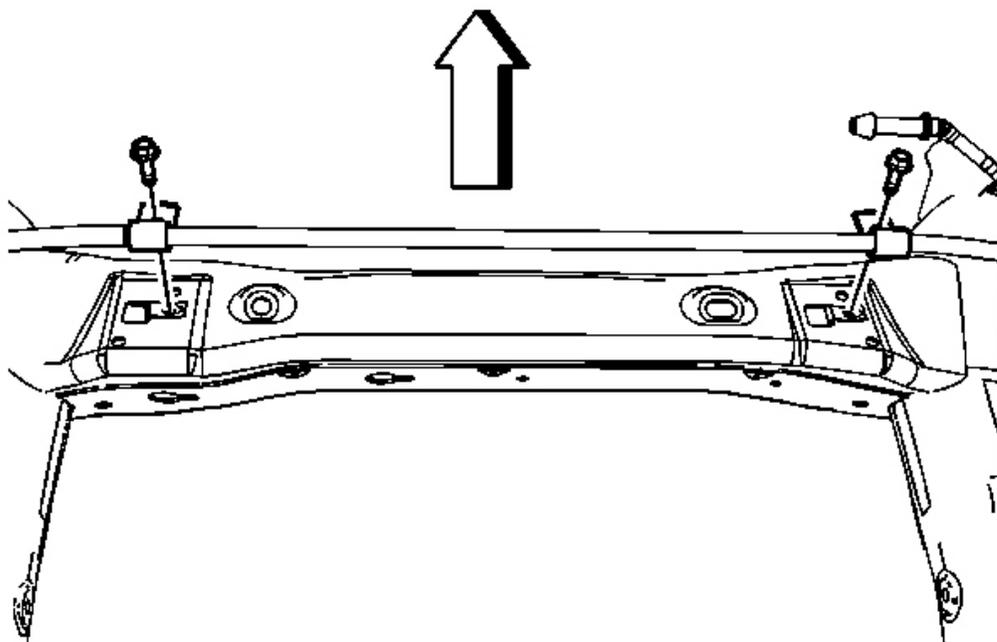


Fig. 37: View Of Park Brake Cable Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

4. Install the 2 park brake cable bracket bolts.

Tighten: Tighten the bolts to 10 N.m (89 lb in).

5. Install the park brake cable to the cable guides.
6. Position the park brake cable to the equalizer.

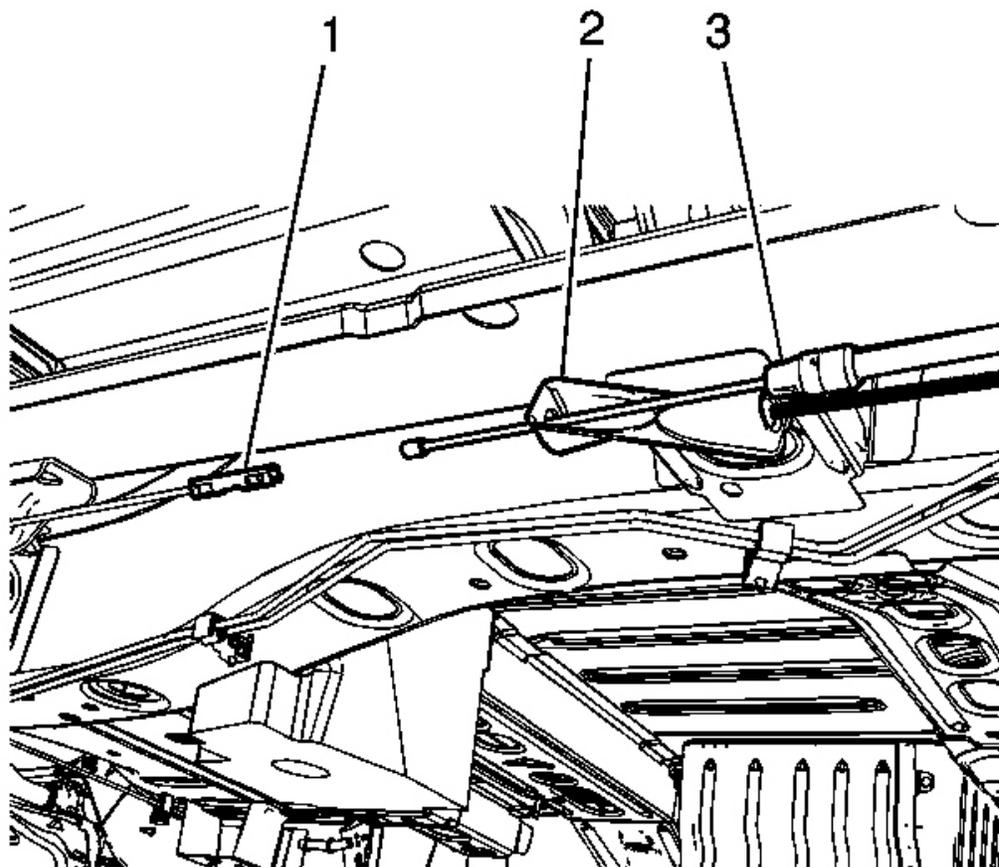


Fig. 38: View Of Park Brake Cable & Park Brake Equalizer
Courtesy of GENERAL MOTORS CORP.

7. Connect the front park brake cable (1) to the right park brake cable.
8. Install the park brake cable to the park brake equalizer (2).

Ensure the locking tabs on the cable conduit (3) are fully engaged to the equalizer.

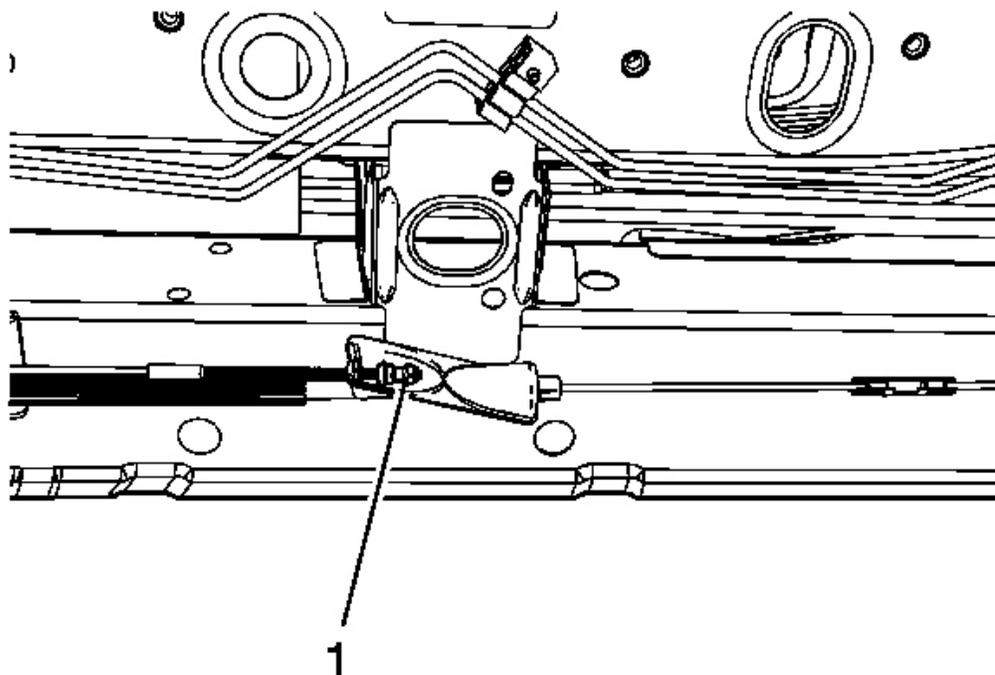


Fig. 39: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

9. Loosely install the park brake equalizer locknut (1).
10. Adjust the park brake. Refer to **Park Brake Adjustment**.

PARK BRAKE CABLE EQUALIZER REPLACEMENT

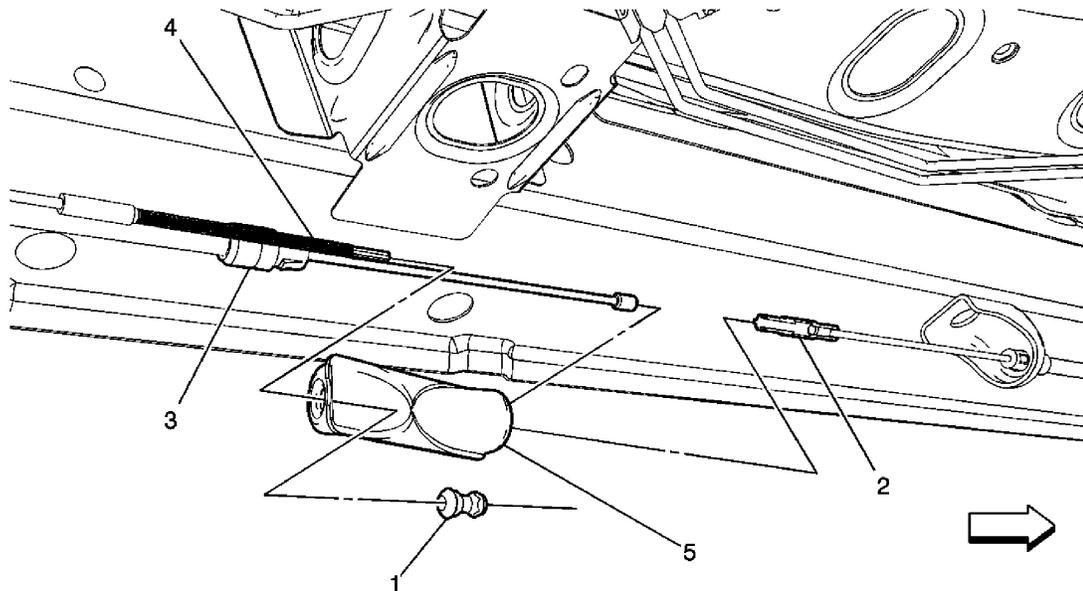


Fig. 40: Identifying Park Brake Cable Equalizer
 Courtesy of GENERAL MOTORS CORP.

Park Brake Cable Equalizer Replacement

Callout	Component Name
Preliminary Procedure: Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Locknut
2	Front Park Brake Cable Connector
3	Right Park Brake Cable Procedure: Compress the locking tabs on the park brake cable conduit and remove the cable from the equalizer.
4	Left Park Brake Cable
5	Equalizer Procedure: Adjust the park brake. Refer to Park Brake Adjustment .

PARKING BRAKE ACTUATOR REPLACEMENT

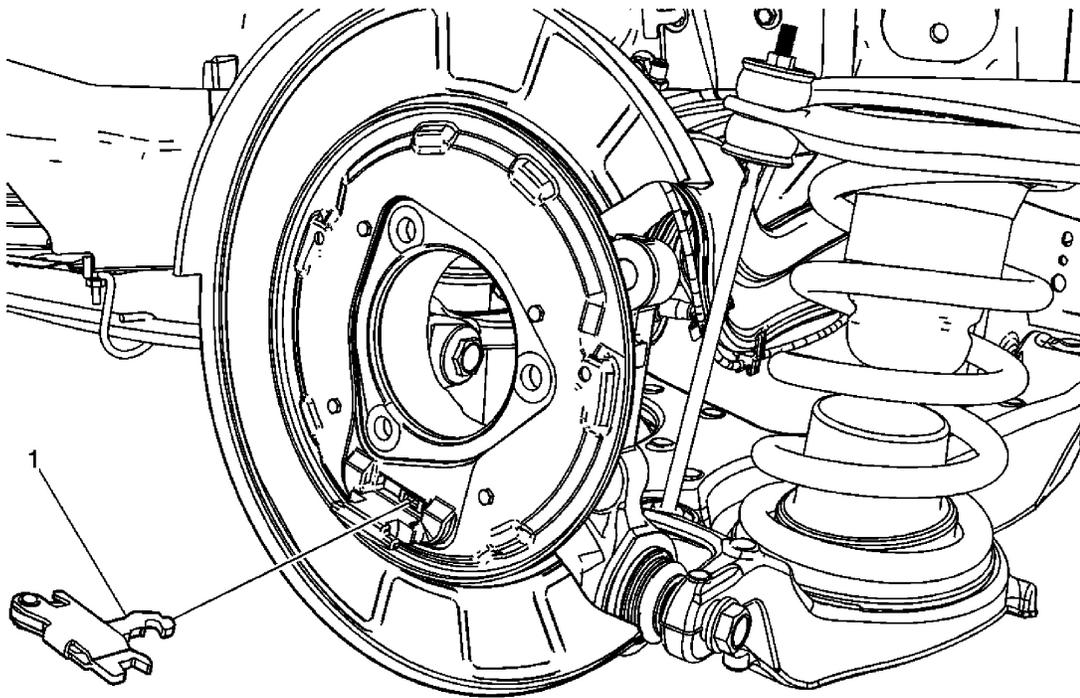


Fig. 41: Identifying Parking Brake Actuator
 Courtesy of GENERAL MOTORS CORP.

Parking Brake Actuator Replacement

Callout	Component Name
<p>CAUTION: Refer to <u>Brake Dust Caution</u> .</p> <p>Preliminary Procedures</p> <ol style="list-style-type: none"> 1. Release the park brake. 2. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> . 3. Remove the tire and wheel assembly. Refer to <u>Tire and Wheel Removal and Installation</u> . 4. Remove the park brake shoes. Refer to <u>Park Brake Shoe Replacement</u>. 	
<p>1</p>	<p>Park Brake Actuator</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Disconnect the park brake cable from the actuator. 2. After the installation is complete, adjust the park brake. Refer to Park

Brake Adjustment

PARK BRAKE ADJUSTMENT

Tools Required

J 21177-A Drum-to-Brake Shoe Clearance Gage. See **Special Tools**.

CAUTION: Refer to Brake Dust Caution .

Adjustment Procedure

1. Apply and fully release the park brake.
2. Verify that the park brake pedal releases completely.
 - Turn ON the ignition. Verify the BRAKE indicator lamp is off.
 - If the BRAKE indicator lamp is on, ensure the park brake pedal is in release mode and has fully returned to the stop. Remove the slack in the front park brake cable by pulling downward on the cable.
3. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
4. Remove the rear tire and wheel assemblies. Refer to **Tire and Wheel Removal and Installation** .

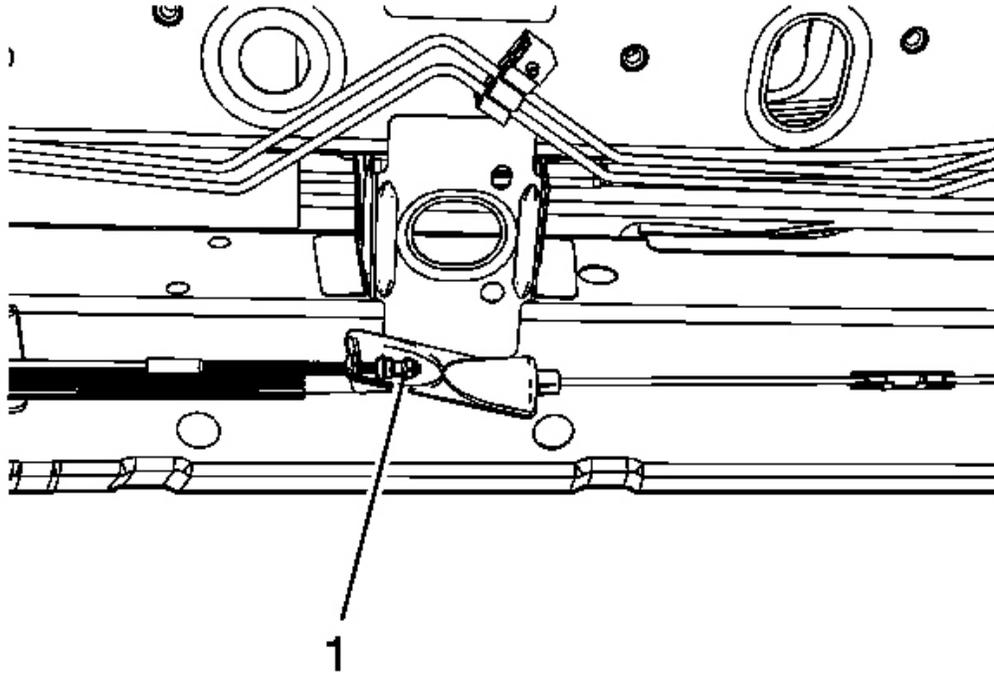


Fig. 42: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

5. Loosen the locknut (1) at the park brake cable equalizer to relieve tension on the park brake system.
6. Remove the rear brake rotors. Refer to **Rear Brake Rotor Replacement** .

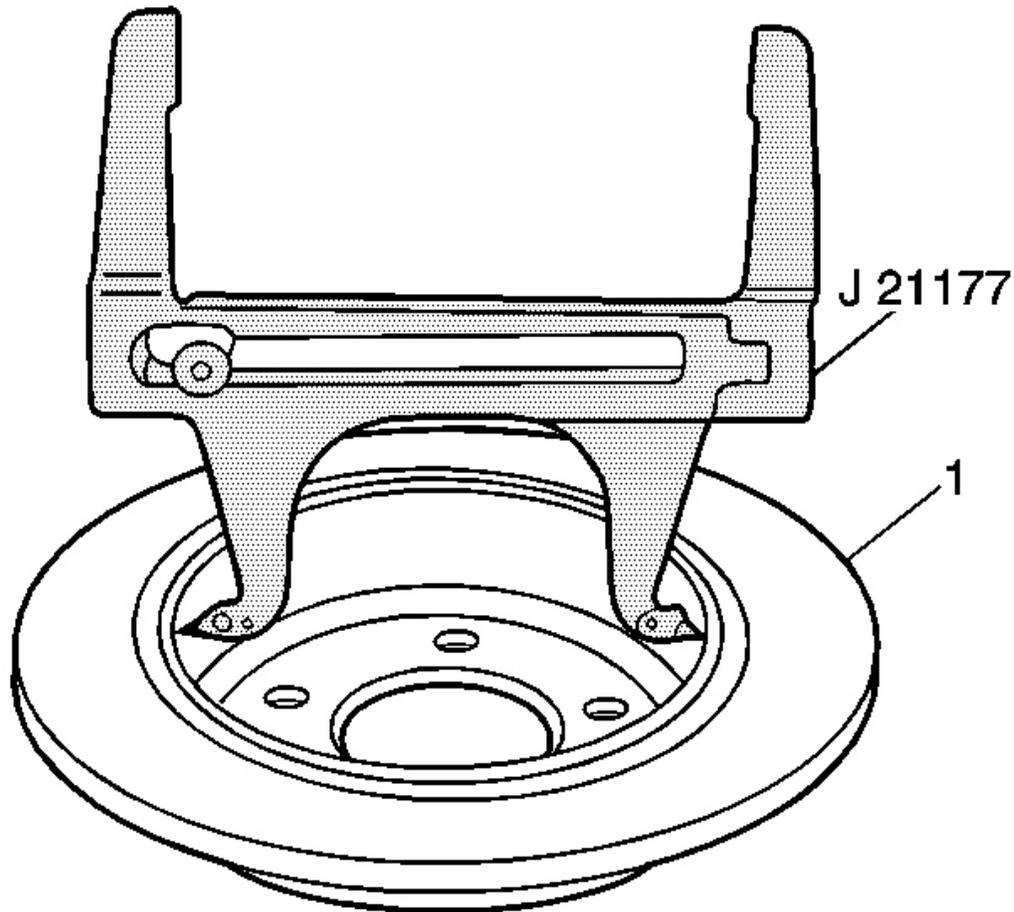


Fig. 43: Measuring Inside Of Rotor
Courtesy of GENERAL MOTORS CORP.

7. Set the **J 21177-A** inside of the park brake drum (1) at the widest point. See **Special Tools**.
 - Place the contacts on the tool to the widest point of the drum.
 - Tighten the set screw on the tool to ensure the proper measurement when removing the tool from the drum.

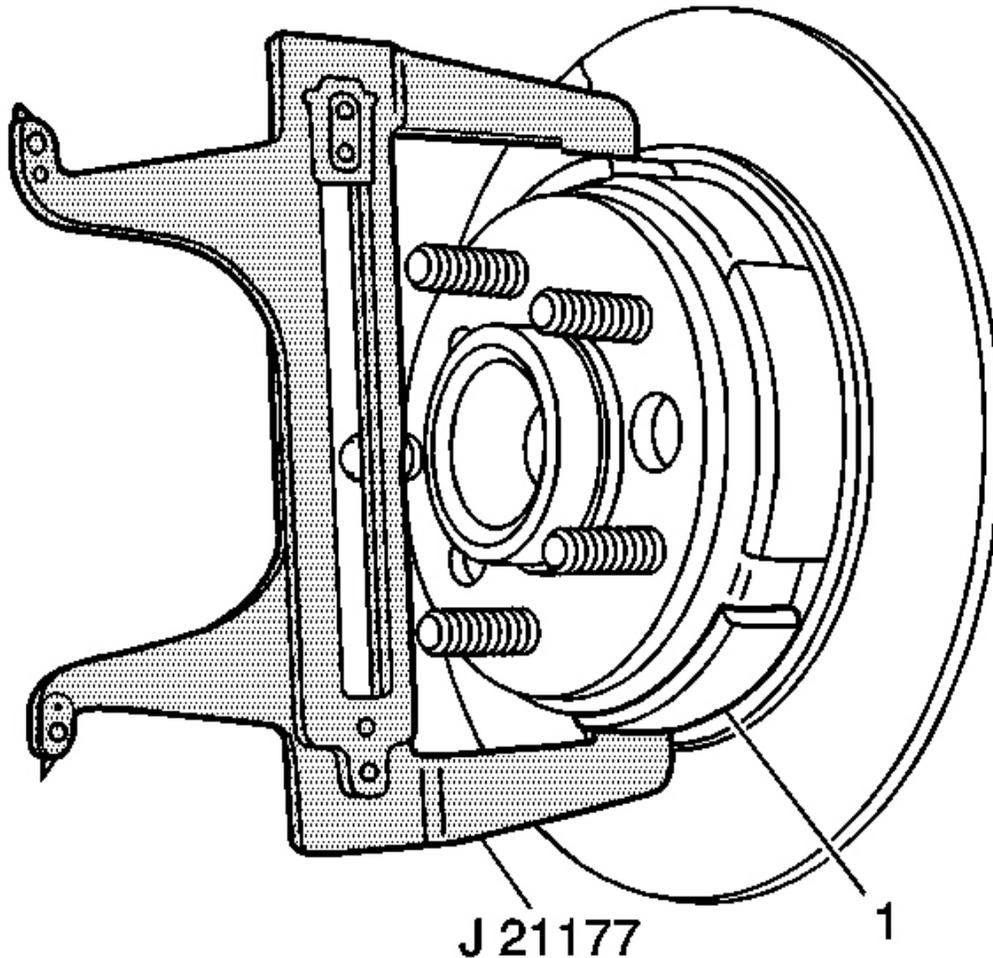


Fig. 44: View Of Parking Brake Shoes & Special Tool
Courtesy of GENERAL MOTORS CORP.

8. Position the **J 21177-A** over the park brake shoe (1) at the widest point. See **Special Tools**.
9. Turn the adjuster screw until the park brake shoe just contacts the **J 21177-A** . See **Special Tools**.
10. Repeat steps 7-9 for the opposite side.
11. Install the rear brake rotors. Refer to **Rear Brake Rotor Replacement** .
12. Install the rear tire and wheel assemblies. Refer to **Tire and Wheel Removal and Installation** .

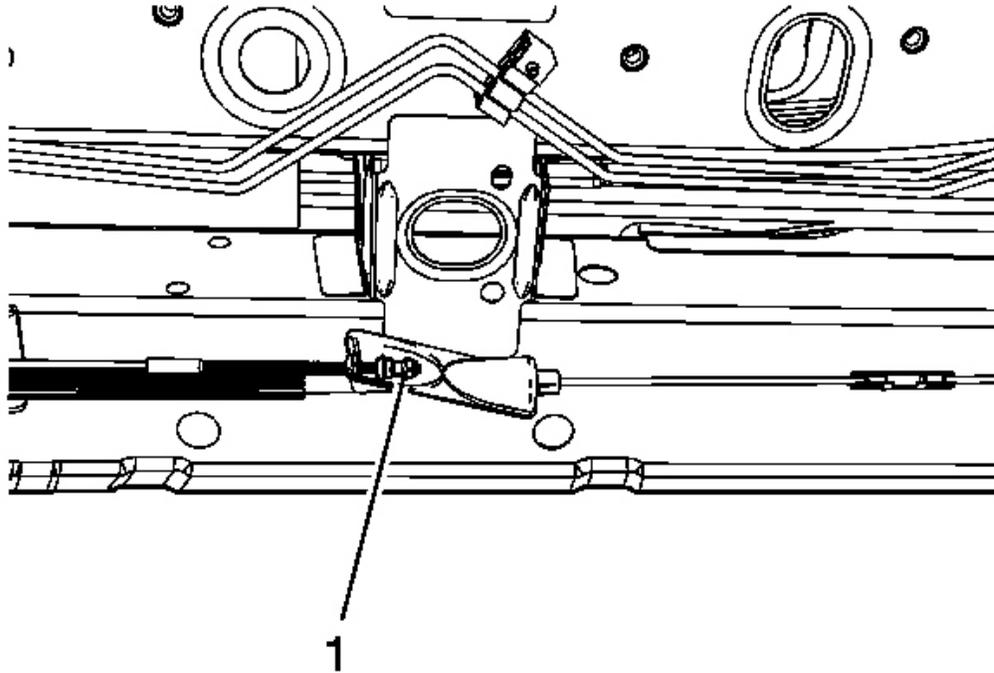


Fig. 45: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

13. Adjust the park brake by turning the locknut (1) at the equalizer while spinning both rear wheels. When either rear wheel starts to drag, back off the locknut one full turn.
14. Lower the vehicle to curb height.
15. Apply the park brake, then inspect for rotation of the rear wheels. If the rear wheels rotate during this inspection, then readjust the park brake shoes.
16. Release the park brake. Verify the rear wheels rotate freely.
17. Lower the vehicle.

DESCRIPTION AND OPERATION

PARK BRAKE SYSTEM DESCRIPTION AND OPERATION

System Component Description

The park brake system consists of the following:

Park Brake Pedal Assembly

Receives and transfers park brake system apply input force from driver to park brake cable system.

Park Brake Release Handle Assembly

Releases applied park brake system when pulled.

Park Brake Cables

Transfers input force received from park brake pedal, through park brake cable equalizer, to park brake apply lever.

Park Brake Cable Equalizer

Evenly distributes input force to both the left and right park brake units.

Park Brake Apply Lever

Multiplies and transfers input force to park brake actuator.

Park Brake Actuator/Adjuster

Uses multiplied input force from apply lever to expand park brake shoe toward the friction surface of the drum-in-hat portion of the rear brake rotor.

Threaded park brake actuators are also used to control clearance between the park brake shoe and the friction surface of the drum-in-hat portion of the rear brake rotor.

Park Brake Shoe

Applies mechanical output force from park brake actuator to friction surface of the drum-in-hat portion of the rear brake rotor.

System Operation

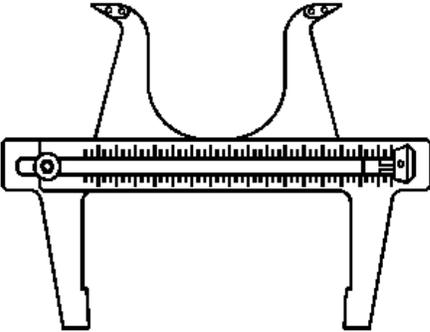
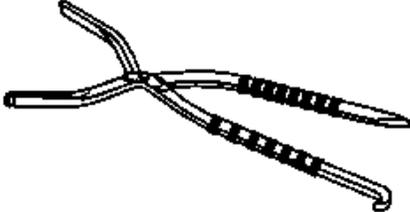
Park brake apply input force is received by the park brake pedal assembly being depressed, transferred and evenly distributed, through the park brake cables and the park brake cable equalizer, to the left and right park brake apply levers. The park brake apply levers multiply and transfer the apply input force to the park brake actuators which expand the park brake shoe toward the friction surface of the drum-in-hat portion of the rear brake rotor in order to prevent the rotation of the rear tire and wheel assemblies. The park brake release handle assembly

releases an applied park brake system when it is pulled rearward.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Special Tools

Illustration	Tool Number/Description
	<p>J 21177-A Drum-to-Brake Shoe Clearance Gage</p>
	<p>J 38400 Brake Shoe Spanner and Spring Remover</p>