

2010 BRAKES

Park Brake - Equinox & Terrain

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Park Brake Cable Bracket Bolt	25 N.m	18 lb ft
Park Brake Rear Cable Bracket Bolt	25 N.m	18 lb ft
Park Brake Lever Assembly Nut	10 N.m	89 lb in
Park Brake Warning Indicator Switch Bolt	4 N.m	35 lb in

DIAGNOSTIC INFORMATION AND PROCEDURES

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 - Vehicle</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 - Vehicle</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

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 3	Go to Step 2
2	Were you sent here from a Park Brake Symptom Table?	Go to Step 3	Go to <u>Diagnostic Starting Point - Vehicle</u>
3	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.		
	Do the rear brakes have a significant amount of drag?	Go to Step 10	Go to Step 4
4	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.		
	Do the rear brakes have a significant amount of drag?	Go to Step 5	Go to Step 6
5	1. Release the park brake. 2. Rotate the rear wheels to check the rear brakes for a significant reduction in the amount of drag.		
	Did the rear brakes exhibit a significant reduction in the amount of drag?	Go to Step 21	Go to Step 10
	Visually check the park brake cable connections and		

6	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 7	Go to Step 8
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)</u> or <u>Parking Brake Rear Cable Replacement (Right)</u> Did you complete the repair and/or replacement?	Go to Step 8	-
8	Check the adjustment of the park brake. Refer to <u>Parking Brake Adjustment</u> . Was the park brake adjusted properly?	Go to Step 10	Go to Step 9
9	Adjust the park brake. Refer to <u>Parking Brake Adjustment</u> . Were you able to attain adjustment of the park brake?	Go to Step 15	Go to Step 10
10	CAUTION: 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. 1. Remove the rear brake rotors. Refer to <u>Rear Brake Rotor Replacement</u>. 2. Inspect the park brake shoe hardware for looseness, damaged, broken or missing components. 3. Check the park brake actuators for a seized condition. Does the park brake hardware and/or the park brake actuators require replacement?	Go to Step 11	Go to Step 12
11	Replace the park brake actuators as necessary. Refer to <u>Parking Brake Actuator Replacement</u> . Did you complete the replacement?	Go to Step 12	-
12	Have an assistant apply and release the park brake, while you observe the park brake cables for free movement. Did the park brake cables move freely?	Go to Step 13	Go to Step 16
13	Check the adjustment of the park brake. Refer to <u>Parking Brake Adjustment</u> .		

	Was the park brake adjusted properly?	Go to Step 15	Go to Step 14
14	Adjust the park brake. Refer to <u>Parking Brake Adjustment</u> . Were you able to attain adjustment of the park brake?	Go to Step 15	Go to Step 25
15	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 reduction of drag. Did the park brake apply and release properly?	Go to Step 27	Go to <u>Symptoms - Park Brake</u>
16	Disconnect the park brake cable connections that are accessible on the UNDERSIDE of the vehicle one at a time 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 17	Go to Step 18
17	Replace any of the park brake cables that do not have free movement (not releasing properly). Refer to the following procedures as necessary: • <u>Parking Brake Front Cable Replacement</u> • <u>Parking Brake Rear Cable Replacement (Left)</u> or <u>Parking Brake Rear Cable Replacement (Right)</u> Did you complete the replacement?	Go to Step 18	-
18	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>. Did you find and correct a condition?	Go to Step 23	Go to Step 19
19	Replace the park brake pedal assembly (not releasing properly). Refer to <u>Parking Brake Lever Replacement</u> . Did you complete the replacement?	Go to Step 24	-
20	Check the adjustment of the park brake. Refer to <u>Parking Brake Adjustment</u> . Is the park brake adjusted properly?	Go to Step 27	Go to Step 21

21	Adjust the park brake. Refer to <u>Parking Brake Adjustment</u> . Were you able to attain adjustment of the park brake system?	Go to Step 26	Go to Step 22
22	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 23	Go to Step 25
23	Adjust the park brake. Refer to <u>Parking Brake Adjustment</u> . Were you able to attain adjustment of the park brake system?	Go to Step 26	Go to Step 25
24	Adjust the park brake. Refer to <u>Parking Brake Adjustment</u> . Were you able to attain adjustment of the park brake system?	Go to Step 26	Go to <u>Symptoms - Park Brake</u>
25	1. Replace the component that is used to adjust the park brake system. Refer to <u>Parking Brake Lever Replacement</u>. 2. Adjust the park brake. Refer to <u>Parking Brake Adjustment</u>. Did you complete the replacement and adjustment?	Go to Step 26	Go to <u>Symptoms - Park Brake</u>
26	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 reduction of drag. Did the park brake apply and release properly?	Go to Step 27	Go to <u>Symptoms - Park Brake</u>
27	Install or connect any components that were removed or disconnected during diagnosis. Did you complete the operation?	Park Brake System OK	-

PARK BRAKE HARDWARE INSPECTION

WARNING: Refer to Brake Dust Warning .

1. With the brake rotors removed, visually inspect the upper return/adjuster actuator spring and the lower return spring for the following:
 - Excessive corrosion
 - Excessive stretching
 - Broken hook ends
 - Twisting or binding
2. If any of the conditions listed were found, which could lead to improper park brake apply and/or release, the adjuster hardware and/or return springs require replacement.
3. Visually inspect the adjuster and the adjuster actuator lever for the following:
 - Misalignment with the park brake lever
 - Misalignment with the park brake shoes
 - Broken or bent adjuster actuator lever
 - Bent adjuster actuator lever pivot pin
4. If any of the conditions listed were found, which could lead to improper park brake apply and/or release, the adjuster hardware requires repair or replacement.
5. Inspect the park brake lever for the following:
 - Bent
 - Broken pivot pin
 - Seized at the pivot pin
 - Broken at park brake cable attachment
 - Improper contact with the adjuster
6. If any of the conditions listed were found, which could lead to improper park brake apply and/or release, the park brake lever requires repair or replacement.
7. Visually inspect the park brake cable for the following:
 - Improper mounting to the backing plate
 - Improper mounting at the park brake lever
 - Broken or missing cable end lug
8. If any of the conditions listed were found, which could lead to improper park brake apply and/or release, the park brake cable requires repair or replacement.
9. Apply the park brake lever/pedal three clicks.
10. Visually inspect the park brake cable for the following:
 - Unequal travel between the left and the right park brake systems
 - No travel on one or both of the park brake systems
11. If any of the conditions listed were found, which could lead to improper park brake apply and/or release, the park brake cable requires replacement and/or adjustment.
12. Release the park brake lever/pedal.

13. Visually inspect the park brake cable for the following:
 - Unequal release between the left and the right park brake systems
 - No release at one or both of the park brake systems
14. If any of the conditions listed were found, which could lead to improper park brake apply and/or release, the park brake cable requires replacement and/or adjustment.

REPAIR INSTRUCTIONS

PARKING BRAKE SHOE REPLACEMENT

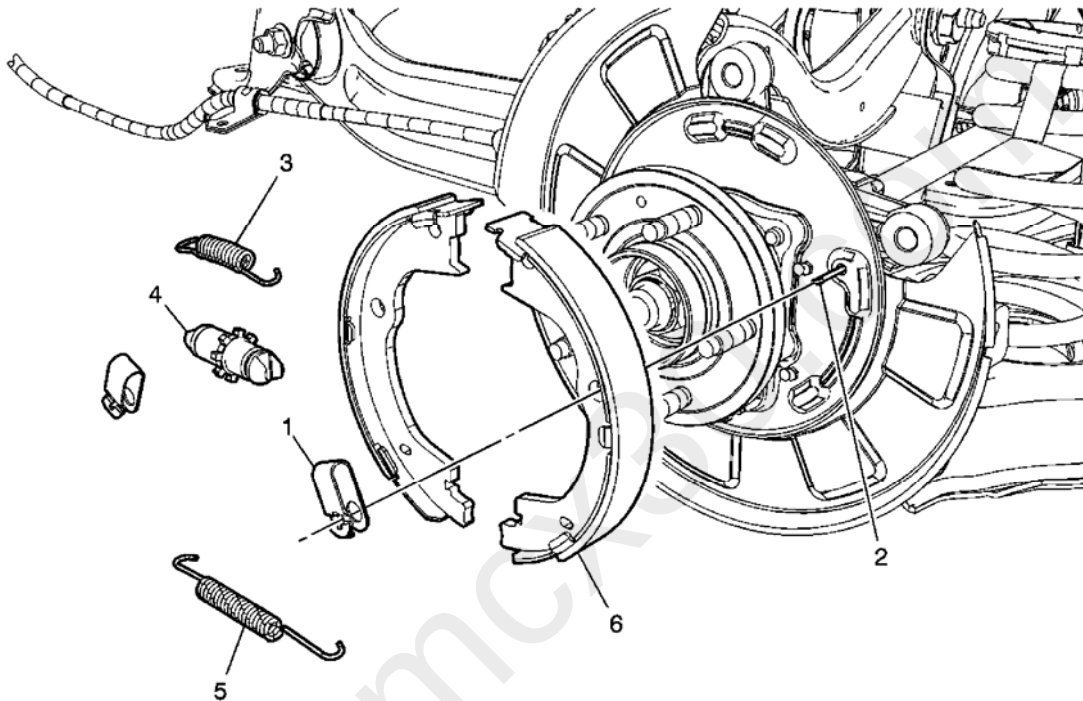


Fig. 1: Identifying Park Brake Components
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
WARNING: Refer to <u>Brake Dust Warning</u> .	
Preliminary Procedures	
1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
2. Remove the rear tire and wheel assembly. Refer to <u>Tire and Wheel Removal and Installation</u> .	
3. Remove the rear brake rotor. Refer to <u>Rear Brake Rotor Replacement</u> .	
	Park Brake Shoe Hold Down Spring (Qty: 2)

1	Procedure: Compress and rotate the spring 1/4 turn to release.
2	Park Brake Shoe Hold Down Spring Pin (Qty: 2)
3	Park Brake Shoe Adjuster Spring Procedure: Using the J-38400: Brake Shoe Spanner and Spring Remover , remove the adjuster spring. Special Tools: J-38400: Brake Shoe Spanner and Spring Remover
4	Park Brake Shoe Adjuster Screw Procedure: Clean the adjuster screw threads and apply high temperature grease to the adjuster screw.
5	Park Brake Shoe Return Spring Procedure: Using the J-38400: Brake Shoe Spanner and Spring Remover , remove the return spring. Special Tools: J-38400: Brake Shoe Spanner and Spring Remover
6	Park Brake Shoe (Qty: 2) Procedure 1. Use denatured alcohol to clean brake dust or grease from the park brake shoes and hardware. 2. If reinstalling the park brake shoes, note the location of the park brake shoes for installation. 3. Apply a small amount of high temperature silicone grease to the brake shoe and backing plate contact points. 4. Apply a small amount of high temperature silicone grease to both sides of the actuator lever pivot pin. 5. Adjust the park brake. Refer to <u>Parking Brake Adjustment</u>.

PARKING BRAKE LEVER REPLACEMENT

Special Tools

J-37043: Parking Brake Cable Release Tool

Removal Procedure

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

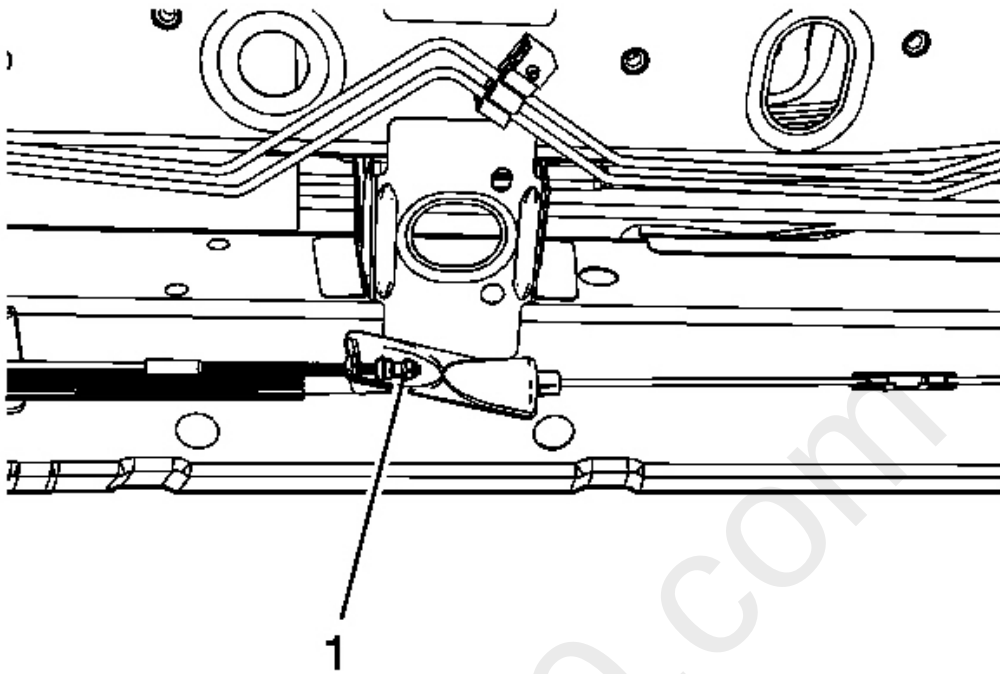


Fig. 2: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

2. Loosen the park brake cable locknut (1) at the equalizer to relieve tension on the park brake cable.
3. Lower the vehicle.
4. Remove the left side body hinge pillar trim panel. Refer to **Body Hinge Pillar Trim Panel Replacement**.
5. Disconnect the park brake warning indicator switch electrical connector.

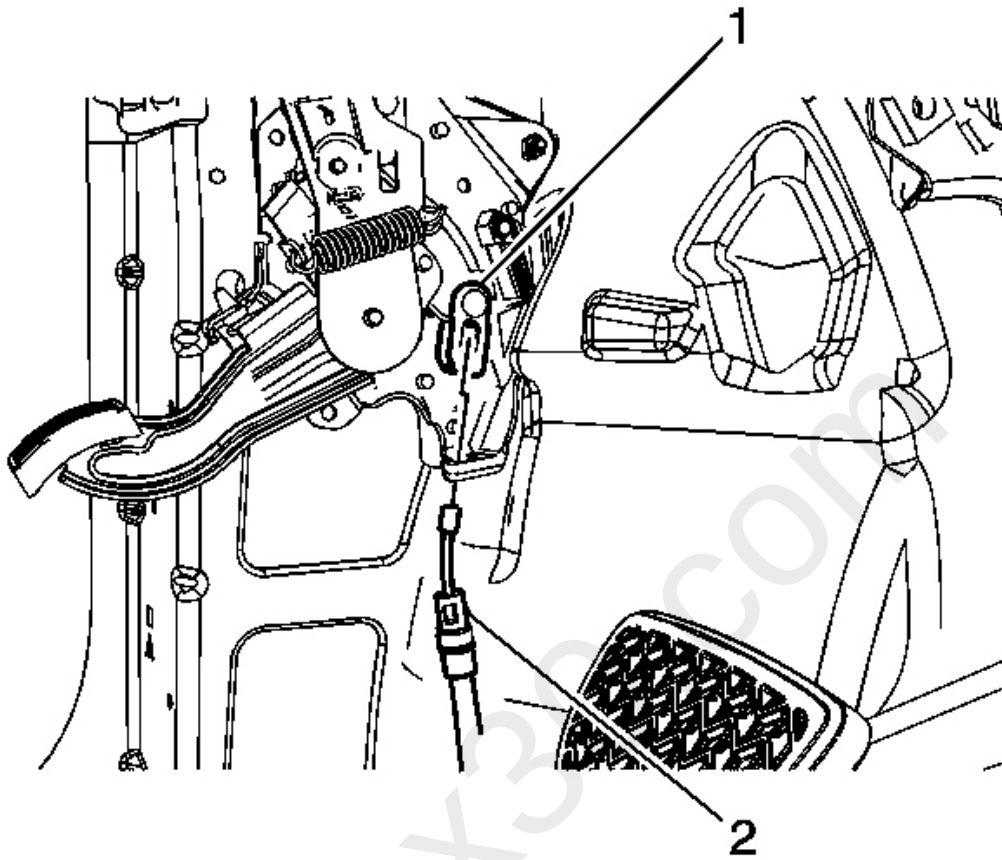


Fig. 3: Identifying Front Park Brake Cable Conduit & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the front park brake cable from the park brake pedal clevis (1).
7. Using the **J-37043: Parking Brake Cable Release Tool**, remove the front park brake cable from the park brake pedal assembly by compressing the locking tabs on the cable conduit (2).

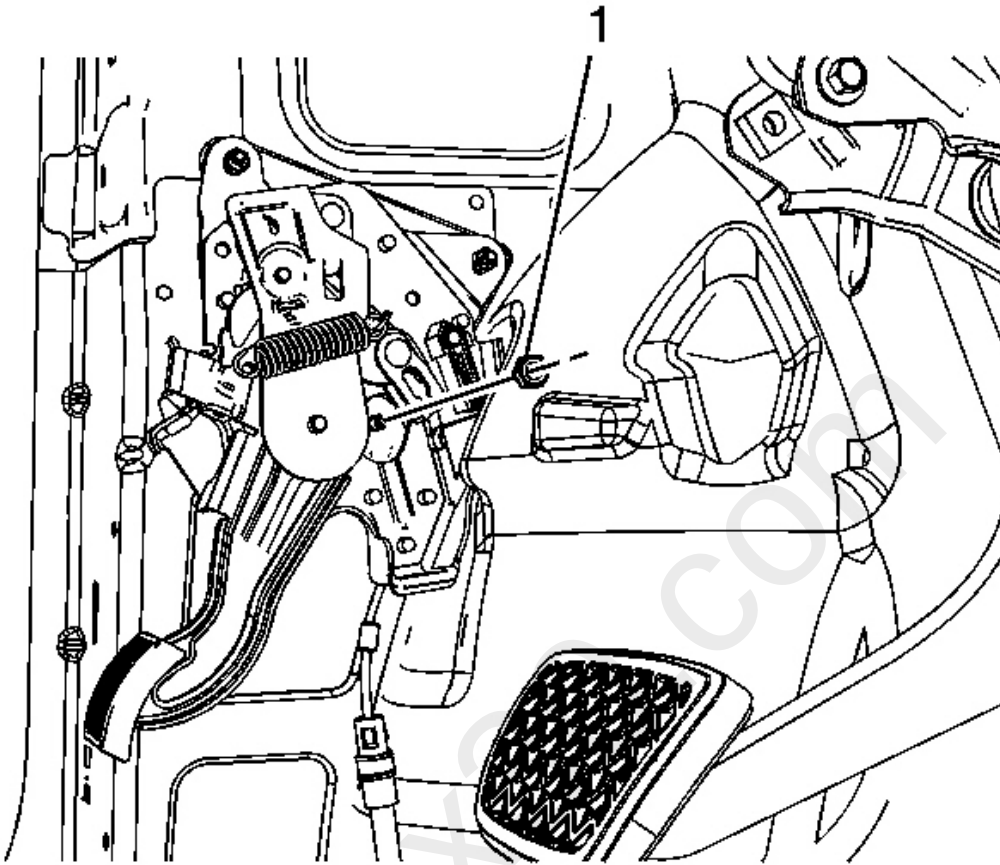


Fig. 4: Identifying Lower Park Brake Pedal Nut
Courtesy of GENERAL MOTORS CORP.

8. Remove the lower park brake pedal nut (1).

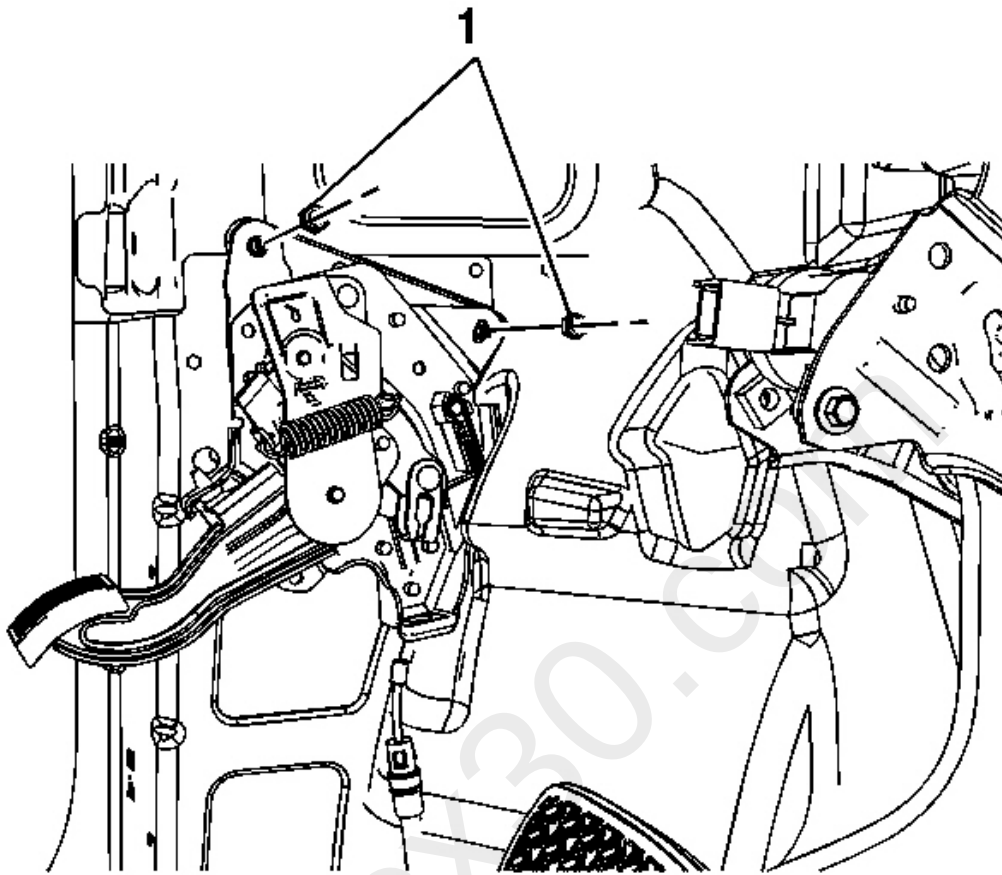


Fig. 5: View Of Upper Park Brake Pedal Nuts
Courtesy of GENERAL MOTORS CORP.

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

Installation Procedure

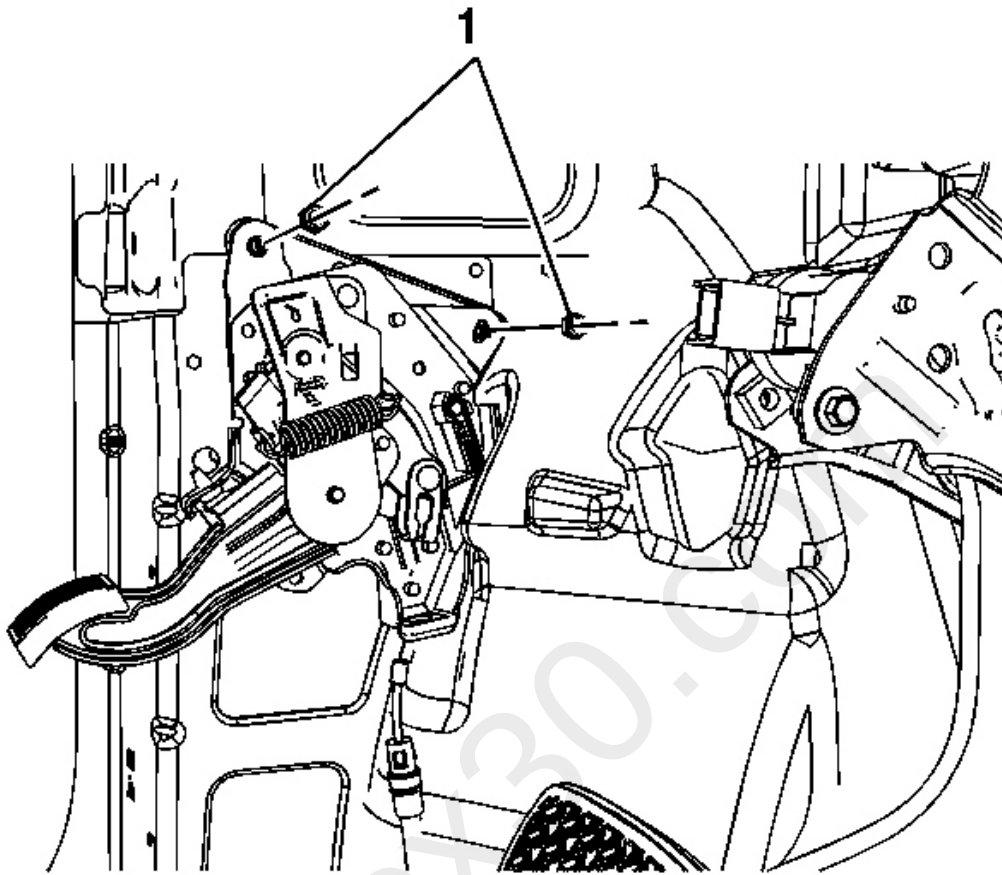


Fig. 6: View Of Upper Park Brake Pedal Nuts
Courtesy of GENERAL MOTORS CORP.

1. Install the park brake pedal assembly.

CAUTION: Refer to Fastener Caution .

2. Install the 2 upper park brake pedal nuts (1) and tighten to 10 N.m (89 lb in).

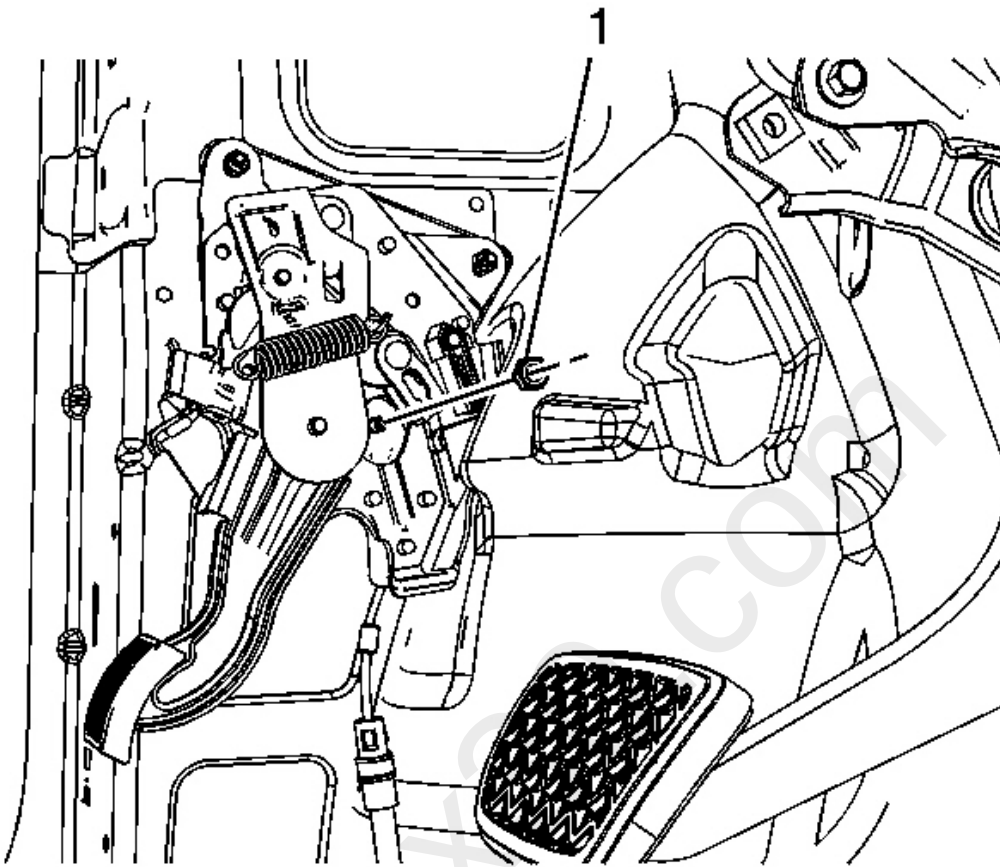


Fig. 7: Identifying Lower Park Brake Pedal Nut
Courtesy of GENERAL MOTORS CORP.

3. Install the lower park brake pedal nut (1) and tighten to 10 N.m (89 lb in).

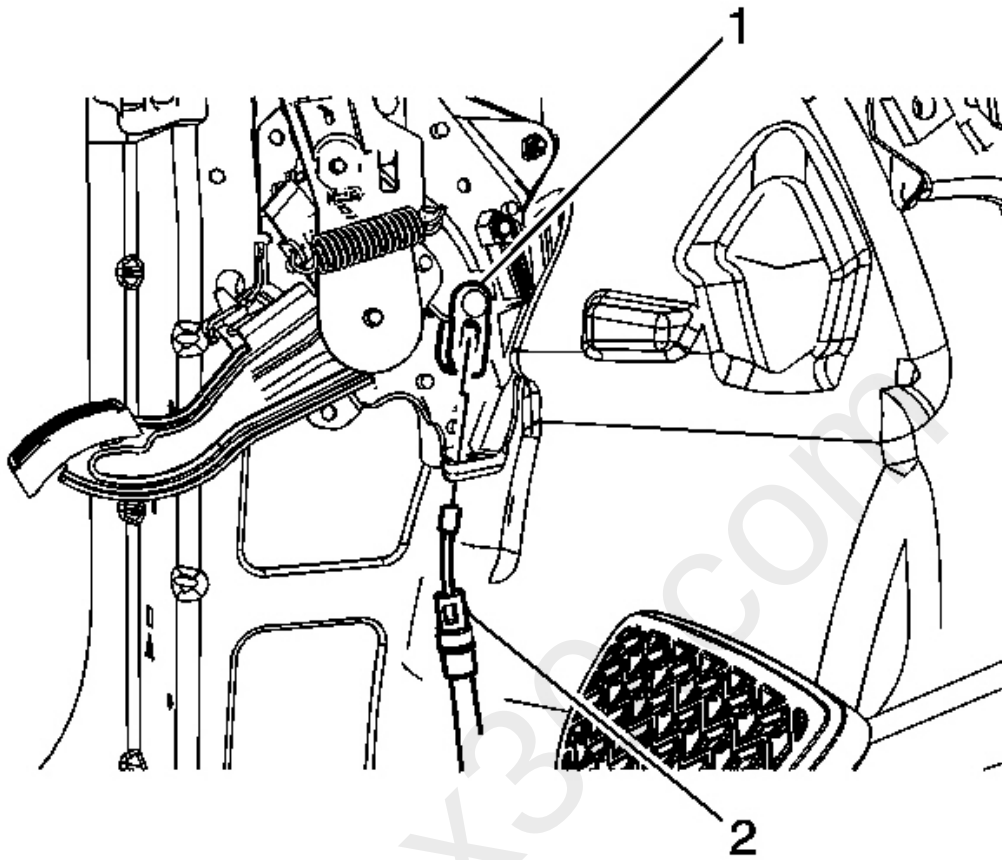


Fig. 8: Identifying Front Park Brake Cable Conduit & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

4. Connect the front park brake cable to the park brake pedal clevis (1).
5. Install the front park brake cable to the park brake pedal assembly.
6. Ensure the locking tabs on the cable conduit (2) are fully engaged to the park brake pedal assembly.
7. Connect the park brake warning indicator switch electrical connector.
8. Install the left side body hinge pillar trim panel. Refer to **Body Hinge Pillar Trim Panel Replacement**.
9. Adjust the park brake. Refer to **Parking Brake Adjustment**.

PARKING BRAKE INDICATOR SWITCH REPLACEMENT

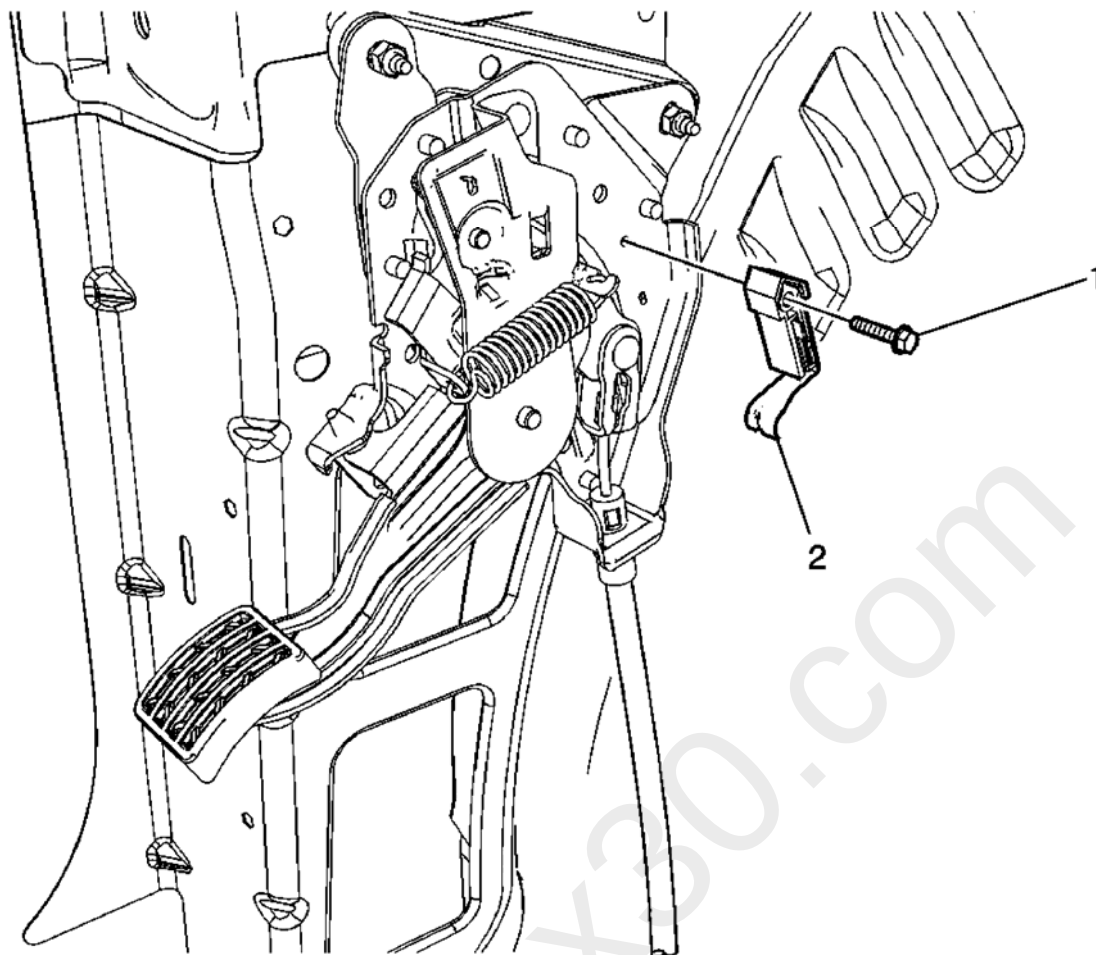


Fig. 9: Identifying Parking Brake Indicator Switch
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures	
1. Remove the left side body hinge pillar trim panel. Refer to <u>Body Hinge Pillar Trim Panel Replacement</u> . 2. Disconnect the park brake warning indicator switch electrical connector.	
1	Park Brake Warning Lamp Switch Bolt CAUTION: Refer to <u>Fastener Caution</u> . Tighten: 4 N.m (35 lb in)
2	Park Brake Warning Lamp Switch

PARKING BRAKE FRONT CABLE REPLACEMENT

Special Tools

J-37043: Parking Brake Cable Release Tool

Removal Procedure

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

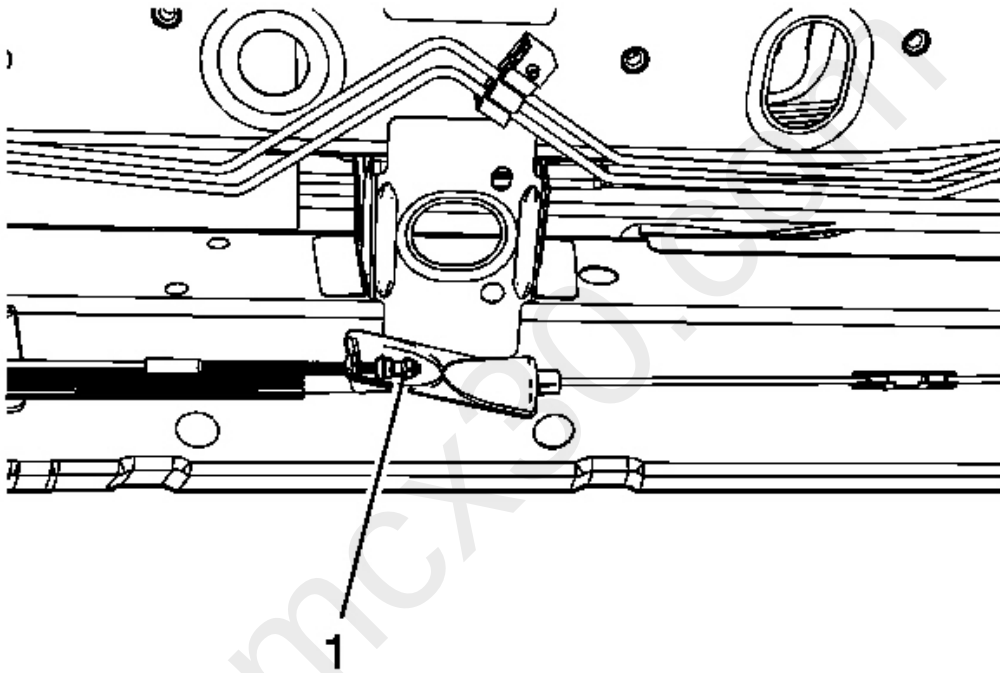


Fig. 10: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

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

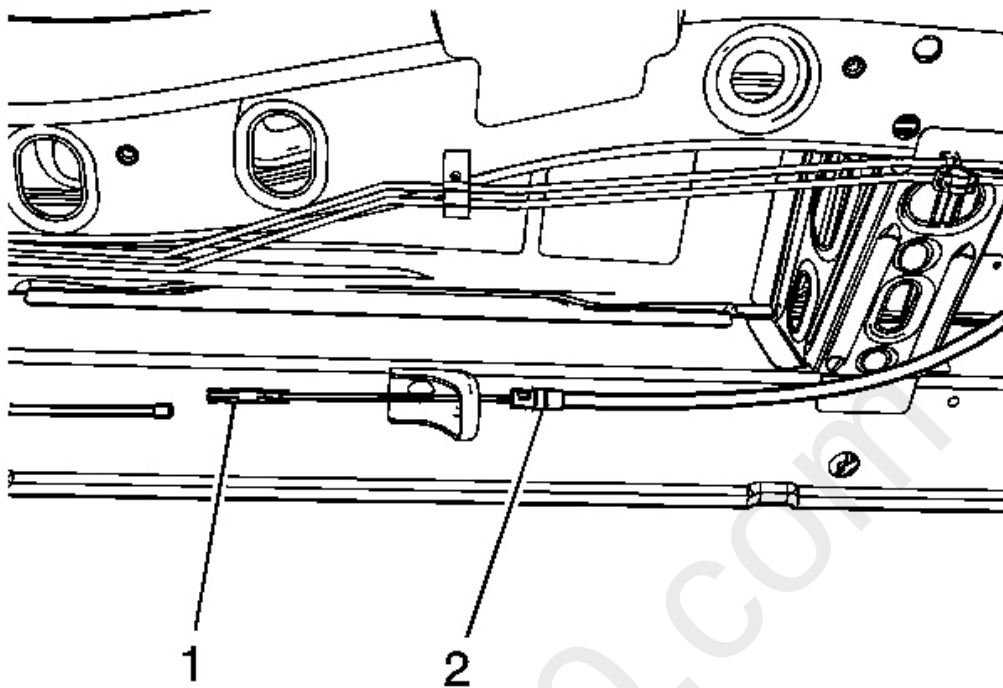


Fig. 11: Identifying Front Park Brake Cable & Conduit
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the front park brake cable (1) from the rear park brake cable.
4. Using the **J-37043: Parking Brake Cable Release Tool**, 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 body hinge pillar trim panel. Refer to **Body Hinge Pillar Trim Panel Replacement** .

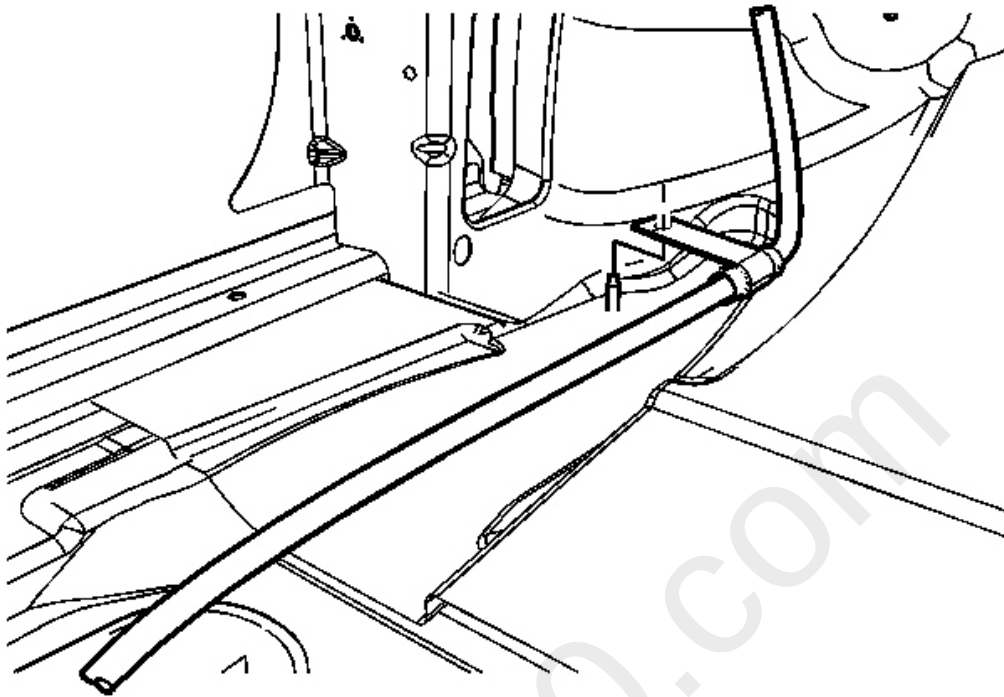


Fig. 12: View Of Park Brake Cable & Routing Clip
Courtesy of GENERAL MOTORS CORP.

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

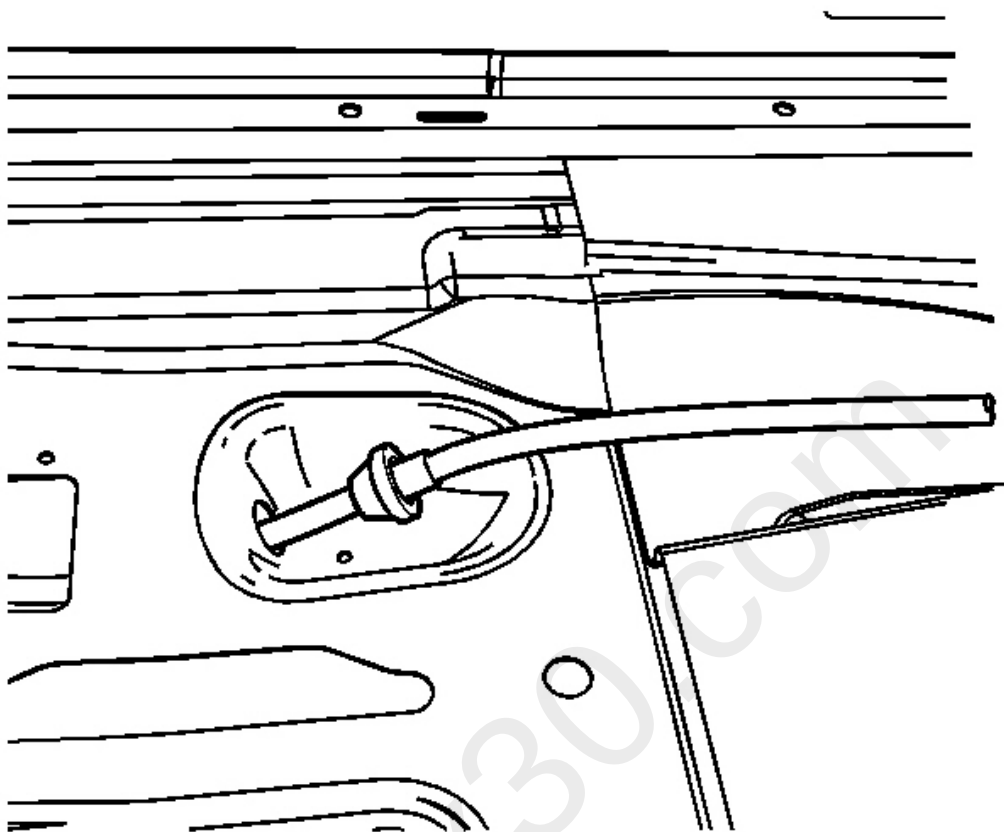


Fig. 13: View Of Park Brake Cable Pass Through Grommet
Courtesy of GENERAL MOTORS CORP.

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

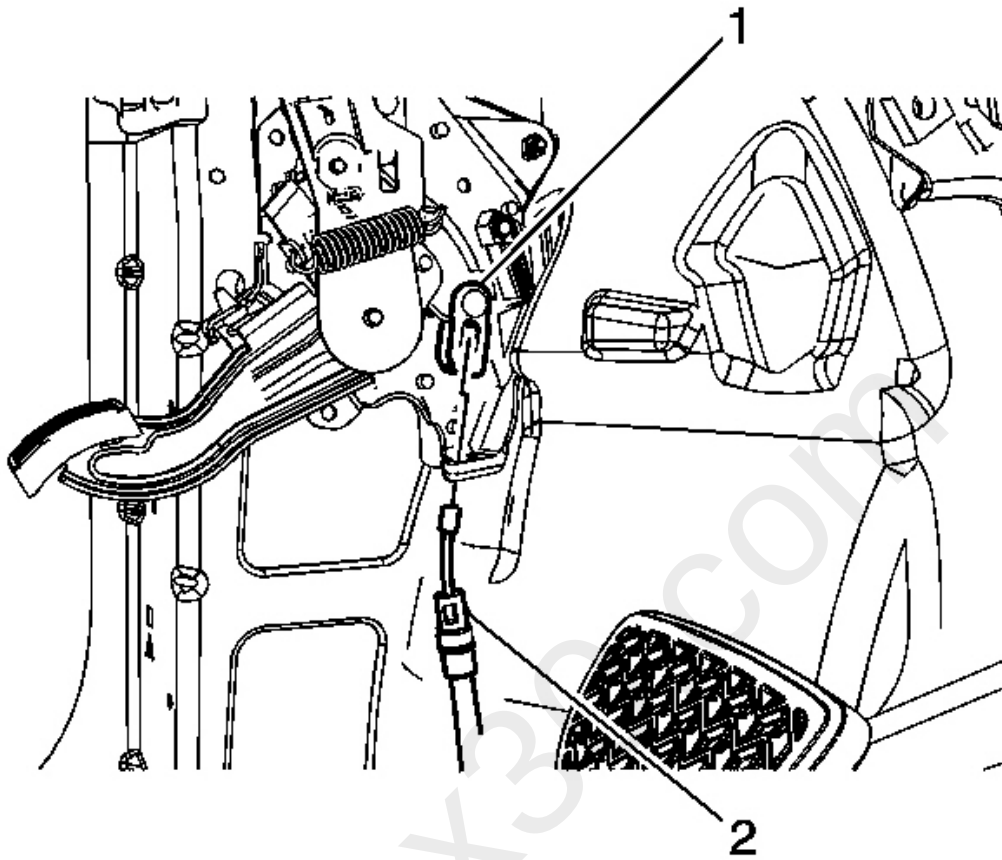


Fig. 14: Identifying Front Park Brake Cable Conduit & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

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

Installation Procedure

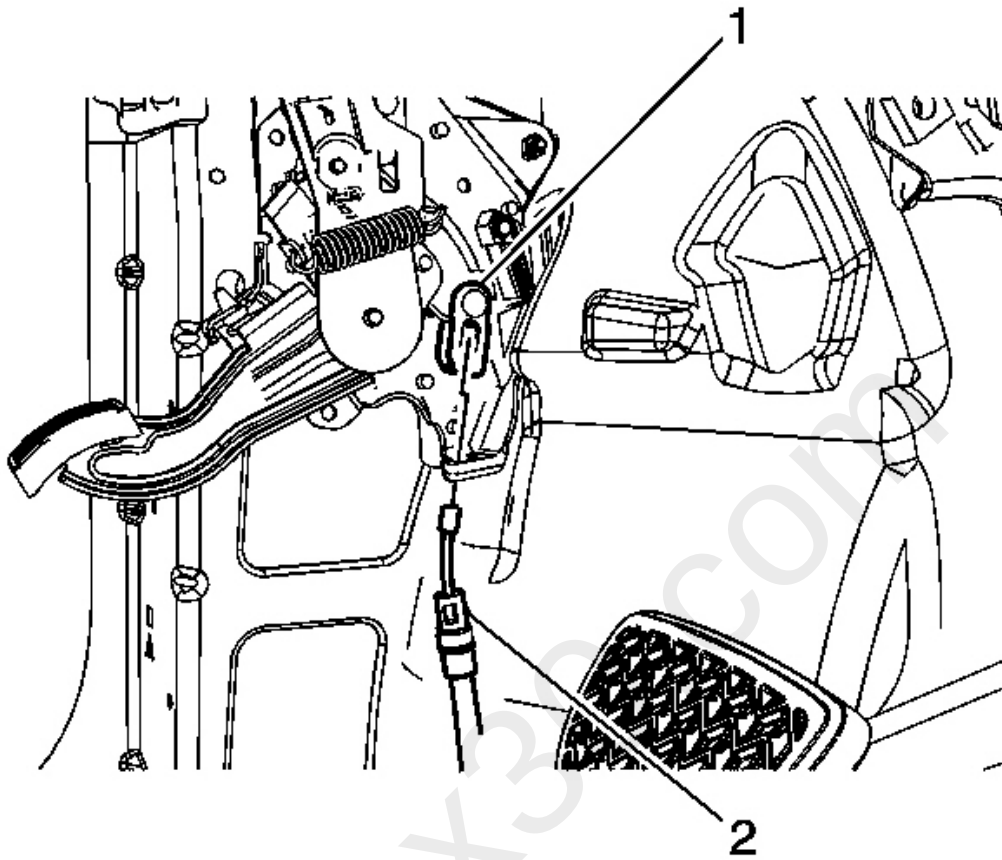


Fig. 15: Identifying Front Park Brake Cable Conduit & Park Brake Pedal Clevis
Courtesy of GENERAL MOTORS CORP.

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

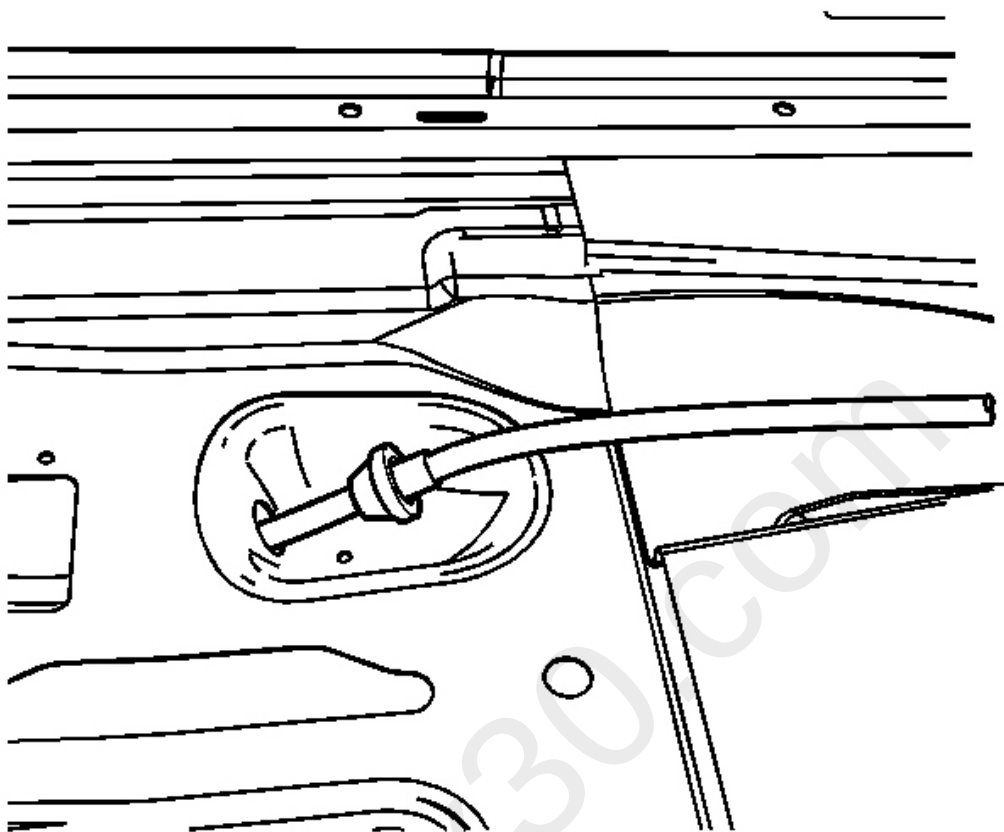


Fig. 16: View Of Park Brake Cable Pass Through Grommet
Courtesy of GENERAL MOTORS CORP.

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

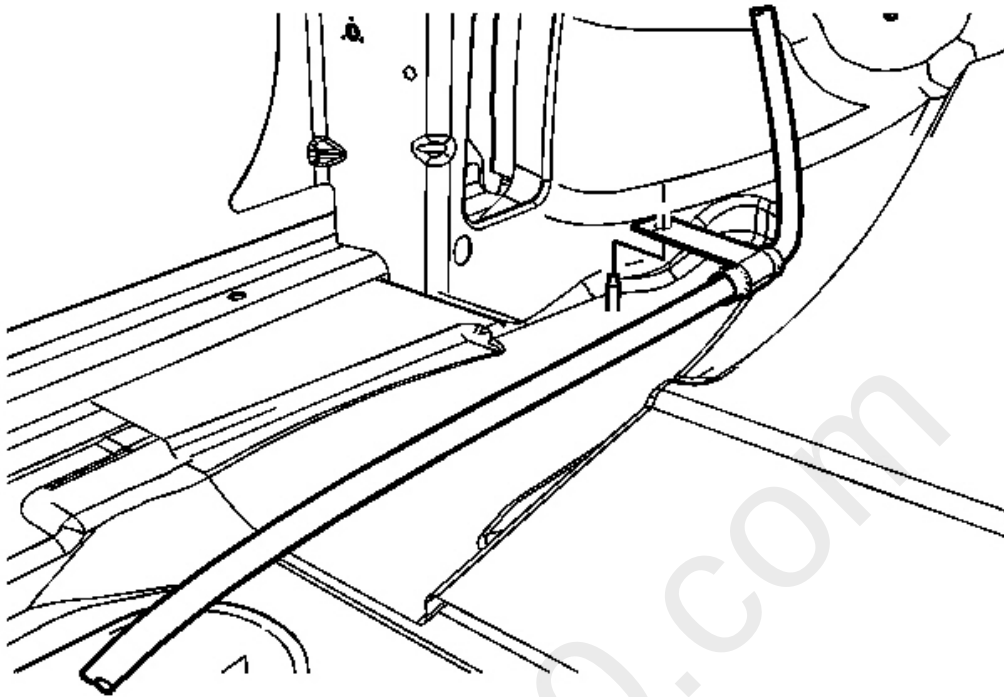


Fig. 17: View Of Park Brake Cable & Routing Clip
Courtesy of GENERAL MOTORS CORP.

6. Position the park brake cable routing clip to the floor stud.
7. Position the driver floor carpet to the vehicle floor.
8. Connect the park brake warning indicator switch electrical connector.
9. Install the left side body hinge pillar trim panel. Refer to **Body Hinge Pillar Trim Panel Replacement** .

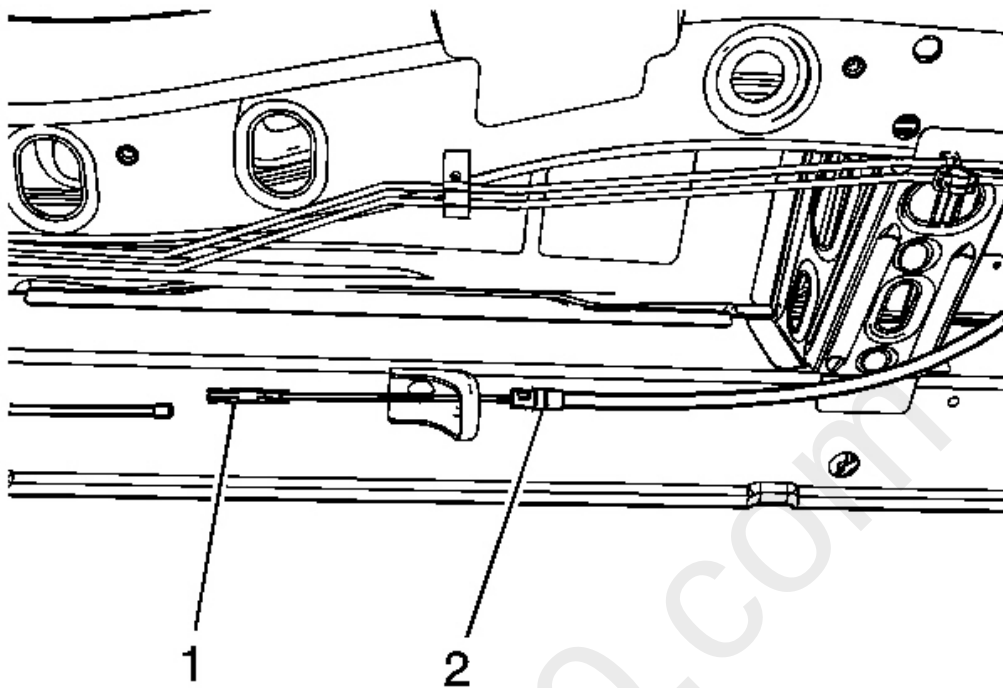


Fig. 18: Identifying Front Park Brake Cable & Conduit
Courtesy of GENERAL MOTORS CORP.

10. Install the front park brake cable (1) to the park brake cable bracket on the body.
11. Ensure the locking tabs on the cable conduit (2) are fully engaged to the park brake cable bracket.
12. Connect the front park brake cable to the rear park brake cable.
13. Adjust the park brake. Refer to **Parking Brake Adjustment**.

PARKING BRAKE REAR CABLE REPLACEMENT (LEFT)

Special Tools

J-37043: Parking Brake Cable Release Tool

Removal Procedure

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

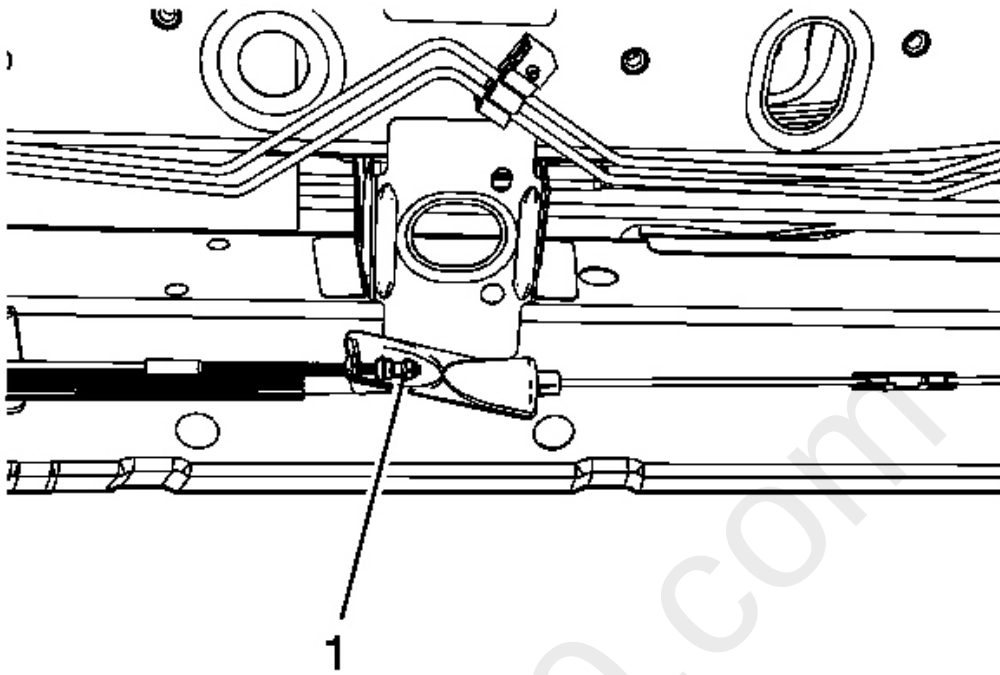


Fig. 19: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

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

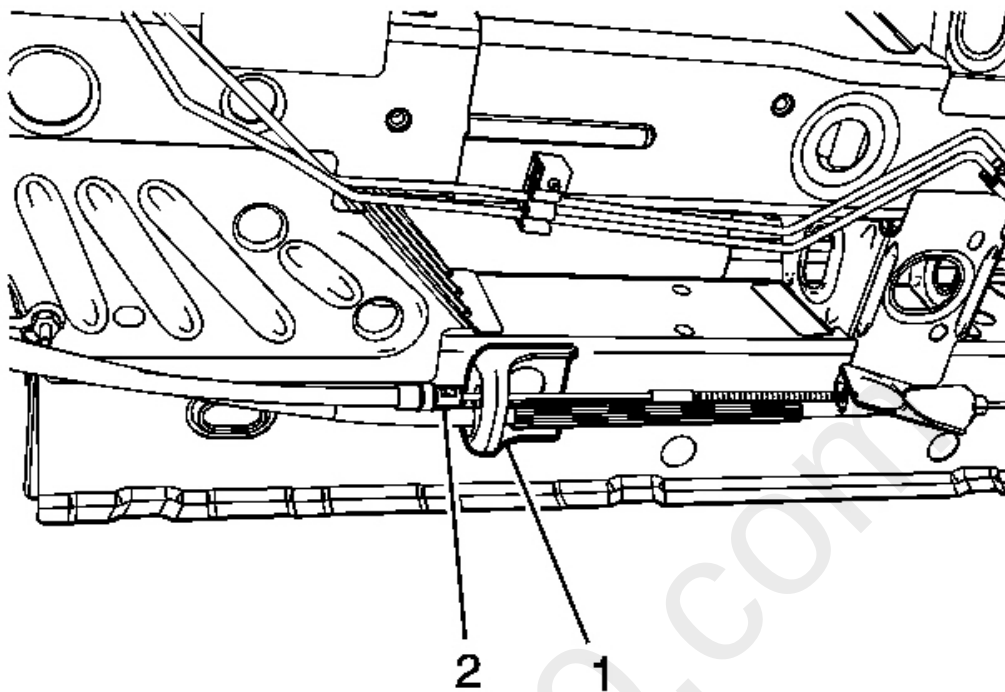


Fig. 20: Park Brake Cable Bracket & Conduit
Courtesy of GENERAL MOTORS CORP.

4. Using the **J-37043: Parking Brake Cable Release Tool**, 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.

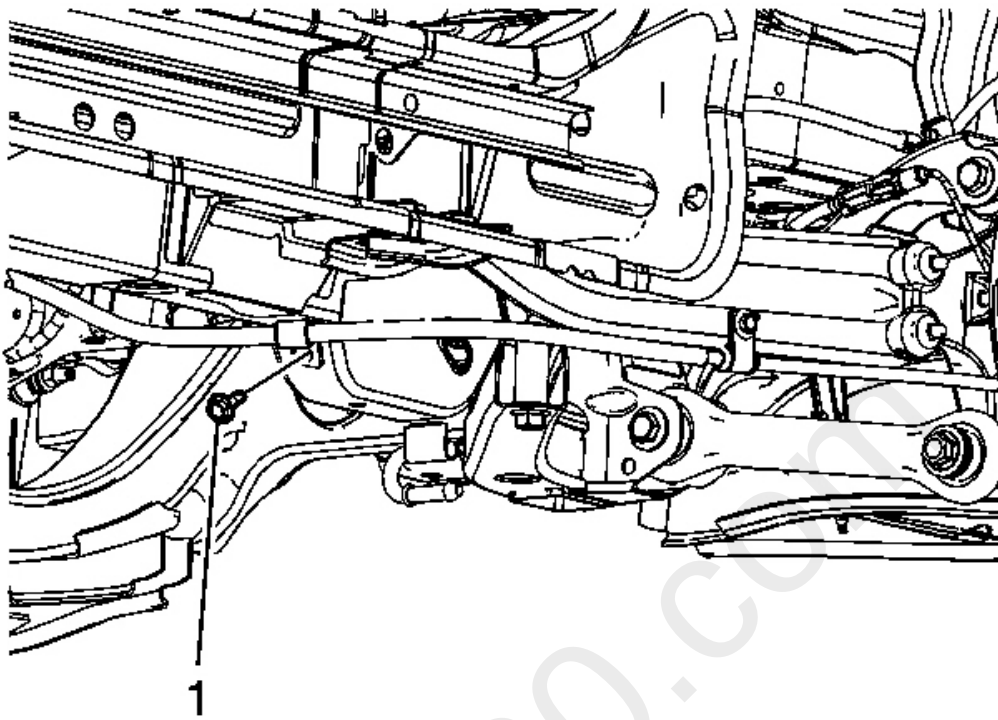


Fig. 21: Park Brake Cable Bracket Bolt
Courtesy of GENERAL MOTORS CORP.

6. Remove the park brake cable bracket bolt (1) from the vehicle underbody.

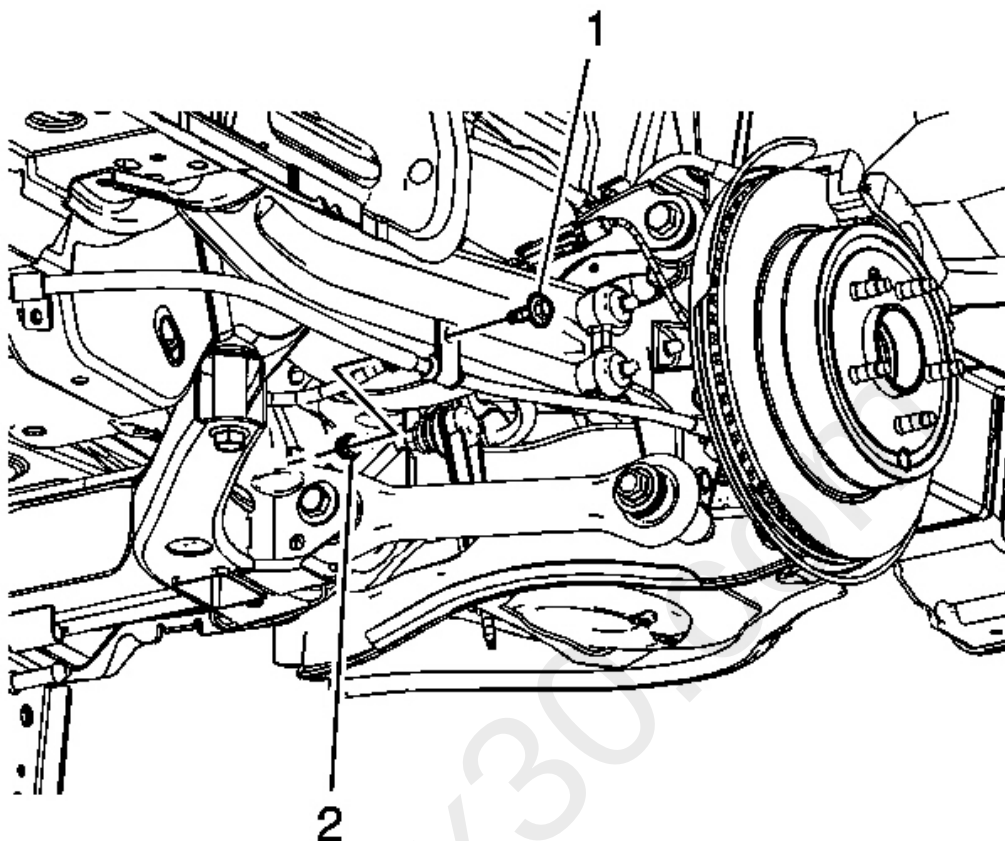


Fig. 22: Park Brake Cable Bracket Bolt And Nut
Courtesy of GENERAL MOTORS CORP.

7. Remove the park brake cable bracket bolt (1) and nut (2) from the lower trailing arm.

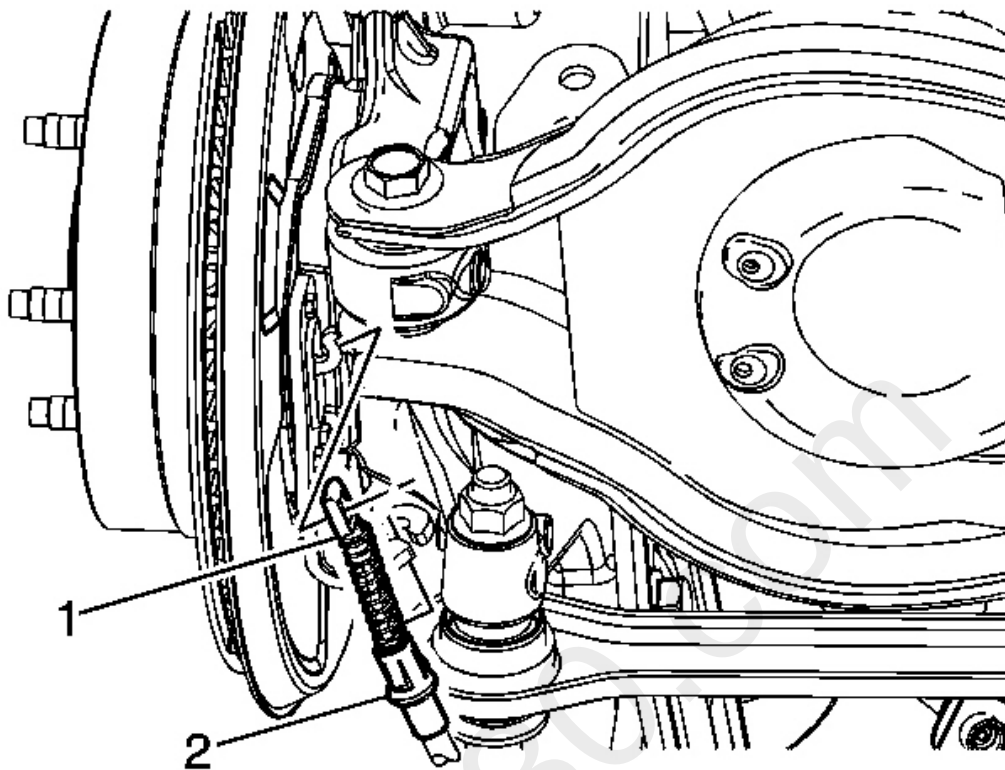


Fig. 23: Park Brake Cable & Eyelet
Courtesy of GENERAL MOTORS CORP.

8. Disconnect the park brake cable eyelet (1) from the park brake actuator.
9. Using the **J-37043: Parking Brake Cable Release Tool**, remove the parking brake cable (2) from the park brake cable bracket.
10. Remove the park brake cable from the cable bracket (2).

Installation Procedure

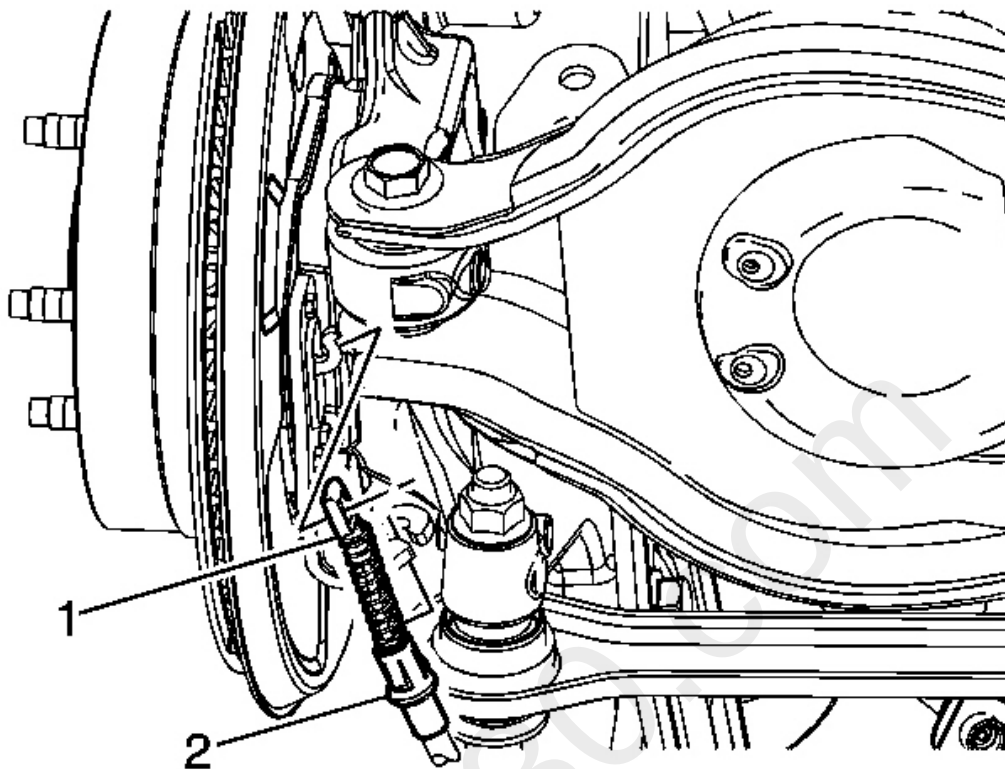


Fig. 24: Park Brake Cable & Eyelet
Courtesy of GENERAL MOTORS CORP.

1. Connect the park brake cable eyelet (1) to the park brake actuator.
2. Install the parking brake cable (2) to the park brake cable bracket.
3. Ensure the locking tabs on the cable conduit are fully engaged to the cable bracket.

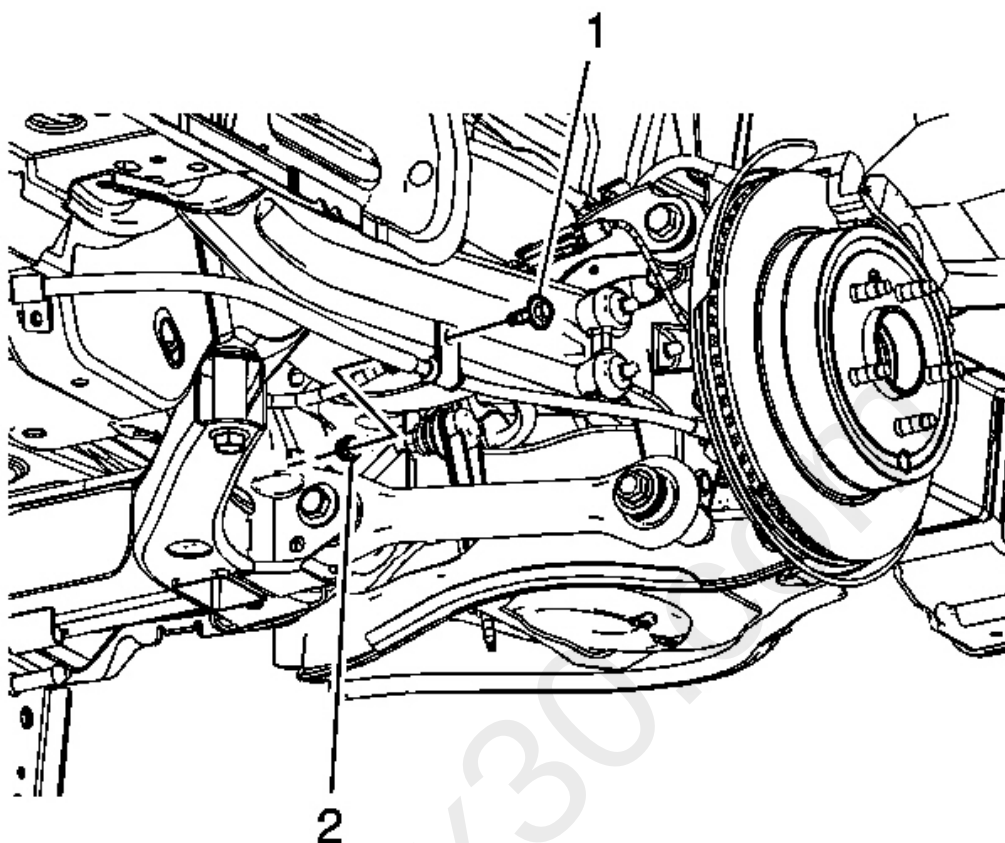


Fig. 25: Park Brake Cable Bracket Bolt And Nut
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Fastener Caution .

4. Install the park brake cable bracket bolt (1) and nut (2) and tighten to 25 N.m (18 lb ft).
5. Install the park brake cable bracket bolt (1) to the vehicle underbody and tighten to 25 N.m (18 lb ft).

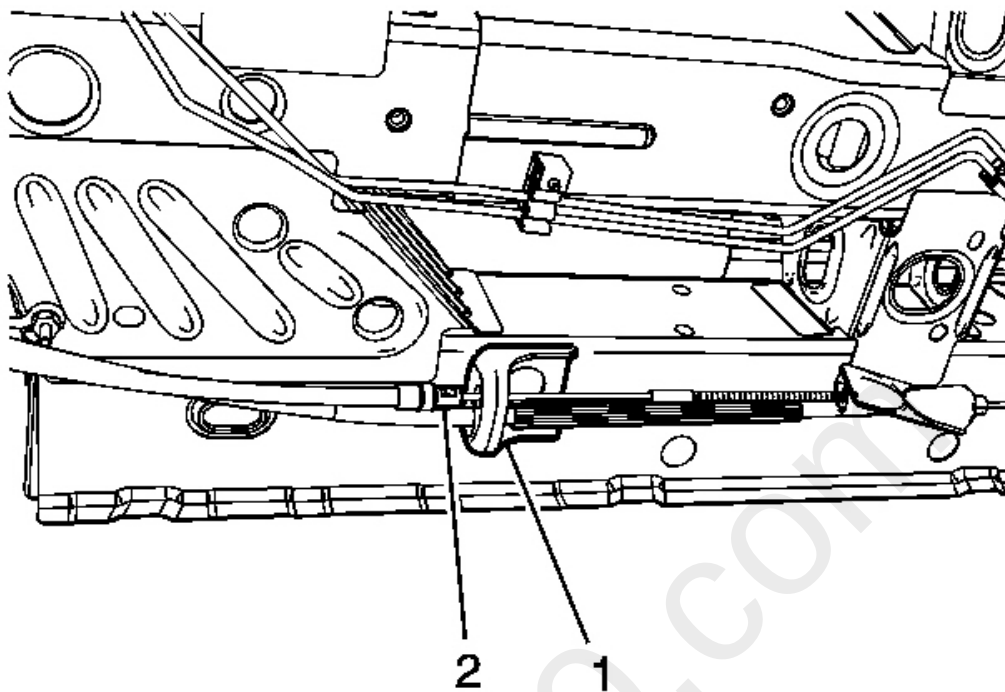


Fig. 26: Park Brake Cable Bracket & Conduit
Courtesy of GENERAL MOTORS CORP.

6. Install the park brake cable to the park brake cable bracket (1).
7. Ensure the locking tabs on the cable conduit (2) are fully engaged to the park brake cable bracket.
8. Install the park brake cable to the equalizer.

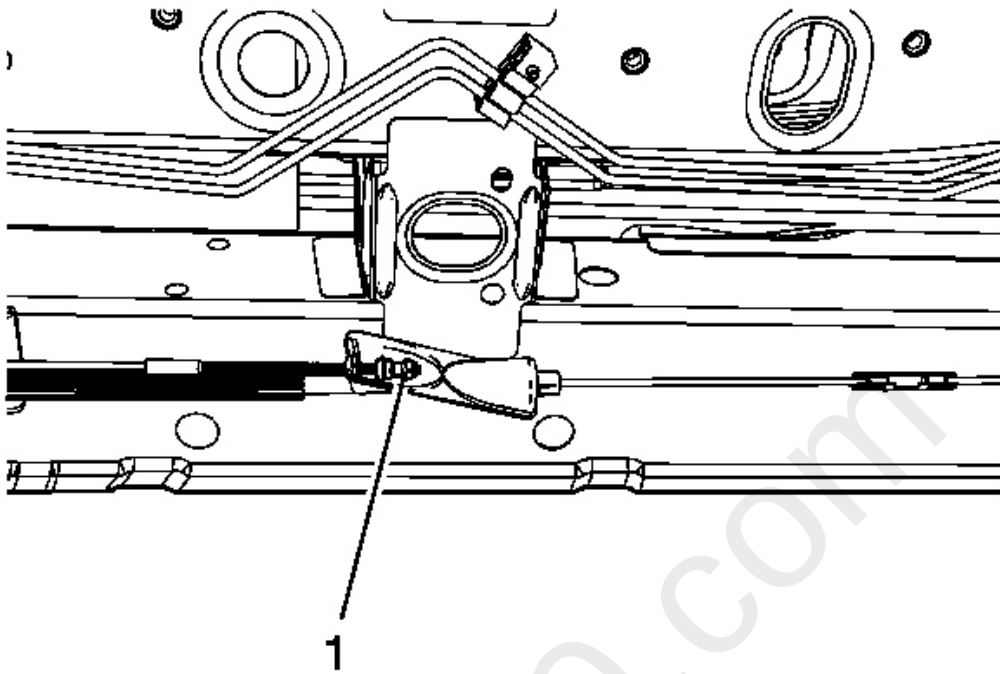


Fig. 27: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

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

PARKING BRAKE REAR CABLE REPLACEMENT (RIGHT)

Special Tools

J-37043: Parking Brake Cable Release Tool

Removal Procedure

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

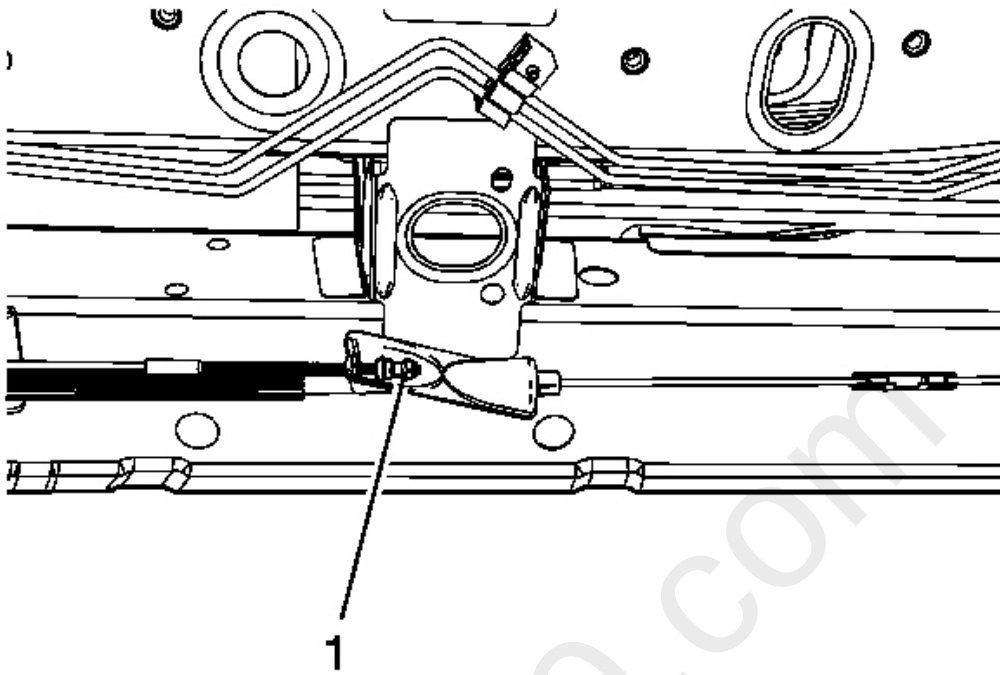


Fig. 28: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

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

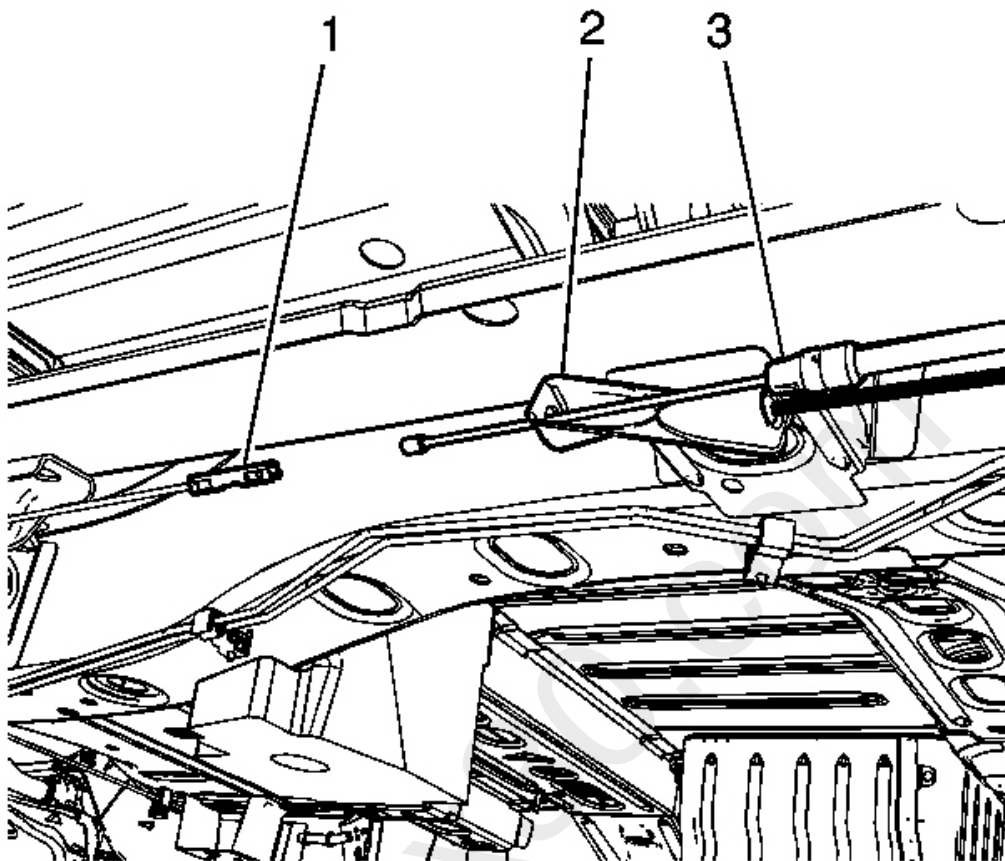


Fig. 29: View Of Park Brake Cable, Conduit & Park Brake Equalizer
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the front park brake cable (1) from the right park brake cable.
5. Using the **J-37043: Parking Brake Cable Release Tool**, release the park brake cable from the park brake equalizer (2) by compressing the locking tabs on the cable conduit (3).

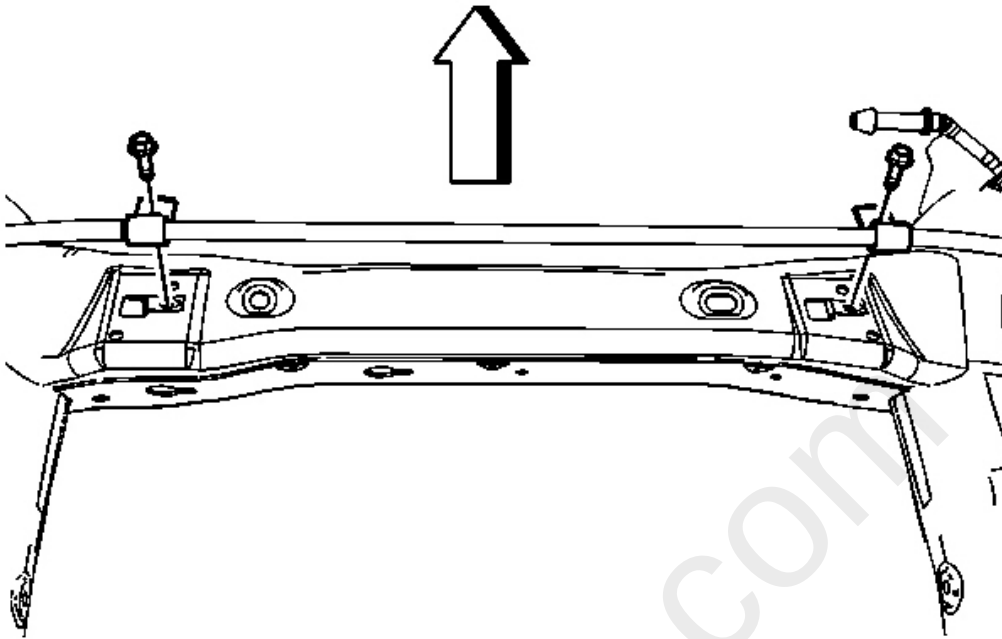


Fig. 30: View Of Park Brake Cable Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

6. Remove the 2 park brake cable bracket bolts located on top of the crossmember above the rear suspension module.
7. Remove the park brake cable bracket bolt from the lower trailing arm.

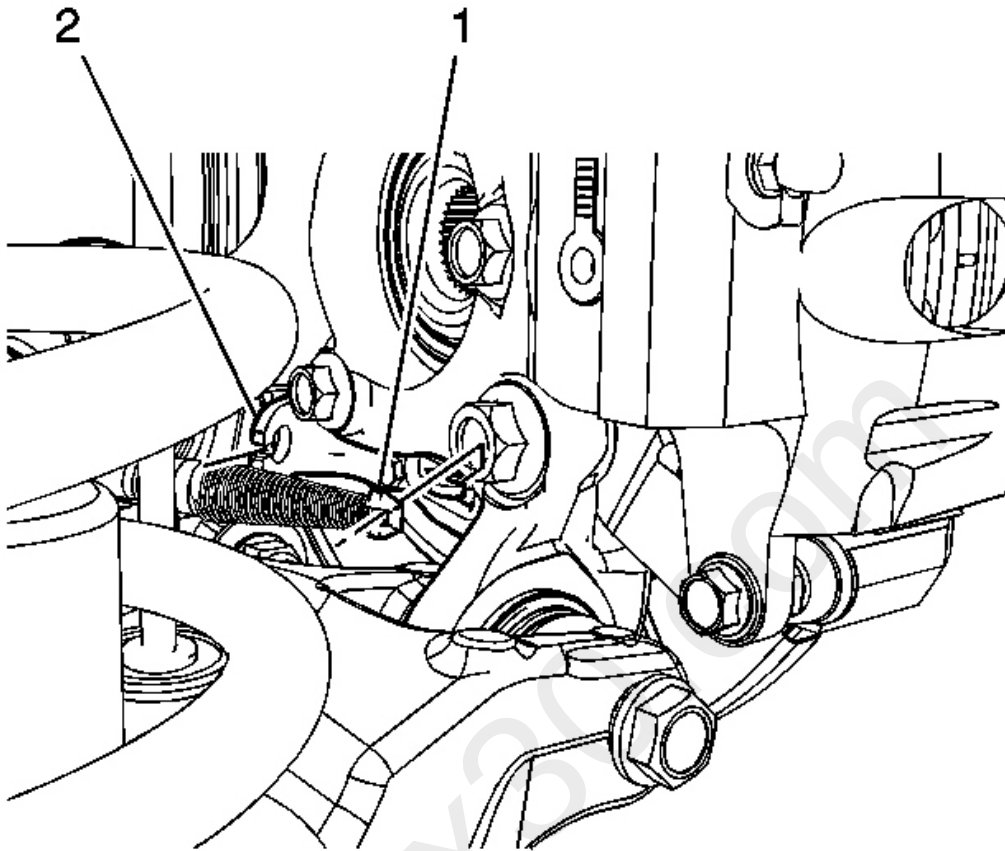


Fig. 31: Identifying Park Brake Cable Eyelet & Cable Bracket
Courtesy of GENERAL MOTORS CORP.

8. Disconnect the park brake cable eyelet (1) from the park brake actuator.
9. Using the **J-37043: Parking Brake Cable Release Tool**, compress the locking tabs on the park brake cable conduit.
10. Remove the park brake cable from the cable bracket (2).

Installation Procedure

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

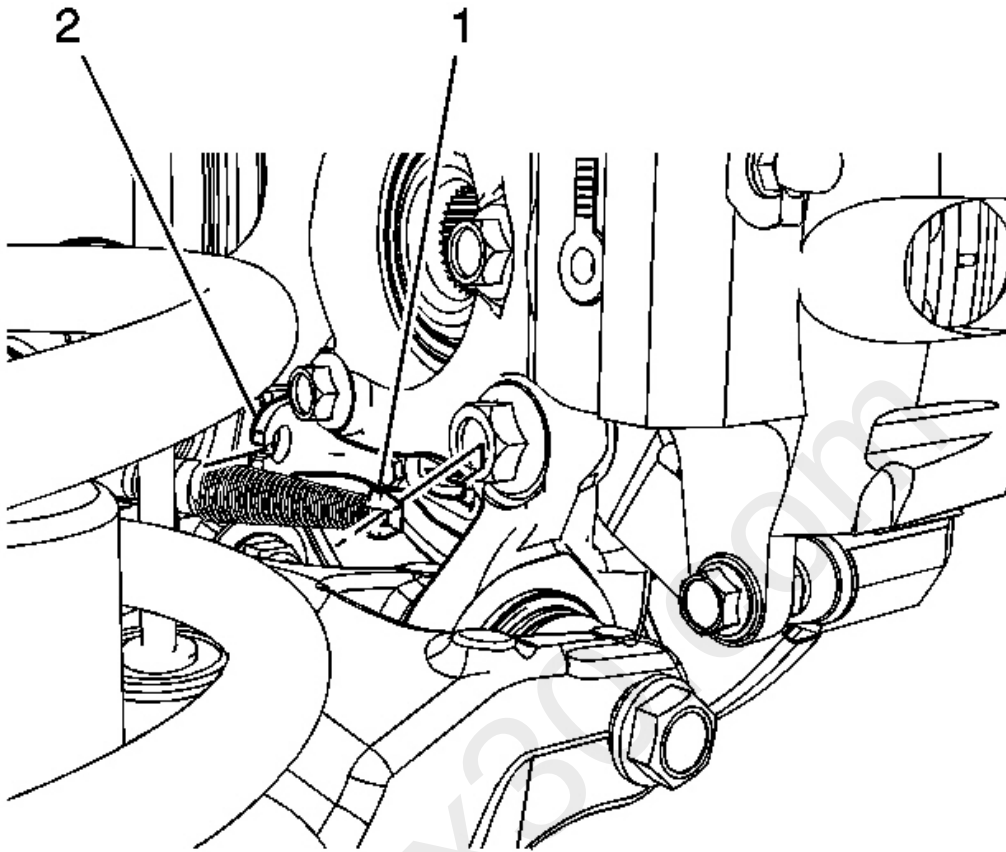


Fig. 32: Identifying Park Brake Cable Eyelet & Cable Bracket
Courtesy of GENERAL MOTORS CORP.

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

CAUTION: Refer to Fastener Caution .

5. Install the park brake cable bracket bolt to the lower trailing arm and tighten to 25 N.m (18 lb ft).

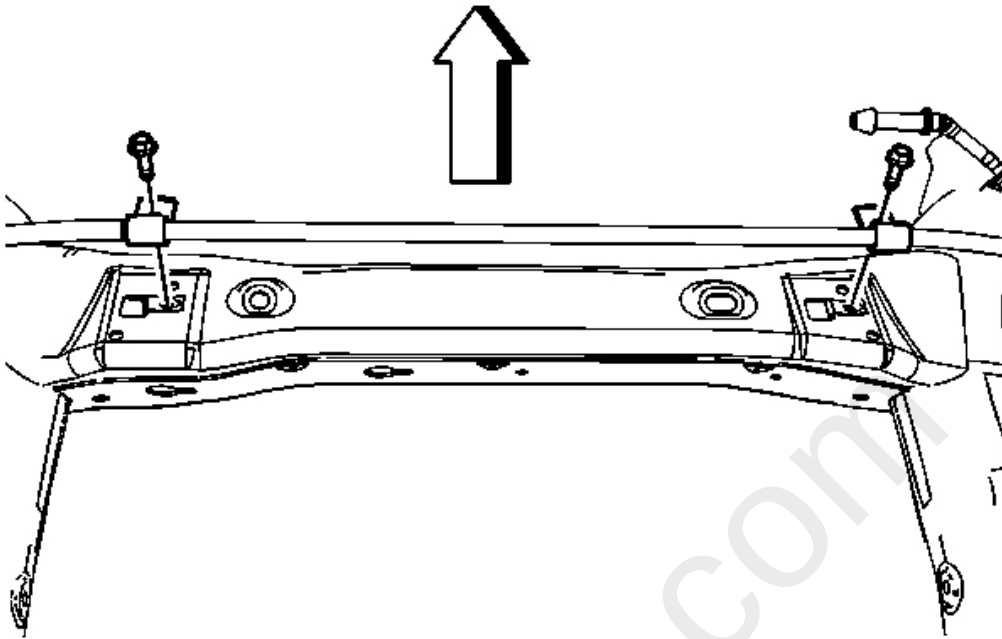


Fig. 33: View Of Park Brake Cable Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

6. Install the 2 park brake cable bracket bolts and tighten to 25 N.m (18 lb ft).
7. Position the park brake cable to the equalizer.

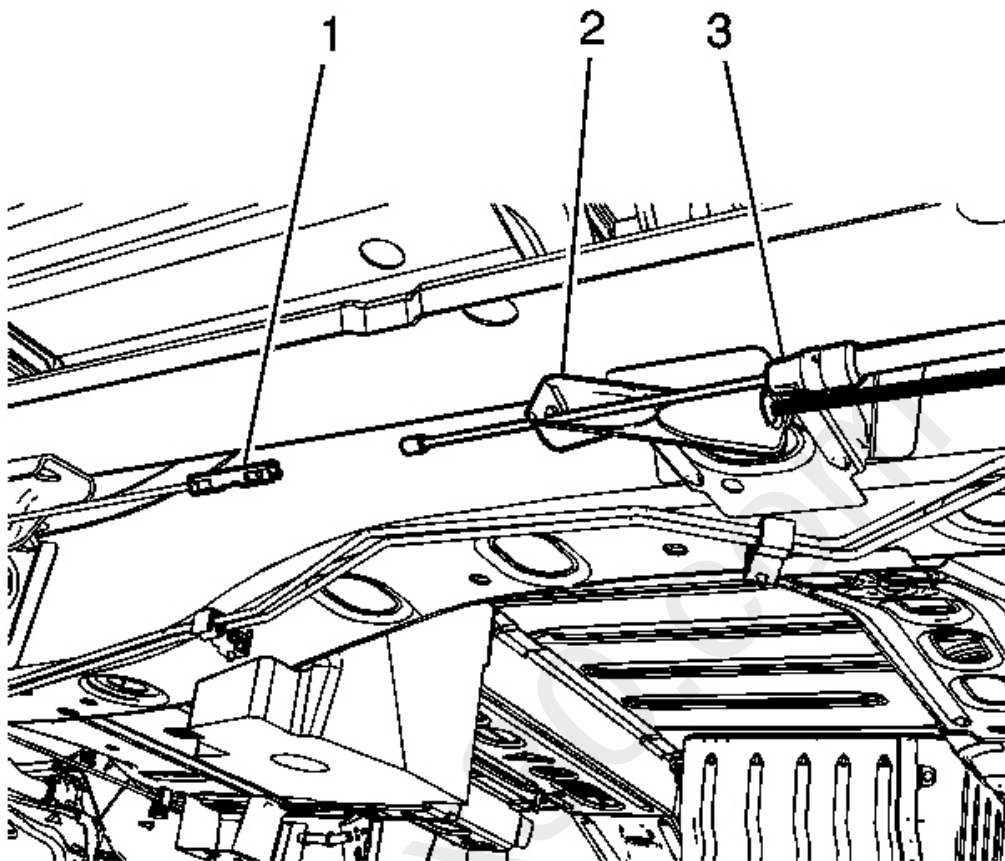


Fig. 34: View Of Park Brake Cable, Conduit & Park Brake Equalizer
Courtesy of GENERAL MOTORS CORP.

8. Connect the front park brake cable (1) to the right park brake cable.
9. Install the park brake cable to the park brake equalizer (2).
10. Ensure the locking tabs on the cable conduit (3) are fully engaged to the equalizer.

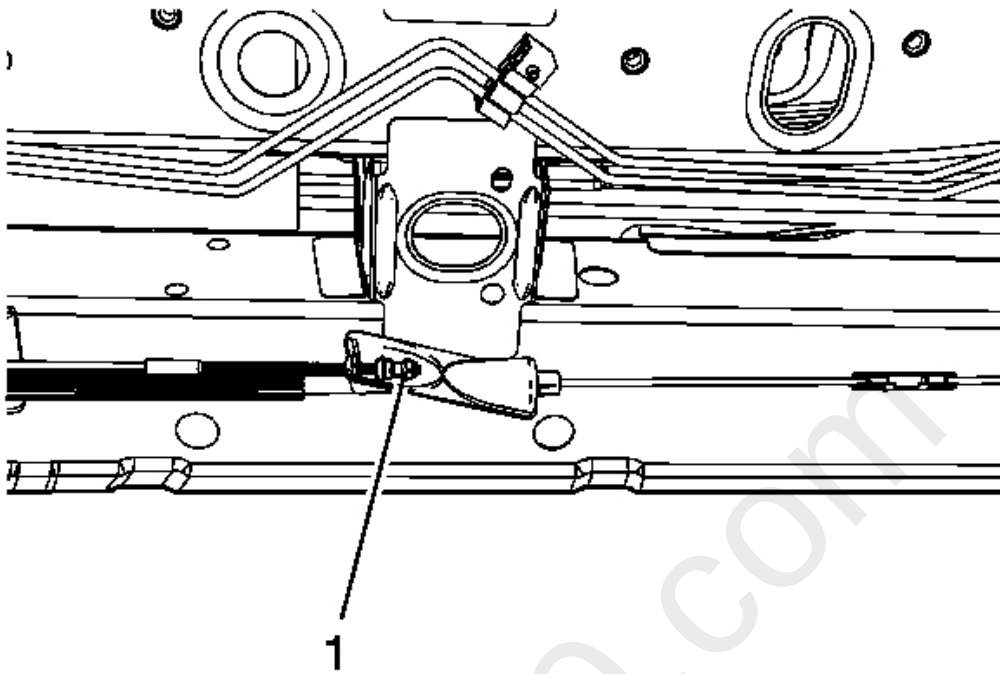


Fig. 35: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

11. Loosely install the park brake equalizer locknut (1).
12. Adjust the park brake. Refer to **Parking Brake Adjustment**.

PARKING BRAKE ACTUATOR REPLACEMENT

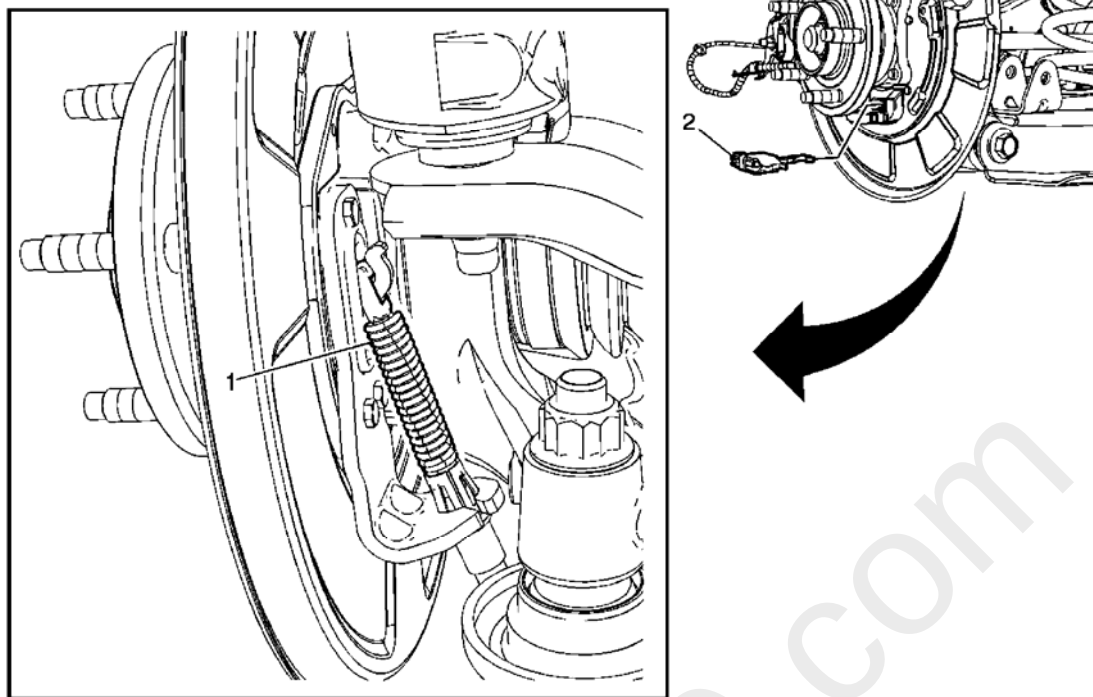


Fig. 36: Parking Brake Actuator
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
WARNING: Refer to <u>Brake Dust Warning</u> .	
Preliminary Procedures 1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> . 2. Remove the tire and wheel. Refer to <u>Tire and Wheel Removal and Installation</u> . 3. Remove the park brake shoes. Refer to <u>Parking Brake Shoe Replacement</u>.	
1	Park Brake Cable Eye Procedure: Disconnect the park brake cable eye from the actuator lever.
2	Parking Brake Actuator Procedure: Adjust the park brake. Refer to <u>Parking Brake Adjustment</u> .

PARKING BRAKE ADJUSTMENT

Special Tools

WARNING: Refer to Brake Dust Warning .

Adjust

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 .

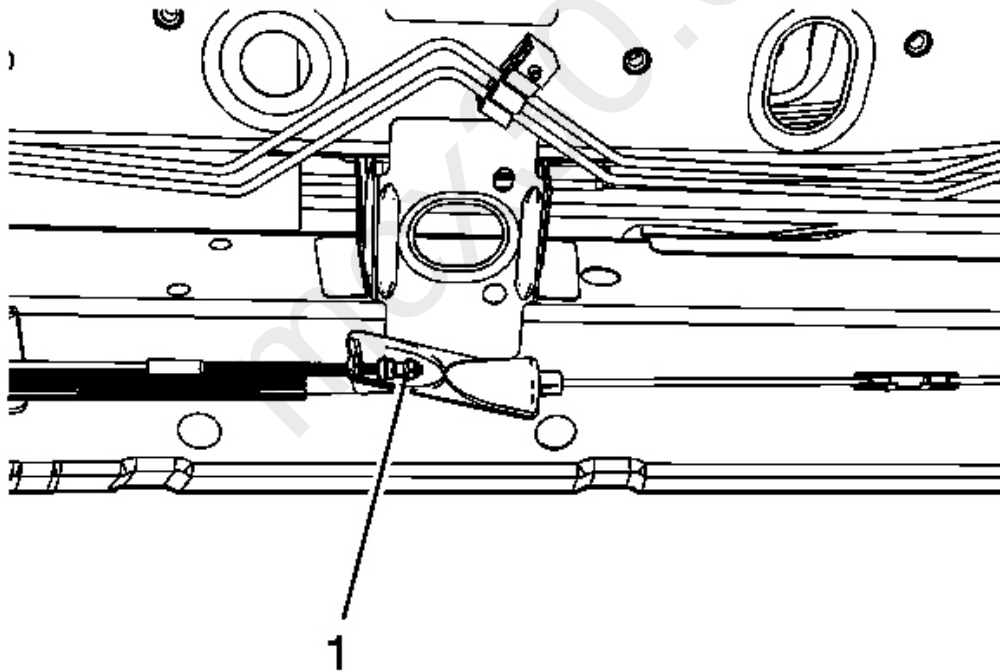


Fig. 37: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

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** .

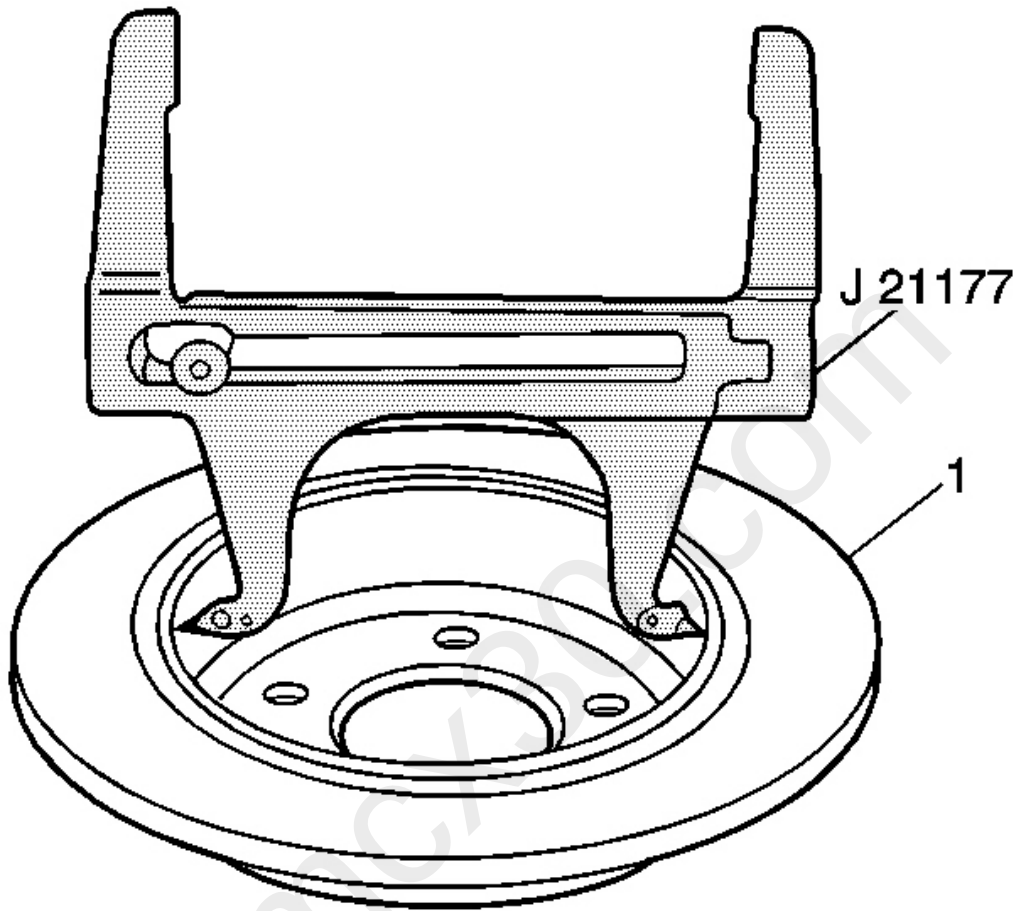


Fig. 38: Measuring Inside Of Rotor
Courtesy of GENERAL MOTORS CORP.

7. Set the **J-21177-A: Drum-to-Brake Shoe Clearance Gauge** inside of the park brake drum (1) at the widest point.
- 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.

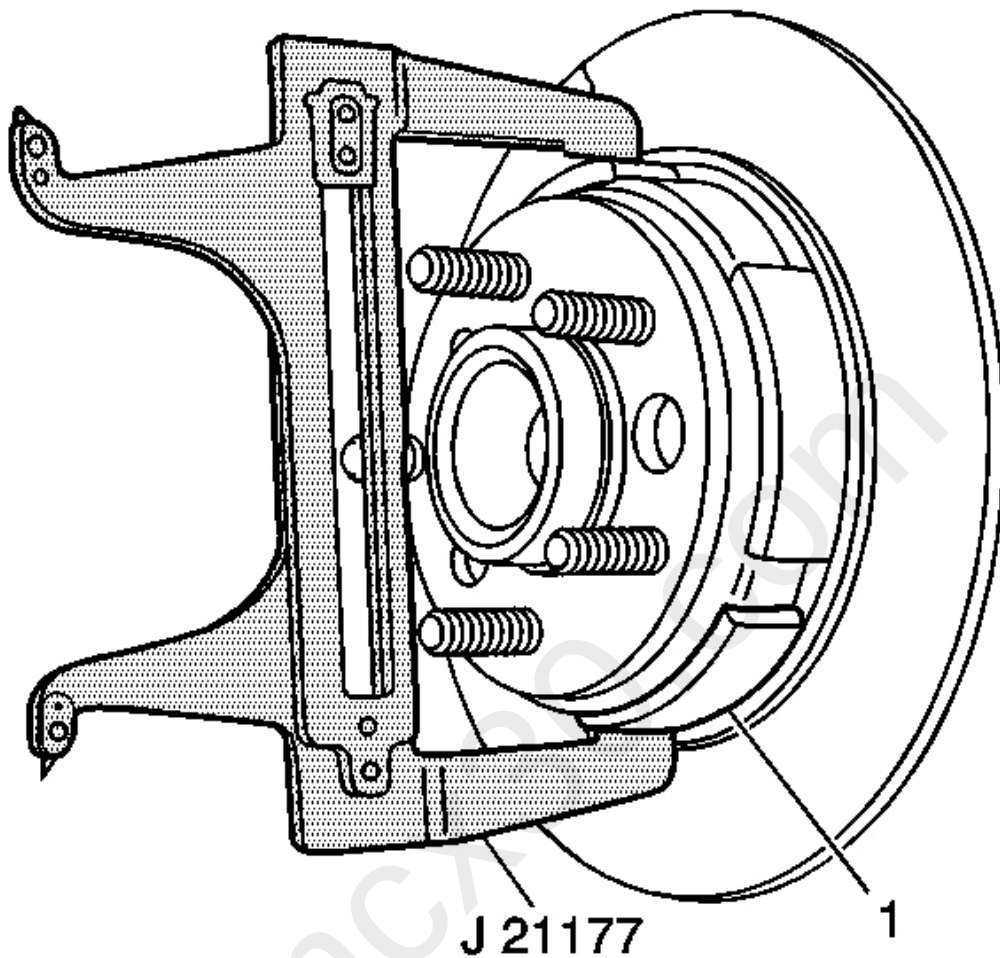


Fig. 39: Adjusting Parking Brake Shoes Using Special Tool
Courtesy of GENERAL MOTORS CORP.

8. Position the **J-21177-A: Drum-to-Brake Shoe Clearance Gauge** over the park brake shoe (1) at the widest point.
9. Turn the adjuster screw until the park brake shoe just contacts the **J-21177-A: Drum-to-Brake Shoe Clearance Gauge**.
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**.

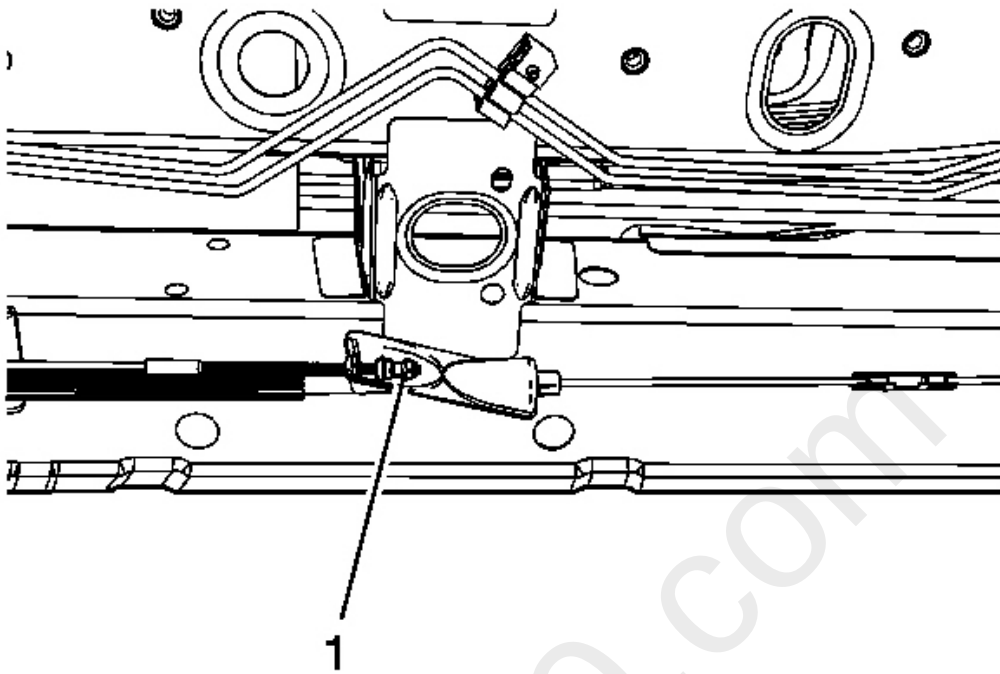


Fig. 40: Identifying Park Brake Cable Locknut
Courtesy of GENERAL MOTORS CORP.

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 Lever Assembly

Receives, multiplies, and transfers park brake system apply input force from driver to park brake cable system.
Releases applied park brake system when lever release button is depressed and lever is returned to the at rest position.

Park Brake Cables

Transfers input force received from park brake lever, 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.
Threaded front park brake cable adjuster is also used to remove slack in park brake cables.

Park Brake Apply Lever

Multiplies and transfers input force to park brake actuator/adjuster.

Park Brake Actuator/Adjuster

Uses multiplied input force from apply lever to expand drum brake shoes toward the friction surface of the brake drum.
Threaded park brake actuators/adjusters are also used to control clearance between the drum brake shoes and the friction surface of the brake drum.

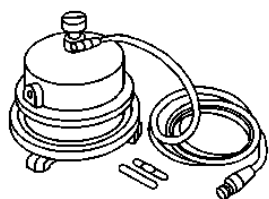
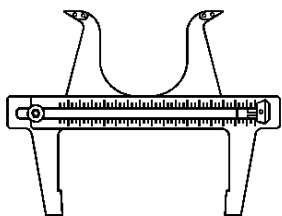
System Operation

Park brake apply input force is received by the park brake lever assembly being applied. The input force is multiplied by the lever assembly, 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/adjusters which expand the drum brake shoes toward the friction surface of the brake drum in order to prevent the rotation of the rear tire and wheel assemblies. The park brake lever assembly releases an applied park brake system when it is released and returned to the at rest position.

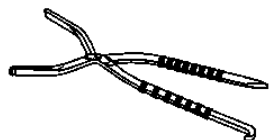
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/ Description
	J 21177-A Drum-to-Brake Shoe Clearance Gauge



J 37043
Parking Brake Cable Release Tool



J 38400
Brake Shoe Spanner and Spring Remover