

2008 BRAKES

Parking Brake & Actuation - Mustang

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
Metal Brake Parts Cleaner PM-4-A or PM-4-B (US); CPM-4 (Canada)	-	-

TORQUE SPECIFICATIONS

Description	Nm	lb-ft
Parking brake cable bracket bolts	27	20
Parking brake cable crossmember bracket bolt	20	15
Parking brake control bolts	30	22
Parking brake control nuts	17	13
Support brace bolts	63	46

DESCRIPTION AND OPERATION

PARKING BRAKE

Parking Brake

The parking brake system consists of the following components:

- Parking brake control
- Rear parking brake cables

The parking brake system is a mechanical system that activates a self-adjusting brake system within the rear brake caliper.

The parking brake system is cable-actuated and controlled by an independent hand-operated parking brake control. The parking brake system is actuated when the parking brake control is pulled up and released by pressing the release button on the end of the parking brake control handle. The parking brake control applies tension to rear brake pads through the front parking brake cable and conduit and the LH and RH rear parking brake cables. The respective rear parking brake assemblies are then applied.

DIAGNOSTIC TESTS

PARKING BRAKE

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Material

Item	Specification
Metal Brake Parts Cleaner PM-4-A or PM-4-B (US); CPM-4 (Canada)	-

Principles of Operation

Parking Brake System - The parking brake system is cable-actuated and controlled by an independent hand-operated parking brake control that is not self adjusting. The parking brake system is actuated when the parking brake control is pulled up. When the parking brake control is pulled, tension is applied to the front parking brake cable. This tension pulls on both rear parking brake cables, which are attached to the brake caliper parking brake actuators and apply the brake pads. When the parking brake release button is pressed and the brake control is released, the return springs on the brake calipers and the parking brake control return the system to the released position.

Inspection and Verification

NOTE: Prior to carrying out any diagnosis, make sure the red brake warning indicator is functional. Refer to INSTRUMENT CLUSTER (IC), MESSAGE CENTER, AND WARNING CHIMES article.

The first indication that something may be wrong in the brake system is a change in the feeling through the parking brake control. The parking brake not holding on an incline or dragging after being released are also indicators of system concerns.

Check the operation of the parking brake system with the vehicle on a hoist and the parking brake control fully released. Check for any damaged cables and install new components as necessary. Carry out the brake system diagnosis.

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical damage.

VISUAL INSPECTION CHART

Mechanical
• Front parking brake cable and conduit • Parking brake control • Parking brake equalizer • Rear brake calipers • Rear parking brake cables and conduits

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. If the cause is not visually evident, verify the symptom and Go to Symptom Chart.

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Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
The red brake warning indicator is always/never on	- Brake fluid level switch - Parking brake switch - Wiring, terminals or connectors - Instrument cluster - Smart junction box (SJB)	REFER to <u>INSTRUMENT CLUSTER (IC), MESSAGE CENTER, AND WARNING CHIMES</u> article to diagnose the red brake warning indicator.
Rear brakes drag	- Parking brake component(s) - Rear brake caliper guide pins - Brake caliper - Brake booster - Brake master cylinder	- INSPECT the parking brake system for corrosion, rust or kinked cables. REPAIR or INSTALL new parking brake components as necessary. - INSPECT the brake caliper guide pins, REFER to Brake Caliper Guide Pins in <u>BRAKE SYSTEM - GENERAL INFORMATION</u> article. - INSPECT the brake caliper guide pins, REFER to Brake Caliper in <u>BRAKE SYSTEM - GENERAL INFORMATION</u> article. - CARRY OUT the Brake Booster Component Test. REFER to <u>BRAKE SYSTEM - GENERAL INFORMATION</u> article. - CARRY OUT the Brake Master Cylinder Component Test. REFER to <u>BRAKE SYSTEM - GENERAL INFORMATION</u> article.
The parking brake will not apply	- Parking brake control - Parking brake cables - Parking brake rear wheel components	Go to <u>Pinpoint Test A.</u>
The parking brake will not release	- Parking brake cables - Parking brake control - Parking brake rear wheel components	Go to <u>Pinpoint Test B.</u>

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Pinpoint Tests

Pinpoint Test A: The Parking Brake Will Not Apply

Normal Operation

The parking brake system is cable-actuated and controlled by an independent hand-operated parking brake control that is not self adjusting. The parking brake system is actuated when the parking brake control is pulled up. When the parking brake control is pulled, tension is applied to the front parking brake cable. This tension pulls on both rear parking brake cables, which are attached to the brake caliper parking brake actuators and apply the brake pads.

This pinpoint test is intended to diagnose the following:

- Parking brake control
- Parking brake cables
- Rear brake calipers

PINPOINT TEST A: THE PARKING BRAKE WILL NOT APPLY

A1 CHECK THE PARKING BRAKE CONTROL

- Apply the parking brake control.
- **Does the parking brake control move?**

YES : Go to A2.

NO : Go to A3.

A2 CHECK FOR BROKEN CABLES

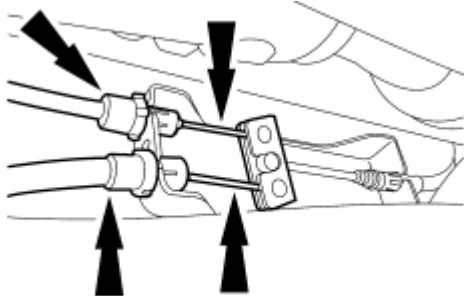
NOTE: Have an assistant apply and release the parking brake control to help isolate disconnected cables or cables that do not move.

- Inspect the following items for damage and correct connections:
 - Parking brake control
 - Front cable
 - Equalizer
 - LH rear cable
 - RH rear cable
 - Rear brake caliper actuators
- **Is any damage found or are any components disconnected?**

YES : CONNECT the component(s) or INSTALL a new parking brake component(s) as necessary. TEST the system for normal operation.

NO : VERIFY that the rear pads are within thickness specifications. REFER to Specifications in **BRAKE SYSTEM - GENERAL INFORMATION** article. If the rear pads are OK, INSTALL new rear brake calipers. REFER to **REAR DISC BRAKE** article.

A3 ISOLATE THE PARKING BRAKE CONTROL AND FRONT PARKING BRAKE CABLE

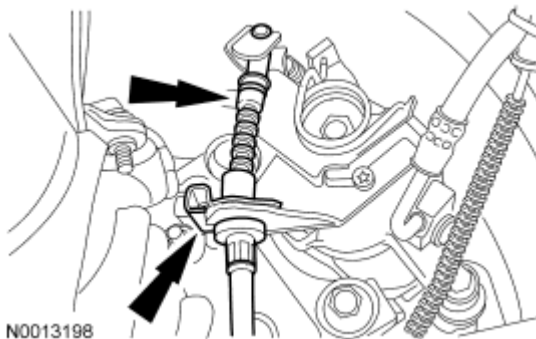


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Fig. 1: Isolating Parking Brake Control & Front Parking Brake Cable
Courtesy of FORD MOTOR CO.

- Disconnect the LH and RH rear cables from the equalizer and release the cables from the body bracket.
- Apply the parking brake control.
- **Does the parking brake control move?**
YES : Go to A4.
NO : INSTALL a new parking brake control. REFER to **Parking Brake Control** in this article.
TEST the system for normal operation.

A4 ISOLATE THE REAR PARKING BRAKE CABLES



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Fig. 2: Isolating Rear Parking Brake Cables
Courtesy of FORD MOTOR CO.

- Disconnect the LH and RH parking brake cables from the subframe brackets and the brake calipers.
- While holding the cable conduit, attempt to slide the cable inside the conduit.
- **Does the cable slide freely inside the conduit?**
YES : INSTALL new rear brake calipers. REFER to **REAR DISC BRAKE** article.
NO : INSTALL a new rear brake cable(s). REFER to **Parking Brake Cable - Rear** in this article.
TEST the system for normal operation.

Normal Operation

When the parking brake release button is pressed and the brake control is released, the return springs on the brake calipers and the parking brake control return the system to the released position.

This pinpoint test is intended to diagnose the following:

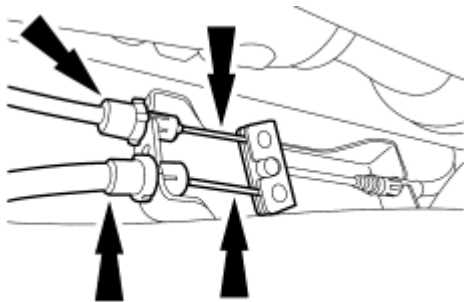
- Parking brake cables
- Parking brake control
- Parking brake rear wheel components

PINPOINT TEST B: THE PARKING BRAKE WILL NOT RELEASE**B1 CHECK THE PARKING BRAKE CONTROL**

- Press the release button on the parking brake control and release the handle.
- **Does the parking brake control move?**

YES : Go to B2.

NO : INSTALL a new parking brake control. REFER to **Parking Brake Control** in this article.
TEST the system for normal operation.

B2 CHECK THE REAR PARKING BRAKE CABLES

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Fig. 3: Locating Appropriate Rear Parking Brake Cable
Courtesy of FORD MOTOR CO.

- Disconnect the LH and RH rear cables from the equalizer and release the cables from the body bracket.

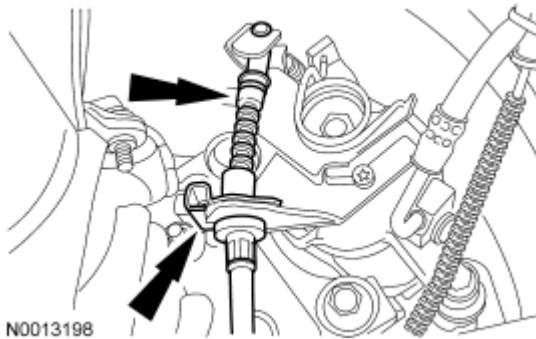


Fig. 4: Locating Parking Brake Cable Retaining Clip
Courtesy of FORD MOTOR CO.

- Disconnect the LH and RH parking brake cables from the subframe brackets and the brake calipers.
- While holding the rear cable conduit, attempt to slide the rear cable inside the conduit.
- **Does the cable slide freely inside the conduit?**
YES : INSTALL new rear brake calipers. REFER to **REAR DISC BRAKE** article.
NO : INSTALL new rear brake cable(s). REFER to **Parking Brake Cable - Rear** in this article.
TEST the system for normal operation.

GENERAL PROCEDURES

PARKING BRAKE CABLE TENSION RELEASE

CAUTION: Do not overtighten the parking brake cable adjustment nut. Overtightening will cause the brakes to drag or lock up.

1. Remove the access cover inside the floor console bin.

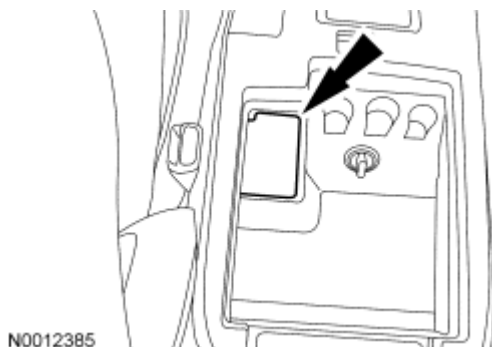


Fig. 5: Locating Access Cover Inside Floor Console Bin
Courtesy of FORD MOTOR CO.

2. Position the parking brake control handle at the fourth notch to access the parking brake cable adjuster nut.

NOTE: The rod is staked to prevent the removal of the nut.

3. Loosen, but do not remove, the parking brake cable adjuster nut.
4. Lower the parking brake control handle.
5. To adjust the parking brake cable tension, refer to **Parking Brake Cable Adjustment** in this article.

PARKING BRAKE CABLE ADJUSTMENT

CAUTION: Do not overtighten the parking brake cable adjustment nut. Overtightening will cause the brakes to drag or lock up.

1. Remove the access cover inside the floor console bin.

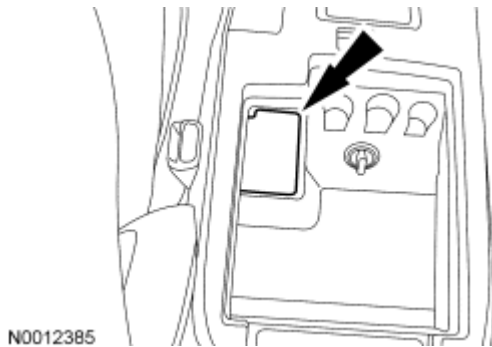


Fig. 6: Locating Access Cover Inside Floor Console Bin
Courtesy of FORD MOTOR CO.

2. Position the parking brake handle up at the fourth notch to access the adjuster nut.

NOTE: The rod is staked to prevent the removal of the nut.

3. Loosen, but do not remove, the parking brake cable adjuster nut.

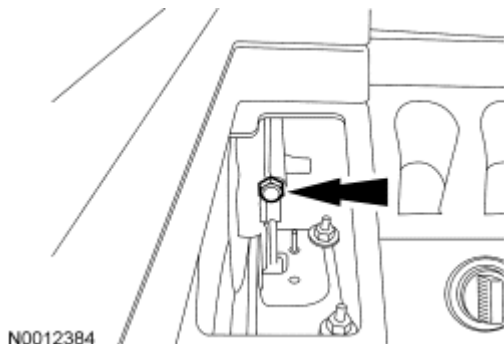


Fig. 7: Locating Parking Brake Cable Adjuster Nut
Courtesy of FORD MOTOR CO.

4. Apply the tension by tightening the parking brake cable adjustment nut until there is no lash in the system

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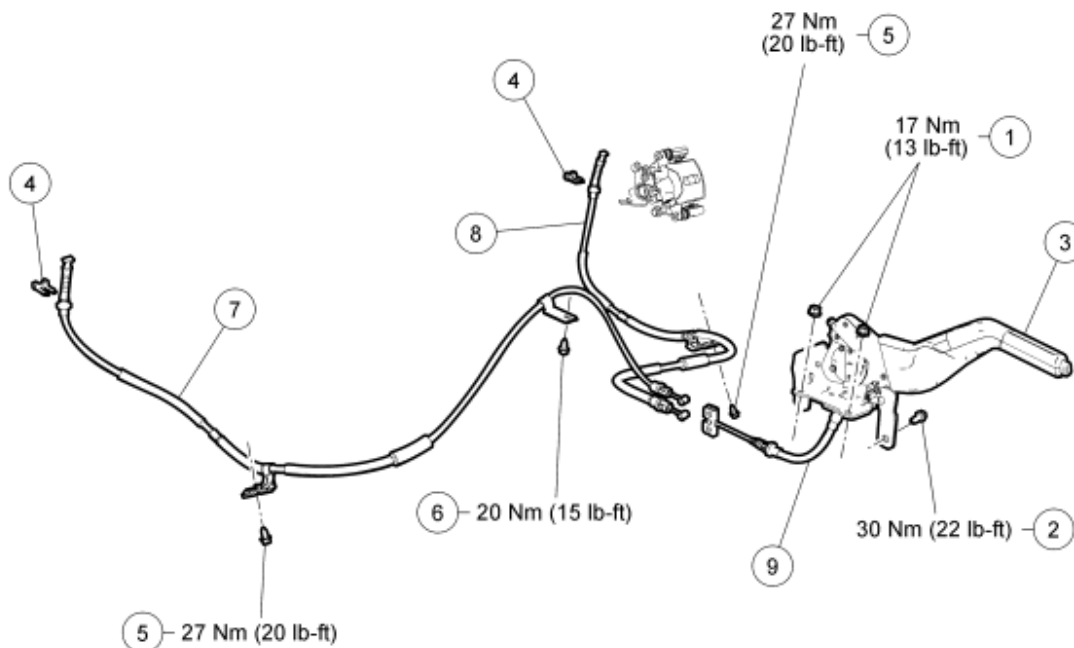
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with the handle in the lowered position.

5. Cycle the parking brake control 4 times and adjust as necessary.
6. Lower the parking brake handle and install the access cover.
7. Test the parking brake system for proper operation.

REMOVAL AND INSTALLATION

PARKING BRAKE - EXPLODED VIEW



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Fig. 8: Exploded View Of Parking Brake With Torque Specifications
Courtesy of FORD MOTOR CO.

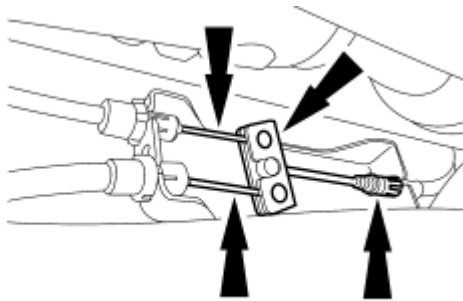
Item	Part Number	Description
1	N804796	Parking brake control nuts (2 required)
2	W704911	Parking brake control bolt (2 required)
3	2780	Parking brake control
4	2860	Parking brake cable retaining clips (2 required)
5	W505263	Parking brake cable bracket bolts
6	W704911	Parking brake cable crossmember bracket bolt
7	2A635	Rear parking brake cable (RH)
8	2A823	Rear parking brake cable (LH)
9	-	Front parking brake cable (part of 2780)

1. For additional information, refer to the procedures in this article.

PARKING BRAKE CONTROL

REMOVAL AND INSTALLATION

1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to **JACKING AND LIFTING** article.
2. Remove the floor console. For additional information, refer to **INSTRUMENT PANEL AND CONSOLE** article.
3. Release the tension on the parking brake cable. For additional information, refer to **Parking Brake Cable Tension Release** in this article.
4. Disconnect the front parking brake cable from the 2 rear parking brake cables at the equalizer and release the front cable from the body bracket.



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Fig. 9: Locating Front Parking Brake Cable
Courtesy of FORD MOTOR CO.

5. Disconnect the parking brake switch electrical connector.
6. Remove the 2 nuts from the parking brake control.
 - To install, tighten to 17 Nm (13 lb-ft).
7. Remove the 2 bolts from the parking brake control.
 - To install, tighten to 30 Nm (22 lb-ft).
8. Remove the parking brake control.
 - Position the cable and equalizer through the floorpan.
9. To install, reverse the removal procedure.
 - Adjust the parking brake cable tension. For additional information, refer to **Parking Brake Cable Adjustment** in this article.

PARKING BRAKE CABLE - REAR

REMOVAL AND INSTALLATION

All vehicles

1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to **JACKING AND LIFTING** article.
2. Release the tension on the parking brake cable. For additional information, refer to **Parking Brake Cable Tension Release** in this article.

Convertible vehicles

3. Remove and discard the appropriate support brace rear bolts.
 - To install, tighten to 63 Nm (46 lb-ft).

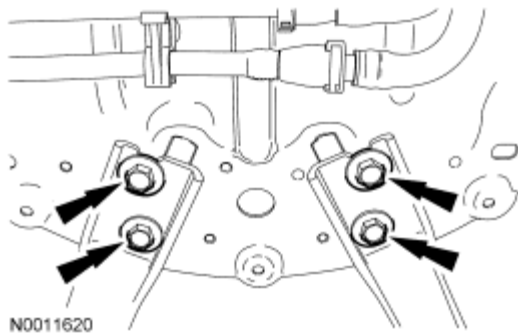


Fig. 10: Locating Rear Support Brace Bolts
Courtesy of FORD MOTOR CO.

4. Remove and discard the appropriate support brace upper bolts.
 - To install, tighten to 63 Nm (46 lb-ft).

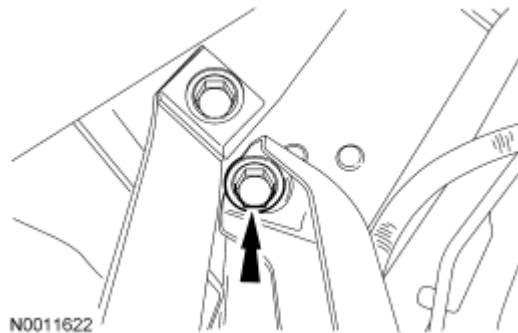


Fig. 11: Locating Support Brace Upper Bolts
Courtesy of FORD MOTOR CO.

5. Remove and discard the appropriate support brace front bolts.
 - To install, tighten to 63 Nm (46 lb-ft).

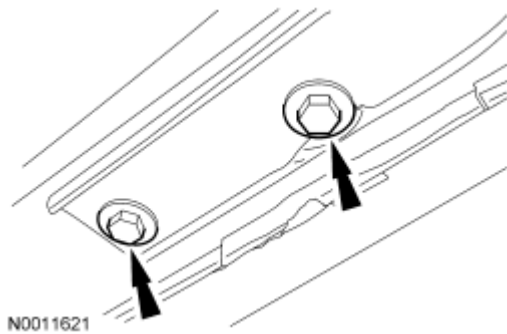


Fig. 12: Locating Appropriate Support Brace Front Bolts
Courtesy of FORD MOTOR CO.

All vehicles

6. Disconnect the appropriate rear parking brake cable from the front parking brake cable at the equalizer, and release the cable from the body bracket.

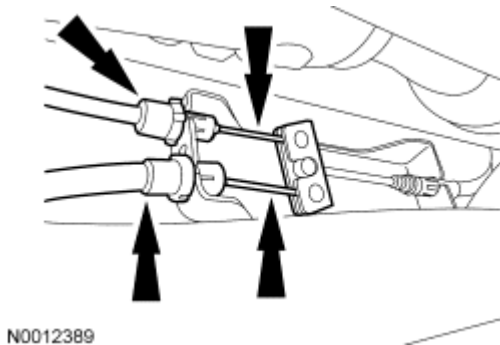


Fig. 13: Locating Appropriate Rear Parking Brake Cable
Courtesy of FORD MOTOR CO.

CAUTION: Verify that the boot is attached to the conduit end fitting and the strand end fitting. A clamp must be secured on the strand end fitting (t-end). There should be no exposed strand at the wheel end of the parking brake cable, brake drag or lock up may occur.

7. Remove the parking brake cable retaining clip from the parking brake cable and disconnect the rear parking brake cable from the brake caliper.

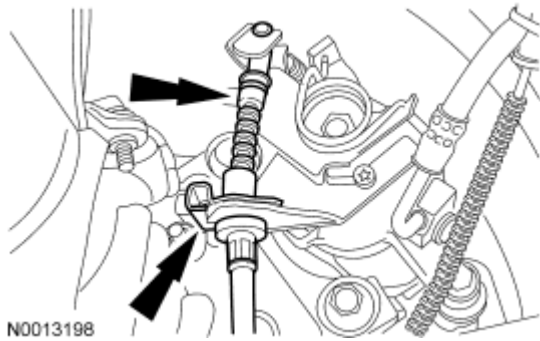


Fig. 14: Locating Parking Brake Cable Retaining Clip
Courtesy of FORD MOTOR CO.

8. Remove the parking brake cable bracket bolt.
 - To install, tighten to 27 Nm (20 lb-ft).
9. If removing the RH cable, remove the parking brake cable crossmember bracket bolt.
 - To install, tighten to 20 Nm (15 lb-ft).
10. To install, reverse the removal procedure.
 - Adjust the parking brake cable tension. For additional information, refer to the **Parking Brake Cable Adjustment** in this article.