

206-05 Parking Brake and Actuation
Diagnosis and Testing

2019 Ranger
Procedure revision date: 05/7/2018

Parking Brake

Symptom Chart(s)

Symptom Chart: Parking Brake and Actuation

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

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

The first indication that something may be wrong in the parking 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.

- Verify the customer concern.
- Visually inspect for obvious signs of mechanical damage.
- If an obvious cause for an observed or reported concern is found, correct the cause.
- If the cause is not visually evident, verify the symptom and go to the Symptom Chart below.

Condition	Possible Sources	Actions
The red brake warning indicator is always illuminated	<ul style="list-style-type: none"> • Parking brake not fully released • Low brake fluid level • Wiring, terminals or connectors • Brake master cylinder inoperative 	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
The parking brake does not apply/hold vehicle	Rear brake shoes out of adjustment	VERIFY rear brake shoe adjustment, ADJUST as necessary. REFER to: Brake Shoe Adjustment (206-02 Drum Brake) .
	<ul style="list-style-type: none"> • Parking brake cable(s) • Parking brake control • Rear brake caliper(s) • Parking brake cable equalizer • Rear brake shoes and/or hardware 	GO to Pinpoint Test A

The parking brake will not release	<ul style="list-style-type: none"> • Parking brake cable(s) • Parking brake control • Rear brake caliper(s) • Parking brake cable equalizer • Rear brake shoes and/or hardware 	GO to Pinpoint Test B
------------------------------------	---	---------------------------------------

Pinpoint Tests

The Parking Brake Does Not Apply Or Does Not Hold Vehicle

Normal Operation and Fault Conditions

When the parking brake control is pulled, the parking brake equalizer pulls on both rear parking brake cables, which are attached to the parking brake actuators, and applies the brake shoes/pads.

PINPOINT TEST A : THE PARKING BRAKE DOES NOT APPLY OR DOES NOT HOLD VEHICLE

A1 CHECK THE PARKING BRAKE CONTROL	
<ul style="list-style-type: none"> • Pull up the parking brake control handle. 	
Does the parking brake control move?	
Yes	GO to A2
No	GO to A3
A2 INSPECT THE FOLLOWING PARKING BRAKE COMPONENTS	
<p>NOTE: Have an assistant pull and release the parking brake to help isolate disconnected cables or cables that do not move.</p> <ul style="list-style-type: none"> • Inspect the following parking brake components. <ul style="list-style-type: none"> • Parking brake control • Front parking brake cable and/or equalizer • Rear parking brake cables • Rear brake caliper actuators • Rear brake shoes and/or hardware 	
Is any damage found or are any components disconnected?	
Yes	CONNECT the component(s) or INSTALL new parking brake component(s) as necessary. ADJUST the parking brake cables. REFER to: Parking Brake Cable Adjustment (206-05 Parking Brake and Actuation, General Procedures).
No	For drum brake vehicles, VERIFY that the rear shoes and brake drums are within

thickness specifications.

REFER to: [Specifications](#) (206-00 Brake System - General Information, Specifications).

If the rear shoes and drums are OK, Adjust the rear brake shoes. REFER to: Brake Shoe Adjustment (206-02 Drum Brake) .

For disc brake vehicles, VERIFY that the rear pads and brake discs are within thickness specifications.

REFER to: [Specifications](#) (206-00 Brake System - General Information, Specifications).

If the rear pads and brake discs are OK, INSTALL new rear brake calipers. REFER to: [Brake Caliper](#) (206-04 Rear Disc Brake, Removal and Installation).

A3 ISOLATE THE PARKING BRAKE CONTROL AND FRONT PARKING BRAKE CABLE

- Disconnect the front parking brake cable from the rear parking brake cable equalizer.
- Pull up the parking brake control handle.

Does the parking brake control handle move?

Yes	For drum brake vehicles GO to A4 For disc brake vehicles GO to A5
No	INSTALL a new parking brake control or a new front parking brake cable as necessary. REFER to: Parking Brake Control (206-05 Parking Brake and Actuation, Removal and Installation). REFER to: Parking Brake Front Cable - Vehicles Built From: 01-03-2013, Vehicles With: Rear Drum Brakes (206-05 Parking Brake and Actuation) . REFER to: Parking Brake Front Cable (206-05 Parking Brake and Actuation, Removal and Installation).

A4 ISOLATE THE REAR PARKING BRAKE CABLES (DRUM BRAKES)

- Disconnect the rear parking brake cable at the affected wheel end(s).
- While holding the cable conduit, attempt to slide the cable inside the conduit.

Does the cable slide freely inside the conduit?

Yes	The parking brake system is operating normally at this time. The concern may have been caused by a seized or binding rear brake component. INSPECT the rear brake components. INSTALL new component(s) as necessary. If the rear brake components are OK, CLEAN and LUBRICATE the brake backing plate. REFER to: Brake Shoes (206-02 Drum Brake) . ADJUST the parking brake cables. REFER to: Parking Brake Cable Adjustment (206-05 Parking Brake and Actuation, General Procedures).
No	INSTALL new rear parking brake cable(s). REFER to: Parking Brake Rear Cables (206-05 Parking Brake and Actuation, Removal and Installation).

- Disconnect the rear parking brake cable from the rear brake caliper at the affected wheel end(s).
- While holding the cable conduit, attempt to slide the cable inside the conduit.

Does the cable slide freely inside the conduit?

Yes	The parking brake system is operating normally at this time. INSPECT the rear brake components on the affected wheel end(s). INSTALL new rear brake components as necessary and ADJUST the parking brake cables. REFER to: Parking Brake Cable Adjustment (206-05 Parking Brake and Actuation, General Procedures).
No	INSTALL new rear parking brake cables. REFER to: Parking Brake Rear Cables (206-05 Parking Brake and Actuation, Removal and Installation).

Parking Brake Will Not Release

Normal Operation and Fault Conditions

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

PINPOINT TEST B : PARKING BRAKE WILL NOT RELEASE

B1 CHECK THE PARKING BRAKE CONTROL

- Apply and release the parking brake control.

Does the parking brake control fully release?

Yes	GO to B2
No	INSTALL a new parking brake control. REFER to: Parking Brake Control (206-05 Parking Brake and Actuation, Removal and Installation).

B2 ISOLATE THE FRONT BRAKE CABLE

- Disconnect the front parking brake cable from the rear parking brake cable equalizer.

Do the rear wheel(s) spin freely?

Yes	INSTALL a new front parking brake cable. REFER to: Parking Brake Front Cable - Vehicles Built From: 01-03-2013, Vehicles With: Rear Drum Brakes (206-05 Parking Brake and Actuation) . REFER to: Parking Brake Front Cable (206-05 Parking Brake and Actuation, Removal and Installation).
No	For drum brakes vehicles GO to B3

For disc brake vehicles GO to [B4](#)

B3 ISOLATE THE REAR PARKING BRAKE CABLES (DRUM BRAKES)

- Disconnect the rear parking brake cable from the rear extension cable at the affected wheel end(s).

Do the wheel(s) spin freely?

Yes	INSTALL new rear parking brake cable(s). REFER to: Parking Brake Rear Cables (206-05 Parking Brake and Actuation, Removal and Installation).
No	The parking brake system is operating normally at this time. The concern may have been caused by a seized or binding rear brake component. INSPECT the rear brake components. INSTALL new component(s) as necessary. If the rear brake components are OK, CLEAN and LUBRICATE the brake backing plate. REFER to: Brake Shoes (206-02 Drum Brake) . ADJUST the parking brake cables. REFER to: Parking Brake Cable Adjustment (206-05 Parking Brake and Actuation, General Procedures).

B4 ISOLATE THE REAR PARKING BRAKE CABLES (DISC BRAKES)

- Disconnect the rear parking brake cable from the rear brake caliper at the affected wheel end(s).

Do the wheel(s) spin freely?

Yes	INSTALL new rear parking brake cables. REFER to: Parking Brake Rear Cables (206-05 Parking Brake and Actuation, Removal and Installation).
No	INSPECT the rear brake components on the affected wheel end(s). INSTALL new rear brake components as necessary and ADJUST the parking brake cables. REFER to: Parking Brake Cable Adjustment (206-05 Parking Brake and Actuation, General Procedures).

