

SECTION 206-00: Brake System — General Information
DIAGNOSIS AND TESTING

2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Pinpoint Tests

Pinpoint Test A: Vibration When the Brakes are Applied

Normal Operation

During moderate to heavy braking, noise from the Hydraulic Control Unit (HCU) and pulsation in the brake pedal can be observed. Pedal pulsation coupled with noise during heavy braking or on loose gravel, bumps, wet or snowy surfaces is acceptable and indicates correct functioning of the ABS. Pedal pulsation or steering wheel nibble when the brakes are applied (frequency is proportioned to the vehicle speed) indicates a concern with a brake or suspension component.

PINPOINT TEST A: VIBRATION WHEN THE BRAKES ARE APPLIED

Test Step	Result / Action to Take
A1 ROAD TEST THE VEHICLE — LIGHT BRAKING	
- Road test the vehicle. Warm the brakes by slowing the vehicle from 80 to 32 km/h (50 to 20 mph) using light brake force. At highway speeds of 89-97 km/h (55-60 mph), apply the brake using light pedal force. Is there a vibration/shudder felt in the steering wheel, seat or brake pedal?	Yes GO to A4. No GO to A2.
A2 ROAD TEST THE VEHICLE — MODERATE TO HEAVY BRAKING	
- Road test the vehicle. At highway speeds of 89-97 km/h (55-60 mph), apply the brake using a moderate to heavy pedal force. Is there a vibration/shudder?	Yes GO to A3. No The concern is not present at this time.
A3 CHECK ABS OPERATION	
NOTE: During moderate to heavy braking, noise from the HCU and pulsation in the brake pedal can be observed. Pedal pulsation coupled with noise during heavy braking or on loose gravel, bumps, wet or snowy surfaces is acceptable and indicates correct operation of the ABS. Pedal pulsation or steering wheel nibble with the frequency proportional to vehicle speed indicates a concern with a brake or suspension component. - Road test the vehicle and apply the brakes on a dry, firm surface, then apply the brakes on a wet, snowy or loose surface (such as gravel). Is the vibration/shudder only present on a wet, snowy or loose surface?	Yes This is a normal operating condition of the ABS. No GO to A5.
A4 ISOLATE BRAKE VIBRATION	
NOTE: This test is not applicable to vehicles with drum-in-hat type parking brakes. For vehicles with drum-in-hat parking brakes, proceed	Yes GO to A7.

to the next test step. For all other vehicles, apply the parking brake to identify if the problem is in the front or rear brake. • Apply the parking brake to identify if the problem is in the front or rear brake. At highway speeds of 89-97 km/h (55-60 mph), lightly apply the parking brake until the vehicle slows down. Release the parking brake immediately after the test. • Is there a vibration/shudder?	No GO to A5.
A5 CHECK THE FRONT SUSPENSION	
• Check the front suspension. Refer to Section 204-00. • Are all the suspension components in satisfactory condition?	Yes GO to A6. No REPAIR or INSTALL new components as necessary. TEST the system for normal operation.
A6 CHECK THE FRONT BRAKE DISCS	
• Inspect the front brake discs. Refer to Brake System Inspection in this section. • Road test the vehicle. • Is the vibration/shudder present?	Yes GO to A7. No The concern has been repaired.
A7 CHECK THE REAR SUSPENSION	
• Check the rear suspension. Refer to Section 204-00. • Are all the suspension components in satisfactory condition?	Yes INSPECT the rear brake discs. REFER to Brake System Inspection in this section. No REPAIR or INSTALL new components as necessary. TEST the system for normal operation.

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