

Wheel Bearing Inspection

Special Tool(s) / General Equipment

	100-D002 (D78P-4201-B) Dial Indicator Gauge with Holding Fixture
---	---

Inspection

All vehicles

1. Inspect the tires for cupping. A tire with cupping wear can duplicate a bearing noise.
Refer to: Wheels and Tires (204-04A Wheels and Tires, Diagnosis and Testing).
2. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: Jacking and Lifting - Overview (100-02 Jacking and Lifting, Description and Operation).

All vehicles

3. **NOTE:** Make sure the wheel rotates freely and the brake pads are retracted sufficiently to allow movement of the tire and wheel assembly.

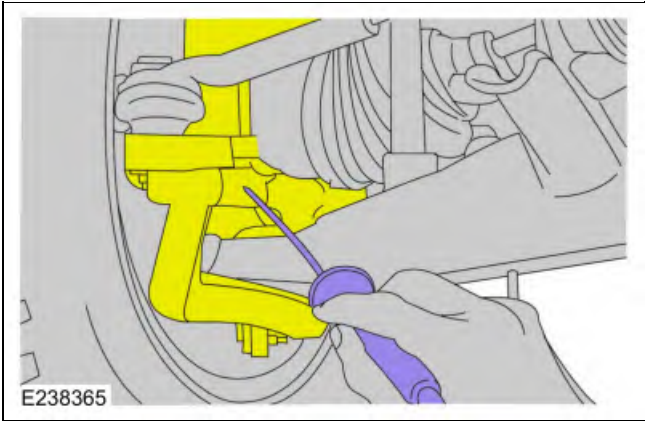
Grasp each front tire at the top and bottom and move the wheel inward and outward while lifting the weight of the tire off the front wheel bearing.
4. If the tire and wheel (hub) is loose on the wheel spindle, adjust the front wheel bearings.
Refer to: Wheel Bearing Adjustment - F-250/F-350 (204-01A Front Suspension - RWD, General Procedures).

All vehicles

5. **NOTE:** An assistant will be needed for this procedure.

Carry out the following steps:
 - Rotate the hublocks to the locked position.
 - Shift the transfer case to an engaged position.
 - With the vehicle in DRIVE, run the vehicle to 40 km/h (25 mph).
6. **NOTE:** If the vehicle is equipped with a limited-slip front axle, both the wheels will be turning. Evaluate both wheels at this time, then continue to Step 8.

Evaluate the front wheel that is turning.
 - Place the stethoscope on the knuckle near the wheel bearing.
 - Make a mental note of the sound.
 - Using the brakes, stop the wheels from turning.



7. **NOTE:** If the vehicle is equipped with a limited-slip front axle, do not hold the wheel. Evaluate both wheels simultaneously. Go to Step 8.

Evaluate the other front wheel.

- Place the stethoscope on the knuckle near the wheel bearing.
- Make a mental note of the sound.
- Using the brakes, stop the wheels from turning.



8. Compare the results.

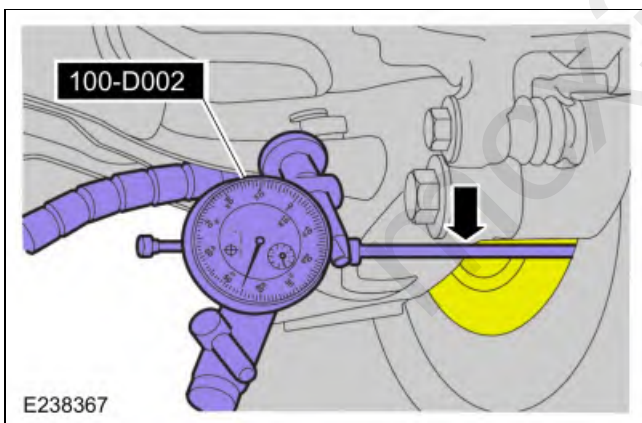
- If one side sounds louder than the other, install a new bearing on the louder side.
- If both sides sound equally loud, go to Step 9.
- If both sides sound similar (not loud or noisy), carry out a wheel bearing end play check.

9. **NOTE:** Make sure the wheel rotates freely.

NOTE: Rotate the hublocks to the unlocked position.

Carry out the following steps for the wheel bearing end play setup:

- Install the Dial Indicator Gauge With Holding Fixture to the knuckle.
Use Special Service Tool: 100-D002 (D78P-4201-B) Dial Indicator Gauge with Holding Fixture.
- Place the probe on the brake disc where the splash shield has a V opening.
- Make sure the probe can move in a lateral direction.
- Tighten the neck of the probe.

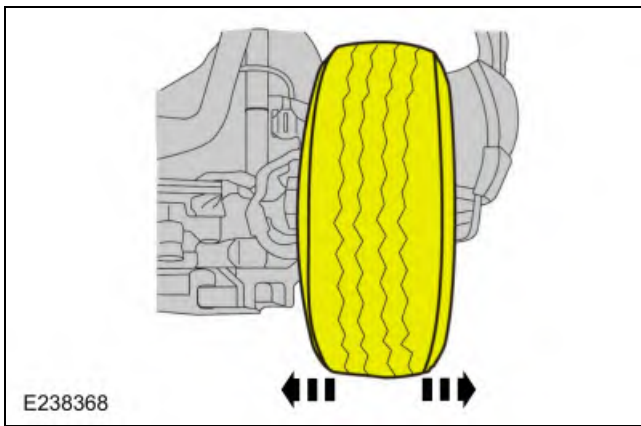


10. Carry out the following steps for the wheel bearing end play:

- Push the wheel inward at the 6 o'clock position.
- Set the Dial Indicator Gauge With Holding Fixture to 0.
- Pull the wheel outward at the 6 o'clock position.
- Record the measurement.
- Repeat this step 3 to 5 times.

If the wheel bearing end play is greater than 0.13 mm (0.005 in), install a new wheel bearing.

If the wheel bearing end play is less than 0.13 mm (0.005 in), the wheel bearing is within specification. Go to the next step.



11. Remove the front wheel bearing wheel hub.
Refer to: Front Wheel Bearing and Wheel Hub (204-01B Front Suspension - 4WD, Removal and Installation).
12. Carry out the following steps for the needle bearing visual inspection:
 - With the wheel hub on a bench, visually inspect the needle bearing.
 - Check for any rust, wear or damage.
 - Check the condition of the rollers.
 - Make sure there is a small amount of grease on the needle bearing.

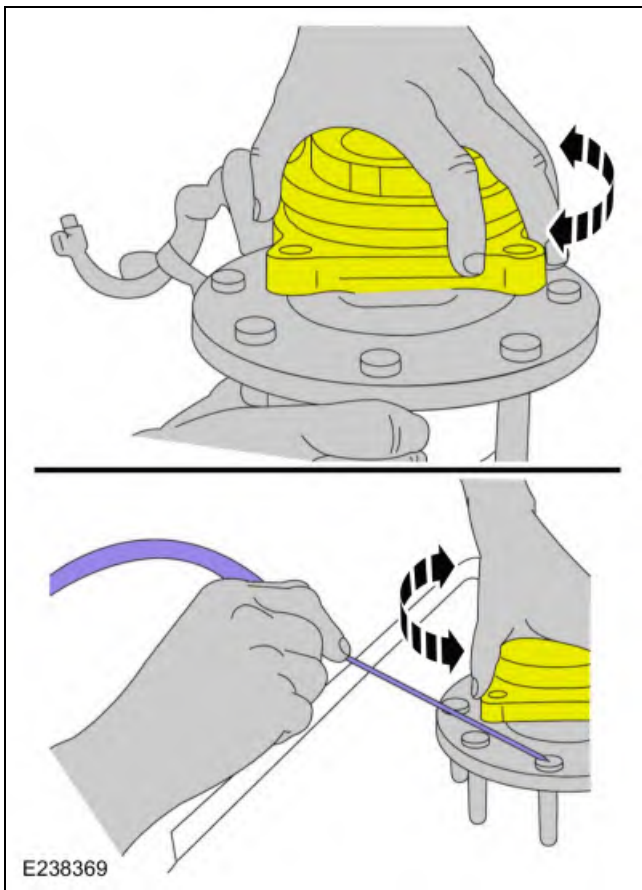
If the needle bearing has rust, is worn or damaged, install a new needle bearing.
If the needle bearing looks OK, go to the next step.

13. Carry out the following steps for the wheel bearing roughness inspection:
 - With the wheel hub on a bench, rotate the outer flange of the wheel bearing while applying downward pressure.

If the wheel bearing rotates freely, without roughness, check the bearing for noise.
If the wheel bearing does not rotate freely, install a new bearing.

- Rotate the outer flange of the wheel bearing while applying downward pressure. Using a stethoscope, check the wheel bearing for noise.

If the wheel bearing rotates freely, without noise, the wheel bearing is OK. Conduct a diagnosis on other suspect components or systems.
If the wheel bearing does not rotate without noise, install a new bearing.



14. Install the front wheel bearing wheel hub.
Refer to: Front Wheel Bearing and Wheel Hub (204-01B Front Suspension - 4WD, Removal and Installation).