

Wheels/Tires - Steering Wheel Nibble/Vibration

[Notes](#)

TSB 08-24-2

12/08/08

VIBRATION DIAGNOSTICS - STEERING WHEEL
NIBBLE - TIRE WHEEL RUNOUT AND BALANCE

FORD:

2005 Excursion, Explorer Sport Trac
2005-2008 Escape, Expedition, Explorer,
F-150, F-Super Duty, Ranger
2006-2008 F-53 Motorhome Chassis
2007-2008 Explorer Sport Trac

LINCOLN:

2005-2008 Navigator
2006-2008 Mark LT

MERCURY:

2005-2008 Mariner, Mountaineer

This article supersedes TSBs 07-11-3, 07-10-8, and 07-4-5 to update the Part List and Service procedure.

ISSUE

Various Ford, Mercury and Lincoln vehicles may exhibit a vibration / steering wheel nibble above 50 MPH (80 Km/h) which may be associated to a wheel and tire vibration.

ACTION

Follow the Service Procedure steps to correct the condition.



Labor Operation Description	Vehicles	Labor Operation Code	Time	
Group 1 - Vibration Diagnostic (If required, a group 1 labor op may be used with groups 2, 3, 4, 5 and 6)	Time includes installation and removal of electronic vibration test equipment, performing a test drive to eliminate temporary tire flat spotting, and recording vibration readings during test drive. If concern is resolved, return vehicle to customer.	2005-2008 F150, Expedition, Navigator, Escape, Mariner, Explorer, Mountaineer, F-Super Duty 250-350 (SRW), or Ranger 2006-2008 Mark LT 2005, 2007-2008 Explorer Sport Trac 2005 Excursion	0.7	
	2005-2008 F-Super Duty 350 (DRW) 2005-2008 F-Super Duty 450-550 (DRW) 2006-2008 F53 (DRW)	082402A		
Group 2 - Check Run Out / Road Force and Balance Tires (If required, a group 2 labor op may be used with groups 1, 3, 4, 5 and 6)	Time includes removing wheel / tire assemblies from vehicle, marking high spot of Road Force® / radial run out, balancing wheel / tire assemblies, and optimizing hub to wheel clearance when installing wheel / tire assemblies back onto vehicle.	2005-2008 F150, Expedition, Navigator, Escape, Mariner, Explorer, Mountaineer, F-Super Duty 250-350 (SRW), or Ranger 2006-2008 Mark LT 2005, 2007-2008 Explorer Sport Trac 2005 Excursion	0.6	
		2005-2008 F-Super Duty 350 (DRW)	082402B (4 tires)	1.1
		2005-2008 F-Super Duty 450-550 (DRW)	082402C (6 tires)	1.5
		2006-2008 F53 (DRW)	082402C (6 tires)	1.5
Group 3 - Match Mount Tire / Wheel Assemblies (If required, a group 3 labor op may be used with groups 1, 2, 4, 5 and 6)	Time includes Match Mounting tire(s) to wheel(s) to reduce Road Force® / radial run out. Select only 1 labor operation to reflect the number of tires which were match mounted.	2005-2008 F150, Expedition, Navigator, Escape, Mariner, Explorer, Mountaineer, F-Super Duty 250-350 (SRW), or Ranger 2006-2008 Mark LT 2005, 2007-2008 Explorer Sport Trac 2005 Excursion	0.2	
			0.4	
			0.6	
			0.8	
		2005-2008 F-Super Duty 350 (DRW)	0.2	
			0.4	
			0.6	
			0.8	
			1.0	
		2005-2008 F-Super Duty 450-550 (DRW) 2006-2008 F-53 (DRW)	1.2	
			0.4	
			0.8	
			1.2	
			1.6	
			2.1	
2.5				

Do not use these labor operations with any other labor operations outside of this TSB.

TB-9244-D

Figure 1

Zoom

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Labor Operation Description	Vehicles	Labor Operation Code	Time								
Group 4 - Replace Tire(s) and/or Wheel(s) (If required, a group 4 labor op may be used with groups 1, 2, 3, 5 and 6)	2005-2008 F150, Expedition, Navigator, Escape, Mariner, Explorer, Mountaineer, F-Super Duty 250-350 (SRW), or Ranger 2006-2008 Mark LT 2005, 2007-2008 Explorer Sport Trac 2005 Excursion	082402K (1 tire)	0.2								
		or 082402L (2 tires)	0.3								
		or 082402M (3 tires)	0.5								
		or 082402N (4 tires)	0.6								
	Time includes replacing tire(s) and/or wheel(s) Select only 1 labor operation to reflect the number of tires or wheels which were replaced. Use incremental M-Time if TPMS sensor band replacement is necessary with wheel replacement (excludes DRW vehicles).	2005-2008 F-Super Duty 350 (DRW)	082402K (1 tire)	0.2							
			or 082402L (2 tires)	0.4							
			or 082402M (3 tires)	0.6							
			or 082402N (4 tires)	0.7							
			or 082402P (5 tires)	0.9							
	2005-2008 F-Super Duty 450-550 (DRW) 2006-2008 F53 (DRW)	or 082402Q (6 tires)	1.1								
		082402K (1 tire)	0.3								
		or 082402L (2 tires)	0.6								
or 082402M (3 tires)		0.9									
or 082402N (4 tires)		1.2									
or 082402P (5 tires)		1.5									
or 082402Q (6 tires)	1.7										
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TB-9245-B											

Figure 2

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SERVICE PROCEDURE

The following revisions have been made. The road test has been simplified to include 15 minutes of driving rather than a 20 mile test drive. The requirement to bring an assistant along on the road test has been eliminated. Recordings should be made using the vibration analyzer and then review recordings following the test drive. The step to inspect the Integrated Wheel Ends (IWE) has also been

eliminated.

1. Long term temporary flat spotting can develop when a vehicle is stored without driving. Some initial tire and wheel vibration issues (such as flat spotting) will correct themselves after the [tires](#) have been in service for 200 miles (320 km). Confirm vehicle tires have been in service a minimum of 200 miles (320 km) to remove long term temporary flat spotting. Do not continue with this procedure if tires do not meet this requirement.
2. Refer to Workshop Manual (WSM), Section 100-04 to determine if a wheel and tire speed (9-14.5 HZ) vibration is present.

- a. If the vibration is wheel and tire speed proceed Step 3.
- b. If not, follow the diagnostics provided in the WSM, Section 100-04.

NOTE THE VEHICLE SHOULD BE DRIVEN 15 MINUTES TO REMOVE TEMPORARY FLAT SPOTTING. SHORTER TEST DRIVES WILL RESULT IN INACCURATE RUN OUT OR ROAD FORCE(R) READINGS. IF THE VIBRATION GOES AWAY DURING THE TEST DRIVE, THE CONCERN IS DUE TO TEMPORARY TIRE FLAT SPOTTING WHICH IS A NORMAL TIRE CONDITION. NO FURTHER DIAGNOSIS OR REPAIRS SHOULD BE PERFORMED.

3. If tire and wheel vibration persists after the 15 minute road test, then complete wheel and tire radial run-out / Road Force® component test in the WSM, Section 204-04 to match mount and/or balance tire and wheel assemblies.

NOTE THE MATCH MOUNTING PROCEDURE IS MORE EFFECTIVE WHEN USING HUNTER ROAD FORCE(R) MEASUREMENT EQUIPMENT. THERE IS A WEBSITE AVAILABLE (WWW.G5P9700.COM) TO LOCATE THE NEAREST FACILITY THAT HAS THIS TYPE OF EQUIPMENT. ONLY USE A STANDARD BALANCER AND MANUALLY CHECK RUN OUT WHEN ABSOLUTELY NECESSARY.

NOTE WHEEL-TO-HUB OPTIMIZATION WHEEL-TO-HUB OPTIMIZATION IS IMPORTANT. CLEARANCE BETWEEN THE WHEEL AND HUB CAN BE USED TO OFFSET OR NEUTRALIZE THE ROAD FORCE(R) OR RUN-OUT OF THE WHEEL AND TIRE ASSEMBLY. FOR EVERY 0.001" (0.0254 MM) OF WHEEL-TO-HUB CLEARANCE, THE ROAD FORCE(R) CAN BE AFFECTED BETWEEN 1-3 LBS (0.45-1.36 Kg). DEPENDING ON THE TIRE STIFFNESS.

4. When installing tire and wheel assemblies follow WSM, Section 204-04, Wheel-to-Hub Optimization procedure. There are unique procedures for single rear wheel vehicles, dual rear [wheels](#) vehicles, and vehicles with conical shaped [lug nuts](#).

NOTE THE [SPARE TIRE](#) SHOULD NOT BE USED AS A REPLACEMENT TIRE.

F-150 and MARK LT ONLY - If the vibration still persists continue to Step 5.

5. Perform the following based on remaining symptom:

- a. If vibration still exists at 50-60 MPH (80-97 Km/h) (9-11 Hz), condition may be due to vehicle sensitivity or road inputs. Obtain Frame Damper Kit and refer to the instruction sheet included in the kit for installation.

NOTE THE DAMPER KIT WILL NOT HELP A STEERING WHEEL NIBBLE CONDITION OR A DRIVELINE VIBRATION (25-45 HZ).

NOTE CERTAIN VEHICLES ARE ALREADY EQUIPPED WITH THE FRAME DAMPER

PART NUMBER	PART NAME
4L3Z-5D008-AA	Frame Damper Kit (2004-2005 F-150 And 2006 Mark LT Built On Or Before 8/26/2005)
6L3Z-5D008-B	Frame Damper Kit (2006-2008 F-150 And 2006-2008 Mark LT Built After 8/26/2005)

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Parts Block