Vibration Diagnostics Checklist

**Start**

1. **Gather Info**
   - When did vibration start?__________________________  Speed dependent?__________________________
   - Where is vibration felt?__________________________  RPM dependent?__________________________
   - What road conditions?____________________________  Noise?__________________________
   - Under load or high torque conditions?_______________  Suspension modified recently?______________
   - During acceleration/deceleration___________________  Lube clean and at proper level______________

2. **Road Test**
   - Have vehicle driver recreate complaint condition, if possible
   - Leave trailer attached
   - Run up to suspected RPM and put transmission in neutral

3. **Simulate Conditions**
   - Speed
   - RPM
   - Gear Position
   - Coast
   - Under power
   - Loaded / Unloaded

4. **Record Findings**
   - Speed__________________________
   - RPM__________________________
   - Gear position__________________
   - Coast________________________
   - Under power___________________
   - Loaded / Unloaded______________

5. **Stationary Inspection**
   - Tires
   - Rims
   - Dented driveshaft tubing
   - Engine supports
   - Driveshaft center bearing

6. **Vibrations While Stationary?**
   - See Flowchart on Reverse Side

**Other Notes**

1-800-826-4357
Vibration Diagnostics

Important: Use factory service manuals and procedures and refer to all applicable safety precautions when servicing vehicles. This document is intended to assist with drivetrain vibration diagnosis. It does not guarantee an immediate solution nor does it guarantee warranty responsibility or reimbursement. Refer to Roadranger.com for Product Warranty Statements, Warranty Manual, and Warranty Guidelines.

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   - Have vehicle driver recreate complaint condition, if possible.
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5. Stationary Inspection
   - Tires
   - Rims
   - Dented driveshaft tubing
   - Engine supports
   - Transmission supports
   - Driveshaft center bearing

6. Vibration Diagnosis
   - When did vibration start?
   - Where is vibration felt?
   - What road conditions?
   - Under load or high torque conditions?
   - During acceleration/deceleration?
   - RPM dependent?
   - Noise?
   - Suspension modified recently?
   - Lube clean and at proper level?

   - Perform visual inspection and use Eaton Driveline Angle Analyzer (DAA).
   - Look for loose:
     - U-joint bearing cups and tensioners
     - Bearing strap
     - Flange yoke / companion flange
     - Valve-mounted damper
     - Parking brake
     - Center bearing
     - Transmission rear support
     - Driveshaft for damage / misalignment
     - Driveshaft slip spline (wear / bottoming / inadequate engagement)
     - Cab mounts / air ride system

   - Remove all drive axle shafts and lock in power divider.
   - Run truck in same condition as when complaint occurred.
   - Problem is related to the wheel hub. Take known good wheel assembly and test replacement from wheel to test wheel.

   - Problem is related to the inter-axle shaft.
   - Contact Roadranger Support Team: 1-800-826-4357.