

Automotive Technology 6th Edition

Chapter 132 – Vibration and Noise Diagnosis and Correction

Lesson Plan



CHAPTER SUMMARY:

1. Causes of vibration and noise, test-drive, neutral run-up test, and vibration during breaking
 2. Vibration speed ranges, vibration frequency, and correcting driveline angles
 3. Checking driveshaft runout, measuring driveshaft U-joint phasing, and checking companion flange runout
 4. Balancing the driveshaft, noise diagnosis, and noise correction
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OBJECTIVES:

1. List the possible vehicle components that can cause a vibration or noise.
 2. List the procedures for a test-drive and neutral run-up test for vibration/noise problems.
 3. Explain the vibration speed ranges and how to determine the frequency of the vibration.
 4. Explain how to check driveline angles and driveshaft runout.
 5. Discuss the methods for measuring driveshaft U-joint phasing and balancing the driveshaft.
 6. Diagnose and correct noise problems.
 7. This chapter will help prepare for Suspension and Steering (A4) ASE certification test content area “C” (Related Suspension and Steering Service).
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>)

1. **Task Sheet ASE (A3-D-5) P-2, (A4-A-1) P-1, (A4-D-5) P-2:** Noise and Vibration Diagnosis
 2. Chapter PowerPoint
 3. Chapter Crossword Puzzle and Word Search
 4. Animations: See list at the end of the lesson plan.
 5. Videos: Driveline Vibrations and Pinion Angles (time 8:35) and Driveshaft Angle and Phasing (time 2:39)
 6. Videos: On Car Propeller Shaft (Driveshaft) Runout Measurements (time 9:10)
 7. Videos: Pinion Flange Runout Measurements (time 17:59)
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ACTIVITIES:

1. **Task Sheet ASE (A3-D-5) P-2, (A4-A-1) P-1, (A4-D-5) P-2:** Have students complete Noise and Vibration Diagnosis Task Sheet.
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ASSIGNMENTS:

1. Chapter crossword and word search puzzles.
 2. Complete end of chapter 10 question quiz.
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CLASS DISCUSSION:

1. Review and group discussion chapter Frequently Asked Questions and Tech Tips sections.
 2. Review and group discussion of the five (5) chapter Review Questions.
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NOTES AND EVALUATION:



Animations: (at <http://www.jameshalderman.com>)

RWD Drivetrain
Honda 4-Speed Automatic Transaxle
Park
Power Flow, 6T70/6F50
Power Flow, Allison 1000, 5-Speed
Power Flow, Lepelletier Six-Speed
Power Flow, Overdrive Four-Speed #1
Power Flow, Overdrive Four-Speed #2
Power Flow, Overdrive Four-Speed #3
Power Flow, Ravigneaux Four-Speed
Power Flow, Simpson Geartrain
Power Flow, Simpson Geartrain + Overdrive
Power Flow, Two-Mode Hybrid Transmission
Power Flow, Toyota A 750E
Power Flow, ZF 8HP
PGS 1, Reduction
PGS 2, Rev Reduction
PGS 3, Reduction
PGS 4, Rev OD
PGS 5, OD
PGS 6, OD
PGS 7, Direct Drive