

Automotive Technology 6th Edition

Chapter 125 – Alignment Diagnosis and Service

Lesson Plan



CHAPTER SUMMARY:

1. Purpose of alignment, prealignment correction techniques, and prealignment checks
 2. Lead/pull, memory steer, torque steer, alignment specifications, and alignment setup procedures
 3. Measuring camber, caster, SAI, toe, and TOOT
 4. Specifications versus alignment readings and checking for bent struts, spindles, or control arms
 5. Checking frame alignment of front-wheel-drive vehicles and types of alignments
 6. Adjusting rear camber and guidelines for adjusting front camber/SAI and included angle
 7. Front camber/caster adjustment methods and adjusting front camber/caster
 8. Setting toe, centering the steering wheel, and tolerance adjustment procedure
 9. Aligning electronic suspension vehicles and aligning modified vehicles
 10. Hidden structural damage diagnosis and reset steering angle sensor (SAS)
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OBJECTIVES:

1. List the various checks that should be performed before aligning a vehicle.
 2. Explain the diagnosis of lead, memory steer, and torque steer.
 3. Describe alignment specifications and setup procedures.
 4. Discuss how to measure camber, caster, SAI, toe, and TOOT.
 5. Describe how to perform a pre-alignment inspection.
 6. List the types of alignments.
 7. Explain how to adjust the rear camber, front camber, SAI, and included angle.
 8. Describe how to set the toe, center the steering wheel, and adjust tolerance.
 9. Explain the method of aligning electronic-suspension vehicles and modified vehicles.
 10. Describe how to diagnose hidden structural damage.
 11. Describe how to reset the steering angle sensor.
 12. This chapter will help prepare for ASE Suspension and Steering (A4) certification test content area “D” (Wheel Alignment Diagnosis, Adjustment, and Repair).
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.

1. Task Sheet ASE (A4-E-2) P-1: Pre-Alignment Inspection
 2. Task Sheet ASE (A4-E-1) P-1: Diagnose Alignment-Related Faults
 3. Task Sheet ASE (A4-E-3) P-1: Alignment Angle Readings
 4. Task Sheet ASE (A4-E-4) P-2, (A4-E-5) P-2: TOOT and SAI
 5. Task Sheet ASE (A4-E-6) P-1, (A4-E-9) P-2: Four-Wheel Alignment
 6. Task Sheet ASE (A4-E-7) P-2, (A4-E-8) P-3: Diagnostic Alignment Angles
 7. Chapter PowerPoint
 8. Chapter Crossword Puzzle and Word Search
 9. Videos: [\(A4\) Suspension and Steering Videos](#)
 10. Animations: [\(A4\) Suspension and Steering Animations](#)
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ACTIVITIES:

1. **Task Sheet ASE (A4-E-2) P-1:** Have students complete Pre-Alignment Inspection Task Sheet.
 2. **Task Sheet ASE (A4-E-1) P-1:** Have students complete Diagnose Alignment-Related Faults Task Sheet.
 3. **Task Sheet ASE (A4-E-3) P-1:** Have students complete Alignment Angle Readings Task Sheet.
 4. **Task Sheet ASE (A4-E-4) P-2, (A4-E-5) P-2:** Have students complete TOOT and SAI Task Sheet.
 5. **Task Sheet ASE (A4-E-6) P-1, (A4-E-9) P-2:** Have students complete Four-Wheel Alignment Task Sheet.
 6. **Task Sheet ASE (A4-E-7) P-2, (A4-E-8) P-3:** Have students complete Diagnostic Alignment Angles 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: