**Automotive Chassis Systems 8th Edition**

**Chapter 36 –** **Alignment Diagnosis and Service**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. Purpose of an 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, Adjusting Front Camber/Caster and Setting Toe

8. 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 prealignment inspection.

6. List the types of alignments.

7. Explain how to adjust front camber and caster and rear camber.

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.

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**RESOURCES:** [(All resources may be found at jameshalderman.com)](https://jameshalderman.com/)

1. Task Sheet: Pre-Alignment Inspection

2. Task Sheet: Diagnose Vehicle Alignment-Related Faults

3. Task Sheet: Alignment Angle Readings

4. Task Sheet: TOOT and SAI

5. Task Sheet: Four-Wheel Alignment

6. Task Sheet: Diagnostic Alignment Angles

7. [Crossword Puzzle and Word Search](https://jameshalderman.com/a4_puzzles_lib_page/)

8. [Videos: ASE A4 Suspension and Steering](https://jameshalderman.com/a4_vid_lib_page/)

9. [Animations: ASE A4 Suspension and Steering](https://jameshalderman.com/a4_anim_lib_page/)

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**ACTIVITIES:**

1. Task Sheet: Pre-Alignment Inspection

2. Task Sheet: Diagnose Vehicle Alignment-Related Faults

3. Task Sheet: Alignment Angle Readings

4. Task Sheet: TOOT and SAI

5. Task Sheet: Four-Wheel Alignment

6. Task Sheet: Diagnostic Alignment Angles

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**ASSIGNMENTS:**

1. Chapter crossword and word search puzzles from the website.

2. Complete end of chapter quiz from the textbook.

3. Complete multiple choice and short answer quizzes downloaded from the website.

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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:**

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