

Automotive Technology 6th Edition

Chapter 124 – Wheel Alignment Principles

Lesson Plan



CHAPTER SUMMARY:

1. Definition of a wheel alignment, alignment-related problems, camber, caster, and toe
 2. Steering axis inclination, included angle, scrub radius, and turning radius
 3. Setback, thrust angle, tracking, and four-wheel alignment
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OBJECTIVES:

1. Define wheel alignment and discuss alignment-related problems.
 2. Define camber, caster, toe, and SAI.
 3. Discuss included angle, scrub radius, turning radius, setback, thrust angle, and tracking.
 4. explain the importance of four-wheel alignment.
 5. 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>)

1. **Task Sheet ASE (A4-E-2) P-1:** Alignment Specification
 2. Chapter PowerPoint
 3. Chapter Crossword Puzzle and Word Search
 4. Animations: Toe-in - RWD Vehicle, Toe-out - FWD Vehicle, and Turning Radius
 5. Animations: Wheel Alignment - Camber, Wheel Alignment, - Caster, and Wheel Alignment - Setback
 6. Animations: Wheel Alignment - Thrust Angle, Wheel Alignment - Toe, and Wheel Alignment - Track
 7. Animations: Wheel Alignment, Steering Axis Inclination & Included Angle
 8. Animations: Wheel Alignment, Turning Radius
 9. Videos: See list at the end of the lesson plan.
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ACTIVITIES:

1. **Task Sheet ASE (A4-E-2) P-1:** Have students complete Alignment Specification 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:

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

Alignment angles (time 2:56)

Alignment (time 2:12)

Steering angles part 1 (time 17:34)

Steering angles part 2 (time 26:05)

Wheel alignment (time 2:41)

Caster (time 1:14)

Camber (time 5:16)

Camber action (time 0:54)

Alignment Importance (time 4:01)

Camber (time 1:37)

Alignment (time 3:16)

Ackerman steering (time 3:44)

Steering axis inclination (time 2:33)

Caster (time 2:15)

Alignment (time 8:41)

Alignment (time 4:01)

Vehicle handling (time 20:17)

Toe in (time 5:00)