

Automotive Technology 6th Edition

Chapter 25 – Turbocharging and Supercharging

Lesson Plan



CHAPTER SUMMARY:

1. Forced induction principles
 2. Superchargers and turbochargers
 3. Boost control, turbocharger failures, and nitrous oxide
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OBJECTIVES:

1. Discuss airflow requirements and volumetric efficiency of engines.
 2. Explain forced induction principles.
 3. Discuss superchargers
 4. Discuss turbochargers and turbocharger failures.
 5. Explain boost control. Describe the purpose of a nitrous oxide system.
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>)

1. **Task Sheet ASE (A8-D-13) P-2:** Test Operation of Turbocharger/Supercharger
 2. Chapter PowerPoint
 3. Chapter Crossword Puzzle and Word Search
 4. Animations: Supercharger Bypass and Turbocharger Blow-Off Valve
 5. Animations: Turbocharger Operation and Turbocharger Wastegate
 6. Videos: Turbocharger (time 8:36), Turbocharger (time 5:42), and Turbocharger (time 4:23)
 7. Videos: Purpose of a turbocharger (time 2:23) and How a turbo works (time 3:46)
 8. Videos: Turbo lag (time 3:07), Superchargers (time 4:53), and Centrifugal superchargers (time 2:44)
 9. Videos: Twin screw supercharger (time 2:27) and How a turbocharger works! (Animation) (time 3:42)
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ACTIVITIES:

1. **Task Sheet ASE (A1 through A8-A-2) P-1:** Have students complete Test Operation of Turbocharger/Supercharger 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:
