

Manual Drivetrains and Axles 9th Edition

Chapter 15 – Four-Wheel and All-Wheel Drive



CHAPTER SUMMARY:

1. Four-Wheel Drive, Terminology, Transfer Cases, and Part-Time Four-Wheel Drive
 2. Full-Time Four-Wheel Drive, Central Differential, Transfer Cases, and Electronic Transfer Cases
 3. Power Transfer Unit, Couplers and Torque Bias Devices, and Front Drive Axles
 4. Drive Axle/Wheel Disconnect Systems
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OBJECTIVES:

1. Explain the characteristics of four-wheel-drive (4WD) vehicles.
 2. Differentiate between part-time and full-time four-wheel-drive vehicles.
 3. Explain the purpose and function of the central differential and transfer case in a four-wheel-drive vehicle.
 4. Explain the purpose and function of electronic transfer cases and the power transfer unit of a four-wheel-drive vehicle.
 5. Explain the purpose and function of couplers and torque bias devices.
 6. Discuss the operation of front drive axles and drive axle/wheel disconnect systems.
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>)

1. Task Sheet: Four-Wheel Drive Identification
 2. Task Sheet: Tire Circumference & Final Drive Ratio Variations
 3. Chapter PowerPoint
 4. Crossword Puzzle and Word Search
 5. Videos: [\(A3\) Manual Drive Train Axles Videos](#)
 6. Animations: [\(A3\) Manual Drive Train Axles Animations](#)
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ACTIVITIES:

1. Task Sheet: Four-Wheel Drive Identification
 2. Task Sheet: Tire Circumference & Final Drive Ratio Variations
 3. Crossword Puzzle and Word Search
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ASSIGNMENTS:

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