**Manual Drivetrains and Axles 9th Edition**

**Chapter 16 –** **Four-Wheel Drive and Diagnosis**

**CHAPTER SUMMARY:**

1. Four-Wheel Drive Problem Diagnosis, Visual Inspection, and Four-Wheel-Drive Diagnostic Procedures

2. Check Electrical Components and Front Hub Removal and Replacement

3. Transfer Case/Unit Removal and Replacement and Transfer Case/Unit Overhaul

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**OBJECTIVES:**

1. Diagnose four-wheel-drive-related problems.

2. Explain the procedure for diagnosing four-wheel drive and transfer case faults.

3. Discuss how to test a four-wheel-drive vehicle using a scan tool.

4. Explain the procedure for front hub removal and replacement.

5. Explain the procedure for transfer case removal and overhaul. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**RESOURCES:** (All resources may be found at http://www.jameshalderman.com)

1. Task Sheet: Inspect and Adjust Shifting Controls

2. Task Sheet: Transfer Case Replacement

3. Task Sheet: Transfer Case Disassembly and Reassembly

4. Task Sheet: Inspect Front Locking Hubs

5. Task Sheet: Inspect Front Locking Hubs

6. Task Sheet: Transfer Case Lube Level/Leak Check

7. Task Sheet: Transfer Case Electrical Components

8. Chapter PowerPoint

9. Crossword Puzzle and Word Search

10. Videos: [(A3) Manual Drive Train Axles Videos](https://jameshalderman.com/a3_vid_lib_page/)

11. Animations: [(A3) Manual Drive Train Axles Animations](https://jameshalderman.com/a3_anim_lib_page/)

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**ACTIVITIES:**

1. Task Sheet: Inspect and Adjust Shifting Controls

2. Task Sheet: Transfer Case Replacement

3. Task Sheet: Transfer Case Disassembly and Reassembly

4. Task Sheet: Inspect Front Locking Hubs

5. Task Sheet: Inspect Front Locking Hubs

6. Task Sheet: Transfer Case Lube Level/Leak Check

7. Task Sheet: Transfer Case Electrical Components

8. 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:**

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