**Automotive Technology 7th Edition**

**Chapter 122 – Manual Transmissions/Transaxles**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. The Need for a Transmission, Gear Types, Gear Ratios, and Torque, Speed, and Power

2. Transmission Construction, Speed Gears, and Synchronizer Parts and Operation

3. Five-Speed Transmission Torque Flow, and Manual Transmission/Transaxle Construction and Service

4. Gear Lubrication

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**OBJECTIVES:**

1. Discuss the need for a transmission.

2. Explain the different types of gears.

3. Discuss gear ratios.

4. Describe the relationship between torque, speed, and power.

5. Describe the construction of a transmission/transaxle.

6. Describe speed gears.

7. Explain the construction and operation of a synchronizer.

8. Describe the torque flow through a five-speed manual transmission.

9. Describe the procedure to diagnose, remove, disassemble, assemble, and install a manual transmission/transaxle.

10. Discuss manual transmission/transaxle lubricants. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. Task Sheet: Manual Transmission/ Transaxle Identification

2. Task Sheet: Diagnose Fluid Condition & Loss

3. Task Sheet: Drain and Fill Manual Transmission/Transaxle

4. Task Sheet: Remove and Replace Transmission/Transaxle

5. Task Sheet: Disassemble/Reassemble Transmission/Transaxle

6. Task Sheet: Manual Transmission Noise/Shifting Diagnosis

7. Task Sheet: Manual Transmission/Transaxle Linkage

8. Task Sheet: Transaxle Final Drive Noise Diagnosis

9. Crossword Puzzle and Word Search

10. Chapter PowerPoint

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

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

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**ACTIVITIES:**

1. Task Sheet: Manual Transmission/ Transaxle Identification

2. Task Sheet: Diagnose Fluid Condition & Loss

3. Task Sheet: Drain and Fill Manual Transmission/Transaxle

4. Task Sheet: Remove and Replace Transmission/Transaxle

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8. Task Sheet: Transaxle Final Drive Noise Diagnosis

9. Crossword Puzzle and Word Search

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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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