

Automotive Technology 6th Edition

Chapter 127 – 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, torque flow through a manual transmission, and speed gears
 3. Synchronizer parts and operation, five-speed transmission torque flow, and manual transaxle construction
 4. Transmission/Transaxle removal and disassemble and hard-to-shift problem diagnosis
 5. Manual transmission installation and gear lubrication
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OBJECTIVES:

1. Discuss the need for a transmission.
 2. Explain the different types of gears and gear ratios.
 3. Describe the relationship between torque, speed, and power.
 4. Describe the construction of a transmission.
 5. Describe the torque flow through a manual transmission.
 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, and install manual transmission/transaxle.
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.

1. Task Sheet ASE (A2-A-3) P-1, (A2-A-4) P-1, (A2-A-5) P-1: Diagnose Fluid Loss
 2. Task Sheet ASE (A3-A-2) P-1, (A3-A-4) P-1: Drain and Fill Manual Transmission/Transaxle
 3. Task Sheet ASE (A3-C-1) P-2: Manual Transmission/Transaxle Linkage
 4. Task Sheet ASE (A3-C-2) P-2: Electronically Controlled Manual Transmission
 5. Task Sheet ASE (A3-A-1) P-1, (A3-C-3) P-2: Diagnose Noise Concerns
 6. Task Sheet ASE (A3-C-4) P-2: Diagnosing Hard Shifting Concerns
 7. Task Sheet ASE (A3-C-5) P-3: Transaxle Final Drive
 8. Task Sheet ASE (A3-C-6) P-2: Disassemble and Reassemble Transmission/Transaxle
 9. Chapter PowerPoint
 10. Chapter Crossword Puzzle and Word Search
 11. Videos: [\(A3\) Manual Drive Train Axles Videos](#)
 12. Animations: [\(A3\) Manual Drive Train Axles Animations](#)
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ACTIVITIES:

1. **Task Sheet ASE (A2-A-3) P-1, (A2-A-4) P-1, (A2-A-5) P-1:** Have student complete Diagnose Fluid Loss Task Sheet.
 2. **Task Sheet ASE (A3-A-2) P-1, (A3-A-4) P-1:** Have student complete Drain and Fill Manual Transmission/Transaxle Task Sheet.
 3. **Task Sheet ASE (A3-C-1) P-2:** Have student complete Manual Transmission/Transaxle Linkage Task Sheet.
 4. **Task Sheet ASE (A3-C-2) P-2:** Have student complete Electronically Controlled Manual Transmission Task Sheet.
 5. **Task Sheet ASE (A3-A-1) P-1, (A3-C-3) P-2:** Have student complete Diagnose Noise Concerns Task Sheet.
 6. **Task Sheet ASE (A3-C-4) P-2:** Have student complete Diagnosing Hard Shifting Concerns Task Sheet.
 7. **Task Sheet ASE (A3-C-5) P-3:** Have student complete Transaxle Final Drive Task Sheet.
 8. **Task Sheet ASE (A3-C-6) P-2:** Have student complete Disassemble and Reassemble Transmission/Transaxle 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:
