

Automotive Technology 6th Edition

Chapter 133 – Automatic Transmission Transaxle Principles

Lesson Plan

CHAPTER SUMMARY:



1. Torque converters, lockup torque converter, shift modes, and planetary gear sets
 2. Compound planetary gear set, automatic transaxles, and nonplanetary gear automatic transaxles
 3. Continuously variable transmission and dual clutch automatic transmissions
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OBJECTIVES:



1. Explain the purpose, function, and operation of torque converters.
 2. Explain the purpose, function, and operation of lockup torque converters.
 3. Describe the various shift modes.
 4. Discuss planetary gear sets and compound planetary gear sets.
 5. Discuss automatic transaxles and nonplanetary gear automatic transaxles.
 6. Discuss the operation and servicing of continuously variable transmission.
 7. Explain how a dual clutch automatic transmission works.
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>)



1. **Task Sheet ASE (A2-A-2) P-1:** Automatic Transmission/Transaxle ID
 2. **Task Sheet ASE (A2-A-5) P-1 (MLR only):** Identify Drivetrain Components
 3. Chapter PowerPoint
 4. Chapter Crossword Puzzle and Word Search
 5. Animations: See list at the end of the lesson plan.
 6. Videos: See list at the end of the lesson plan.
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ACTIVITIES:



1. **Task Sheet ASE (A2-A-2) P-1:** Have students complete Automatic Transmission/Transaxle ID Task Sheet.
 2. **Task Sheet ASE (A2-A-5) P-1 (MLR only):** Have students complete Identify Drivetrain Components 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:



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Animations: (at <http://www.jameshalderman.com>)

RWD Drivetrain	Power Flow, Two-Mode Hybrid Transmission
Honda 4-Speed Automatic Transaxle	Power Flow, Toyota A 750E
Park	Power Flow, ZF 8HP
Power Flow, 6T70/6F50	PGS 1, Reduction
Power Flow, Allison 1000, 5-Speed	PGS 2, Rev Reduction
Power Flow, Lepelletier Six-Speed	PGS 3, Reduction
Power Flow, Overdrive Four-Speed #1	PGS 4, Rev OD
Power Flow, Overdrive Four-Speed #2	PGS 5, OD
Power Flow, Overdrive Four-Speed #3	PGS 6, OD
Power Flow, Ravigneaux Four-Speed	PGS 7, Direct Drive
Power Flow, Simpson Geartrain + Overdrive	

Videos: (at <http://www.jameshalderman.com>)

Powertrain of Automobile Explained (time 4:20)	Planetary gear set (time 0:10)
Transmissions and transaxles (time 2:10)	9 speed auto (time 2:47)
Torque multiplication (time 2:43)	Planetary gear set (time 4:16)
Basic auto transmission part 2 (time 8:59)	Planetary (time 3:08)
4T60 (time 29:42)	Power flow (time 10:06)
Ravigneaux gear set (time 1:07)	Toyota AB 60 E power flow (time 12:17)