

Automotive Technology 6th Edition

Chapter 136 – Automatic Transmission/Transaxle Unit Repair

Lesson Plan



CHAPTER SUMMARY:

1. Verify the need for unit repair and removing the automatic transmission/transaxle for service
 2. Automatic transmission/transaxle disassembly
 3. Reassembling an automatic transmission/transaxle and flushing the cooler and torque converter
 4. Dynamometric testing the automatic transmission/transaxle
 5. Reinstalling the automatic transmission/transaxle and road test
-



OBJECTIVES:

1. Discuss the steps involved in removing and disassembling the automatic transmission/transaxle.
 2. Describe how to reassemble, reinstall, and test an automatic transmission/transaxle.
-



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

1. Task Sheet ASE (A2-B-2) P-2: Replace Seals and Gaskets
 2. Task Sheet ASE (A2-C-1) P-2: Remove/Install Auto Transmission/Transaxle
 3. Task Sheet ASE (A2-C-6) P-1: Disassemble Auto Transmission/Transaxle
 4. Task Sheet ASE (A2-C-7) P-2: Inspect and Service Valve Body Assembly
 5. Task Sheet ASE (A2-C-8) P-2: Inspect Servo Bore, Piston, and Seals
 6. Task Sheet ASE (A2-C-9) P-1: Assemble Automatic Transmission/Transaxle
 7. Task Sheet ASE (A2-B-2) P-2: Flush Cooler Lines
 8. Task Sheet ASE (A2-C-3) P-2: Inspect Converter Flex Plate
 9. Task Sheet ASE (A2-C-1) P-2: Install Torque Converter
 10. Task Sheet ASE (A2-C-10) P-2: Inspect Oil Pump Assembly
 11. Task Sheet ASE (A2-C-11) P-1: Endplay/Preload Measurement
 12. Task Sheet ASE (A2-C-12) P-2: Thrust Washer and Bearing Inspection
 13. Task Sheet ASE (A2-C-13) P-2: Inspect Oil Seals and Grooves
 14. Task Sheet ASE (A2-C-14) P-2: Bushing Inspection
 15. Task Sheet ASE (A2-C-15) P-2: Planetary Gear Assembly Inspection
 16. Task Sheet ASE (A2-C-16) P-2: Auto Transmission/Transaxle Case Inspection
 17. Task Sheet ASE (A2-C-17) P-2: Transaxle Drive Chain Inspection
 18. Task Sheet ASE (A2-C-18) P-2: Transaxle Final Drive Inspection
 19. Task Sheet ASE (A2-C-19) P-2: Clutch Drum Assembly Inspection
 20. Task Sheet ASE (A2-C-20) P-1, (A2-C-21) P-1: Clutch Pack Clearance and Air Check
 21. Task Sheet ASE (A2-C-22) P-2: Inspect One-Way Clutches
 22. Task Sheet ASE (A2-C-4) P-3: Continuously Variable Transmission
 23. Task Sheet ASE (A2-C-5) P-3: Hybrid Vehicle Drive Train
 24. Chapter PowerPoint
 25. Chapter Crossword Puzzle and Word Search
 26. Animations: See list at the end of the lesson plan.
 27. Videos: See list at the end of the lesson plan.
-

Automotive Technology 6th Edition

Chapter 136 – Automatic Transmission/Transaxle Unit Repair

Lesson Plan



DEMO

ACTIVITIES:

1. **Task Sheet ASE (A2-B-2) P-2:** Have students complete Replace Seals and Gaskets Task Sheet.
 2. **Task Sheet ASE (A2-C-1) P-2:** Have students complete Remove/Install Auto Transmission/Transaxle Task Sheet.
 3. **Task Sheet ASE (A2-C-6) P-1:** Have students complete Disassemble Auto Transmission/Transaxle Task Sheet.
 4. **Task Sheet ASE (A2-C-7) P-2:** Have students complete Inspect and Service Valve Body Assembly Task Sheet.
 5. **Task Sheet ASE (A2-C-8) P-2:** Have students complete Inspect Servo Bore, Piston, and Seals Task Sheet.
 6. **Task Sheet ASE (A2-C-9) P-1:** Have students complete Assemble Automatic Transmission/Transaxle Task Sheet.
 7. **Task Sheet ASE (A2-B-2) P-2:** Have students complete Flush Cooler Lines Task Sheet.
 8. **Task Sheet ASE (A2-C-3) P-2:** Have students complete Inspect Converter Flex Plate Task Sheet.
 9. **Task Sheet ASE (A2-C-1) P-2:** Have students complete Install Torque Converter Task Sheet.
 10. **Task Sheet ASE (A2-C-10) P-2:** Have students complete Inspect Oil Pump Assembly Task Sheet.
 11. **Task Sheet ASE (A2-C-11) P-1:** Have students complete Endplay/Preload Measurement Task Sheet.
 12. **Task Sheet ASE (A2-C-12) P-2:** Have students complete Thrust Washer and Bearing Inspection Task Sheet.
 13. **Task Sheet ASE (A2-C-13) P-2:** Have students complete Inspect Oil Seals and Grooves Task Sheet.
 14. **Task Sheet ASE (A2-C-14) P-2:** Have students complete Bushing Inspection Task Sheet.
 15. **Task Sheet ASE (A2-C-15) P-2:** Have students complete Planetary Gear Assembly Inspection Task Sheet.
 16. **Task Sheet ASE (A2-C-16) P-2:** Have students complete Auto Transmission/Transaxle Case Inspection Task Sheet.
 17. **Task Sheet ASE (A2-C-17) P-2:** Have students complete Transaxle Drive Chain Inspection Task Sheet.
 18. **Task Sheet ASE (A2-C-18) P-2:** Have students complete Transaxle Final Drive Inspection Task Sheet.
 19. **Task Sheet ASE (A2-C-19) P-2:** Have students complete Clutch Drum Assembly Inspection Task Sheet.
 20. **Task Sheet ASE (A2-C-20) P-1, (A2-C-21) P-1:** Have students complete Clutch Pack Clearance and Air Check Task Sheet.
 21. **Task Sheet ASE (A2-C-22) P-2:** Have students complete Inspect One-Way Clutches Task Sheet.
 22. **Task Sheet ASE (A2-C-4) P-3:** Have students complete Continuously Variable Transmission Task Sheet.
 23. **Task Sheet ASE (A2-C-5) P-3:** Have students complete Hybrid Vehicle Drive Train Task Sheet.
-

ASSIGNMENTS:

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

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](#).
-

Automotive Technology 6th Edition

Chapter 136 – Automatic Transmission/Transaxle Unit Repair

Lesson Plan

NOTES AND EVALUATION:



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

Air Check Clutch	Gerotor – Type Oil Pump
Air Test Transmission	Inspect Valve Body
Air Test Transmission No Test Plate	Measure Clutch Plate Clearance – Dial Indicator
Assemble Valve Body	Measure Clutch Plate Clearance – Feeler Gauge
Check Carrier End Play	Remove and Reinstall Clutch Pistons
Check One Way Clutch	Remove and Reinstall Clutch Plates
Check Pinion End Play	Replace Clutch Plates
Clutch Piston Remove and Replace	Transmission End Play Checks
Differential End Play	Vacuum Test Valve Body

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

THM 400 teardown (time 24:01)	Time lapse rebuild (time 1:44)
RWD transmission removal part 1 (time 2:57)	THM 400 rebuild (time 3:47)
RWD transmission removal part 2 (time 3:15)	Honda automatic trans: (time 8:33)
Auto transaxle overhaul (time 8:11)	Transmission rebuild (time 4:50)
Transmission replacement (time 11:05)	THM- 700-R4 REBUILD (time 13:56)
Valve body removal (time 5:18)	THM- 700-R4 REBUILD part 2 (time 13:12)
Servo removal (time 1:55)	THM- 700-R4 REBUILD part 3 (time 12:24)
How to remove an automatic transmission (time 0:54)	Trans: Rebuild part 1 (time 3:50)
Turbo 400 teardown part 1 (time 7:03)	Trans: Rebuild part 2 (time 7:59)
Turbo 400 teardown part 2 (time 5:50)	Trans: Rebuild part 3 (time 4:36)
Governor pressure solenoid (time 7:23)	Trans: Rebuild part 4 (time 10:53)
Transmission oil pump disassembly (time 9:38)	Trans: Rebuild part 5 (time 2:14)
Gear Train inspection (time 9:51)	Trans: Rebuild part 6 (time 5:01)
Transaxle teardown (time 28:14)	Trans: Rebuild part 7 (time 6:04)
Case bearing wear (time 0:59)	Trans: Rebuild part 8 (time 4:17)
Transmission rebuilding (time 10:57)	Trans: Rebuild part 9 (time 5:29)

Automotive Technology 6th Edition
Chapter 136 – Automatic Transmission/Transaxle Unit Repair
Lesson Plan

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

Trans: Rebuild part 10 (time 5:30)	4L80E rebuild part 3 (time 4:24)
Trans: Rebuild part 11 (time 4:00)	4L80E rebuild part 4 (time 5:45)
Trans: Rebuild part 12 (time 3:07)	4L80E rebuild part 5 (time 4:21)
Trans: Rebuild part 13 (time 3:13)	4L80E rebuild part 6 (time 5:11)
Trans: Rebuild part 14 (time 3:32)	4L80E rebuild part 7 (time 5:18)
Trans: Rebuild part 15 (time 3:43)	Rebuild 350 Transmission Part 1 (time 5:15)
Trans: Rebuild part 16 (time 3:56)	Rebuild 350 Transmission Part 2 (time 5:50)
Trans: Rebuild part 17 (time 6:40)	Transmission end play (time 0:44)
Trans: Rebuild part 18 (time 3:02)	Thrust washer (time 1:18)
Trans: Rebuild part 19 (time 7:23)	Transmission bushing installation (time 9:57)
Rebuilt transmissions (time 1:39)	Clutch pack rebuild (time 4:13)
518 transmission rebuild (time 12:56)	Clutch pack clearance (time 2:43)
4L80E rebuild part 1 (time 4:18)	Clutch pack air test (time 2:59)
4L80E rebuild part 2 (time 4:21)	