

Automotive Technology 6th Edition

Chapter 126 – Clutches

Lesson Plan



CHAPTER SUMMARY:

1. Purpose and function of a clutch and component parts and operation of a clutch assembly
 2. Clutch problem diagnosis, clutch replacement, clutch pedal adjustment, and hydraulic clutch service
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OBJECTIVES:

1. Explain the purpose, function, and operation of a clutch.
 2. Describe diagnose clutch problems and how to replace a clutch.
 3. Explain how to adjust the clutch pedal.
 4. Explain how to bleed a hydraulic clutch system
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>)

1. Task Sheet ASE (A3-B-1) P-1: Diagnose Clutch Concerns
 2. Task Sheet ASE(A3-B-2) P-1: Clutch Linkage Inspection
 3. Task Sheet ASE(A3-B-3) P-1: Inspect/Replace Clutch Components
 4. Task Sheet ASE (A3-B-4) P-1: Bleed Clutch Hydraulic System
 5. Task Sheet ASE (A3-B-5) P-1: Clutch Master Cylinder Fluid Level
 6. Task Sheet ASE (A3-B-6) P-1: Flywheel and Ring Gear Inspection
 7. Task Sheet ASE (A3-B-7) P-2: Flywheel Runout
 8. Task Sheet ASE (A3-B-8) P-3: Dual-Mass Flywheel
 9. Chapter PowerPoint
 10. Chapter Crossword Puzzle and Word Search
 11. Animations: Assemble Clutch, Cable Clutch Operation, and Clutch Hydraulic Operation
 12. Animations: Clutch Operation and Measure Flywheel Runout
 13. Videos: See list at the end of the lesson plan.
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ACTIVITIES:

1. Task Sheet ASE (A3-B-1) P-1: Have students complete Diagnose Clutch Concerns Task Sheet.
 2. Task Sheet ASE(A3-B-2) P-1: Have students complete Clutch Linkage Inspection Task Sheet.
 3. Task Sheet ASE(A3-B-3) P-1: Have students complete Inspect/Replace Clutch Components Task Sheet.
 4. Task Sheet ASE (A3-B-4) P-1: Have students complete Bleed Clutch Hydraulic System Task Sheet.
 5. Task Sheet ASE (A3-B-5) P-1: Have students complete Clutch Master Cylinder Fluid Level Task Sheet.
 6. Task Sheet ASE (A3-B-6) P-1: Have students complete Flywheel and Ring Gear Inspection Task Sheet.
 7. Task Sheet ASE (A3-B-7) P-2: Have students complete Flywheel Runout Task Sheet.
 8. Task Sheet ASE (A3-B-8) P-3: Have students complete Dual-Mass Flywheel 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:

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

Clutch operation (time 0:28)	Clutch (time 1:31)
Clutch operation (time 4:33)	Replace a ring gear (time 6:56)
Clutch (time 1:09)	Self adjust clutch (time 6:24)
Clutch demo (time 0:24)	Clutch diagnosis (time 1:35)
Hydraulic clutch demo (time 0:15)	Slipping clutch (time 1:25)
Clutch operation (time 3:46)	Clutch replacement part 1 (time 3:19)
Clutch (time 1:52)	Clutch replacement part 2 (time 5:45)
Clutch and trans operation (time 3:30)	Porsche Boxter trans and clutch (time 7:35)
Clutch hydraulics (time 22:58)	Clutch master cylinder and slave cylinder (time 8:23)
Clutch diagnosis (time 8:53)	Clutch install (time 33:30)
Slave and master cylinder replace and bleed (time 9:50)	2000 VW Beetle Clutch install (time 19:43)
Clutch bleeding (time 13:38)	Pull type clutch (time 14:13)
Bleed a clutch slave cylinder (time 1:00)	Bleed a clutch (time 8:31)
Clutch cable adjustment (time 5:07)	Bleed a clutch (time 9:38)
Diagnose a bad clutch (time 5:41)	Flywheel hot spots (time 1:03)
Clutch replacement Focus part 1 (time 32:41)	Clutch fork and release bearing (time 7:19)
Clutch replacement Focus part 2 (time 33:52)	Clutch and cable install (time 14:58)
Clutch replacement Focus part 3 (time 27:27)	Honda clutch part 1 (time 1:28)
How to adjust a cable operated clutch (time 6:04)	Honda clutch part 2 (time 1:41)
Clutch fork travel (time 3:00)	Clutch alignment (time 0:35)
Clutch replace part 1 (time 8:21)	Clutch slips (time 4:04)
Clutch replace part 2 (time 3:46)	Crankshaft endplay (time 0:05)
Clutch (time 2:36)	Clutch bleeding (time 1:00)