**Manual Drivetrains and Axles 9th Edition**

**Chapter 4 –** **Clutch Diagnosis and Service**

**CHAPTER SUMMARY:**

1. Clutch Inspection, Clutch Problem Diagnosis, Clutch Symptom Guide, and Clutch Replacement

2. Clutch Component Inspection, Clutch Installation, and Hydraulic Clutch Service

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**OBJECTIVES:**

1. Discuss clutch pedal free travel and clutch fluid level.

2. Explain the diagnosis of common clutch problems and recommend the proper repair procedures.

3. Explain how to remove and replace a clutch assembly.

4. Discuss the inspection of used clutch components to determine if they are usable. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. Task Sheet: Diagnose Clutch Concerns

2. Task Sheet: Clutch Linkage Inspection

3. Task Sheet: Inspect the Hydraulic Clutch

4. Task Sheet: Inspect Clutch Components

5. Task Sheet: Bleed Clutch Hydraulic System

6. Task Sheet: Flywheel and Ring Gear Inspection

7. Task Sheet: Flywheel Runout

8. Task Sheet: Dual Mass Flywheel Inspection

9. Chapter PowerPoint

10. Crossword Puzzle and Word Search

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: Diagnose Clutch Concerns

2. Task Sheet: Clutch Linkage Inspection

3. Task Sheet: Inspect the Hydraulic Clutch

4. Task Sheet: Inspect Clutch Components

5. Task Sheet: Bleed Clutch Hydraulic System

6. Task Sheet: Flywheel and Ring Gear Inspection

7. Task Sheet: Flywheel Runout

8. Task Sheet: Dual Mass Flywheel Inspection

9. Crossword Puzzle and Word Search

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**ASSIGNMENTS:**

1. Chapter crossword and word search puzzles.

2. Complete end of chapter 10 question quiz.

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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