
CHAPTER



17

Tractor PMI Class 7 and 8 Diesel Powered with Air Brakes

Instructor Name: (Your Name)

Objectives

Upon completion and review of this chapter, the student should be able to:

- The intent of this chapter is to put together a sample maintenance inspection sheet with explanations to expand the expectations of the PMI record sheet.
- The following are based upon the recommendations of The Maintenance Council (TMC) of the American Trucking Associations.
- The TMC is a great resource for any technician to access because all information is kept current, as rules and regulations within the industry do change regularly to improve the safety of commercial vehicles.

Cab Interior Inspection

1. Inspect the ignition key and switch.
2. Inspect all warning lights and alarms.
3. Test Starter Operation
4. Check engine operation
5. Inspect instruments and record oil pressure and electrical voltage.
6. Test wiper and washer operation.
7. Test operation of electric and/or air horn.
8. Test hand throttle and shut down cable operation.
9. Check A/C, heater, and defrost controls.
9/A Check bunk climate controls
10. Test operation of all interior lighting.
11. Test the operation of all switches and accessories.
11A Check operation of fan clutch
12. Check clutch free travel and pedal pad.
13. Test the operation of the clutch brake.

Cab Interior Inspection Continued

14. Test the operation of the parking brake.
15. Record air governor cutout setting (psi).
16. Test the operation of the air drier drain valve.
17. Inspect all safety equipment and decals.
18. Inspect the windshield and sun visor(s).
19. Test the steering wheel for excessive play or binding.

Air Brake Pneumatic System Check

1. Inspect the air system for leaks with the brakes released.
2. Inspect the air system for leaks with the brakes applied.
3. Test the operation of the single and double check valves.
4. Test the low air pressure warning devices.
5. Check governor cut-in pressure.
6. Test the spring brake inversion valve (if equipped).
7. Test tractor protection valve.
8. Check compressor air pressure build-up time.

Cab and Body Walk Around Inspection Lights On

1. Check seat operation and seat covering.
2. Check floor mats/covering.
3. Check seat belt and bunk restraints.
4. Check door locks, latches, and hinges.
5. Inspect the window operation.
6. Check steps and grab handles.
7. Inspect wiper blades and arms.
8. Inspect mirror mountings, brackets, and glass.
9. Inspect headlamps, turn signals, fog, clearance, and brake lights.
10. Check fuel tanks, mountings, lines, and caps.
11. Inspect air lines, holders, and gladhands.
12. Examine the condition of the SAE J 560 seven-pin connector, jumper cable, and holder.
13. Test the seven-pin connector and cable.
14. Examine the mounting of the fifth wheel.

Cab and Body Walk Around Inspection Lights On

15. Check the locking operation of the fifth wheel.
16. Inspect the mud flaps and hangers.
17. Inspect pintle hook (if equipped).
18. Inspect exhaust stack and mounting.
19. Record any observed physical damage

Tires and Wheels; Front

1. Inspect for irregular wear patterns.
2. Inspect tire sidewall for cuts or damage.
3. Inspect tire valve caps.
4. Check and record tire tread depth.
5. Check and record air pressure.
6. Check and record air pressure.
7. Inspect wheels for cracks or damage.
7A Inspect for slipped wheels on spoke style.

Tires and Wheels; Rear

8. Inspect for irregular wear patterns.
9. Inspect tire sidewall for cuts or damage.
10. Check dual mating with square.
11. Check tread design match.
12. Inspect tire valve caps.
13. Check and record tire tread depth.
14. Check and record air pressure.
15. Inspect for loose wheel lugs.
16. Inspect for loose wheel lugs.
17. Inspect for slipped wheels on spoke style.

Engine and Electrical

1. Examine the mounting of the radiator and core.
2. Examine condenser mounting and core.
3. Examine engine fan assembly and shroud.
4. Examine vibration damper.
5. Pressure test cooling system.
6. Examine coolant clamps and hoses.
7. Inspect coolant recovery system.
8. Check coolant protection level.
8A Test supplemental coolant additives.
9. Perform a pressure test on the radiator cap.

Engine and Electrical Continued

10. Examine A/C compressor, mounting, and refrigerant lines.
11. Examine alternator mounting and wiring.
12. Inspect drive belt for proper tension and condition.
13. Check power steering fluid level and hoses.
14. Examine the fuel pump governor and seals.
15. Examine the fuel pump throttle linkage.
16. Service fuel water separator (if equipped).
17. Replace fuel filter.
18. Examine engine for external oil leaks.
19. Examine engine for external oil leaks.

Engine and Electrical Continued

20. Examine engine exhaust system.
21. Examine engine exhaust system.
22. Examine the wiring harness in the engine compartment.
23. Examine battery box(es) cover(s) and mounting.
24. Examine battery hold-down, cables, and connections.
25. Test and record the battery state-of-charge.

Chassis and Undercarriage

1. Examine steering box mounting.
2. Examine steering box mounting.
3. Check kingpins for wear.
4. Check kingpins for wear.
5. Check lubricant level in front hubs.
6. Inspect hubcap for leaks.
7. Examine front brake chambers and air lines.
8. Examine front brake lining condition.
8A Record the thickness of the front brake linings.
9. Record the thickness of the front brake

Chassis and Undercarriage /Continued

10. Adjust front brakes (manual slack adjusters).
 - 10A Check operation of automatic slack adjusters (if so equipped)
11. Examine front springs hangers and shackles.
12. Inspect engine mounts.
13. Examine engine starter motor and electrical connections.
14. Inspect clutch linkage.
15. Examine transmission for fluid leaks.
16. Inspect transmission breather.
17. Examine transmission mounts.

Chassis and Undercarriage /Continued

18. Check oil level in transmission.
19. Examine driveline, U-joints, and slip yokes.
20. Examine rear axle housing(s).
21. Check axle breather(s).
22. Examine the rear hubs for oil leaks.
23. Check rear axle(s) oil level.
24. Examine rear spring and suspension.
25. Examine the rear brake chambers and air lines.
26. Inspect rear lining thickness.
 - 26A Record rear brake lining thickness (in inches)

Chassis and Undercarriage /Continued

27. Inspect rear brake drum(s) condition.
28. Adjust rear brakes (manual slacks).
 - 28A Check operation of rear automatic slack adjusters (if equipped).
29. Check rear wheel bearings.

Lubrication and Engine Oil Service

1. Lubricate all grease fittings.
2. Lubricate door and hood hinges, latches, and door strikers.
3. Lubricate all cables and linkages.
4. Change engine oil and filters.
5. Obtain an oil sample (optional).
6. Service water filter (optional).
7. Test run engine to check for oil, water, or fuel leaks.
8. Recheck engine oil level.

Road Test

1. Check gear shift operation.
2. Check the operation of all dash gauges.
3. Check the steering wheel for play or bind.
4. Check the steering wheel for play or bind.
5. Check road speed governor.
6. Test cruise control operation.
7. Examine ease of road handling.
8. Test service brakes.
9. Check for excessive exhaust smoke.

PMI “C” Supplemental Items

1. Change power steering fluid and filter.
2. Change drive axle(s) lubricant and filter (nonsynthetic).
2a Draw a drive axle oil sample(s) (synthetic).
3. Change transmission lubricant (nonsynthetic).
3a Draw a transmission oil sample (synthetic).
4. Remove and inspect the front wheel bearings.
5. Remove and inspect rear wheel bearings.
6. Complete an alternator output test.
7. Complete a starter draw test.
8. Adjust the engine valves.

PMI “C” Supplemental Items

9. Adjust fuel injectors.
10. Check front axle toe-in.
11. Check tandem axle alignment and spacing.
12. Service air drier