PREVENTION MAINTENANCE CHECKLIST FOR TRACTORS, TRUCKS, AND AUTOMOBILES

Farm Machinery Fact Sheet FM-21

By Dr. Von H. Jarrett, Extension Agricultural Engineer

Systematic sequence for inspection—GASOLINE AND DIESEL

(Check when done) UNDER THE HOOD

1. Locate operator's manual for vehicle.
2. Fuel, oil, and exhaust leaks—Inspect.
3. Oil and fuel lines—Examine for chafing and kinks.
4. Automatic transmission—Inspect oil level; also, standard transmission.
5. Radiator core, water pump, cylinder head, block, heater, hoses and connections. Inspect for leaks.
6. Power steering pump reservoir—Check fluid level, inspect for leaks, add if required.
7. Inspect all belts, condition and adjustment.
9. Generator commutator and brushes—Inspect.
10. Alternator, generator and regulator—Test and adjust with voltmeter.
11. Steering gear housing—Inspect lubricant level.
12. Steering gear housing bolts—Tighten.
13. Clutch and/or brake master cylinder Inspect fluid level—add?
14. Battery—Remove cables, clean terminals, reinstall cables, coat with petroleum jelly.
   — POS — NEG Posts
15. Battery—Test cells specific gravity with hydrometer.
   Cells ___1 ___2 ___3 ___4 ___5 ___6
16. Battery—Examine level of each cell, add distilled water if required.
17. Radiator—Inspect coolant level and add water or antifreeze solution if required.
18. Radiator coolant—Inspect for signs of oil or combustion leakage.
20. Engine oil—Inspect level. Change if at change period or add.
22. Air compressor—Adjust, cut in ___psi; cut out ___psi; tighten mounting.
Gas only

____ 23. Crankcase breather and oil filler cap air cleaner—Clean and/or replace.
____ 24. Fuel filter—Clean or replace (replace paper element always).
____ 25. Carburetor air cleaner—Clean or replace.
____ 26. Spark plugs—Remove, inspect, clean or replace and gap. Torque with new gaskets.
____ 27. Distributor—Inspect contacts for corrosion and cap for cracks. Inspect wiring condition and points, inspect rotor for burning/cracks.
____ 28. Cylinder compression—Test and record:
Dry 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8
Wet 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8
____ 29. Manifolds—Inspect for leaks, tighten nuts, with engine at normal operating temperature.
____ 30. Cylinder head bolts—Torque.
____ 31. Positive crankcase ventilator valve—Remove, clean or replace.
____ 32. Valves—Run engine at proper idle, inspect overhead system and, adjust valve lash if required.
____ 33. Valve cover gasket—Replace.
____ 34. Carburetor—Adjust idle mixture and RPM.
____ 35. Ignition timing—Set with light.
____ 36. Use tachometer and record top engine RPM.

Diesel only

____ 37. Radiator shutters—Inspect to see they are open before starting engine and close as air pressure builds up after starting engine.
____ 38. Shutter-stat—Lubricate.
____ 39. With engine operating at proper temperature—Tighten exhaust manifold and exhaust pipe flange nuts. Tighten air inlet system hose clamps. Inspect for leaks.
____ 40. Air box drains and crankcase breather tubes—With engine running, see that they are open.
____ 41. Primary and/or secondary fuel filters—Open petcock and drain water.
____ 42. Fuel return line—Disconnect at tank or other convenient place. Run engine at ____ RPM. Fuel return should be approx. ____ quarts per minute. Observe fuel for appearance of air bubbles or gases.
____ 43. Primary fuel filter—Clean. Secondary fuel filter—Replace if at change period.
____ 44. Engine and oil cooler lines—Inspect for leaks.
____ 45. High pressure lines and clamps—Inspect, tighten or replace.
____ 46. Fuel jumper lines—Tighten if required.
____ 47. Valves—Inspect for proper clearance. (LASH.)
____ 48. Injector nozzles—Inspect and clean as required, set cracking pressure.
____ 49. Injectors—Check and adjust for proper height setting. Inspect overhead system and adjust rack.
____ 50. Air cleaners—Clean and refill reservoir with engine oil.
____ 51. Emergency stop control—Test with engine off.
____ 52. Throttle, accelerator, shut-off and choke controls—Test operations.
____ 53. High idle speed setting—Test and record ____ RPM. Low idle speed setting and record ____ RPM.
54. Check on a dynamometer.
PTO RPM's _____ High Idle _____ Rated _____ Horsepower

WALK-AROUND

1. Front sheet metal, paint and bumper—Inspect for appearance/accident.
2. Front lights and directional signals—Inspect.
3. Left front tire—Inspect for cuts or unusual wear, torque wheel nuts.
4. Left-hand side of cab—Inspect for appearance and condition.
5. Left-side door hinges and latch—Lubricate, adjust if necessary. Window regulators and vents—Test operation.
6. Fuel tank mountings—Tighten if required.
7. Battery—Examine box cover clamps; inspect level of each cell.
8. Left-side of body and frame—Inspect for appearance and condition.
9. Left-rear tires—Examine for cuts or signs of unusual wear. Torque wheel and axle flange nuts.
10. Fifth-wheel mountings—Tighten if required.
11. Rear of vehicle—Inspect for appearance and condition.
12. Cab sheet metal—Inspect for appearance and condition.
13. Right rear tires—Examine for cuts or signs of unusual wear. Torque wheel and axle flange nuts.
14. Right side of body and frame—Inspect for appearance and condition.
15. Right side door hinges and latch—Lubricate, adjust if necessary. Window regulators and vents—Test operation.
16. Right front tire—Examine for cuts or unusual wear. Torque wheel nuts.
17. Front ball joints—Inspect on both wheels for excessive looseness.
18. Front kingpins and bearings—Inspect on both wheels for looseness.
19. Front brake linings, anchors, locks, wheel cylinders and drums—Inspect, blow out drums and shoes. Lubricate shoe anchors and cams—wedge-type brakes, clean and lubricate actuating components.
20. Front wheel bearings—Clean, repack and adjust for both front wheels. Replace grease retainer.
21. Rear brake linings, anchors, locks, wheel cylinders and drums—Inspect. Blow out drums and shoes, lubricate shoe anchors and cams; wedge-type brakes—clean and lubricate actuating components. Adjust as required.
22. Wedge-type brake systems—Remove brake drums, clean and lubricate adjusting components.
23. Rear wheel bearings—Clean, repack and adjust. Replace grease retainer.
24. Front wheel caster and camber—Inspect to see that it is within specifications.
25. Toe-in—Adjust as required.

UNDER VEHICLE

1. Chassis—Lubricate according to correct lubricating chart.
2. Front tires—Examine for cuts or unusual wear.
3. Front springs—Inspect for shackle looseness and wear. Inspect leaves for breakage and misalignment.
4. Pitman and steering arms, drag link and tie rod—Inspect.
5. Power steering cylinder—Inspect for leaks.
6. Propeller shaft—Inspect, including all brackets, flanges, hangers and center bearings.

7. Rear springs—Inspect for loose or worn shackles, broken or misaligned leaves.

8. Engine oil—Replace oil, filter element and gasket at change period.

9. Engine pan gasket, front and rear crankshaft seals—Inspect.

10. Engine mounts—Inspect for deterioration or looseness.


12. Front U-bolts—Tighten to specifications.

13. Transmission—Inspect for leaks. Inspect the lubricant level. Add?


15. Automatic transmission linkage—Adjust.

16. Transmission support and strut rod—Adjust if required.

17. Driveline-type parking brake—Inspect lining condition and adjust.

18. Auxiliary or transfer case—Inspect for leaks. See that breathers are not restricted. Tighten rear bearing retainer bolts.

19. Transmission; auxiliary or transfer case linkage pivot points—Lubricate.

20. Center bearing, brackets, U-joints and flanges—Tighten as required.


22. Rear axle differential housing—Inspect for lubricant leakage and pinion bearings for looseness. See that axle breather is free of dirt.

23. Rear tires—Examine for cuts and unusual wear.

24. Rear axle carrier housing and pinion cage bolts—Tighten.

25. Rear U-bolts—Tighten to specifications.


27. Brake hoses, lines, valves, chambers, etc.—Inspect for leaks. Examine cross shaft, cables, linkage for abnormal wear.

28. Air tanks—Drain.

29. Frames and crossmembers—Examine.

30. Exhaust pipe, muffler, tailpipe and hanger brackets—Inspect.

31. Cab hold-down-bolt insulators—Inspect, tighten bolts if required.

32. Body mounts—Tighten if required.

**CAB/DRIVER ITEMS**

1. Cab interior—Inspect for appearance and condition.


3. Window regulators and wing vents—Operate.


5. All lights, horn, tell-tale lights and dash instruments—Test.

6. Wipers—Inspect for correct operation and wear. Adjust, repair or replace as necessary.

7. Washers—Operate.

8. Radio; heater and directional signals—Operate.

9. Steering wheel—Inspect steering gear play.

10. Service brake pedal—Test for action and adequate reserve.

11. Parking brake—Test for action and adequate reserve.

12. Transmission lever—Shift through all gear positions.

13. Clutch pedal—Test for action and adequate free play.

14. Fire extinguisher—Inspect for leakage and secure mounting.
15. Fire extinguisher—Refill or recharge if needed.
16. Tools—See that those regularly assigned are in the vehicle.
17. Engine emergency stop—Test with engine off.
18. Throttle and accelerator controls—Test for binding.
19. Choke—Test for binding.
20. Seat belts—Securely anchored and in good condition.