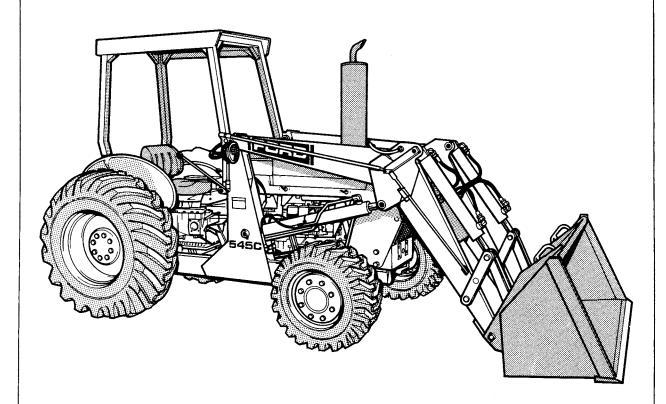
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Repair Manual

Tractor Loader 345C - 445C - 545C



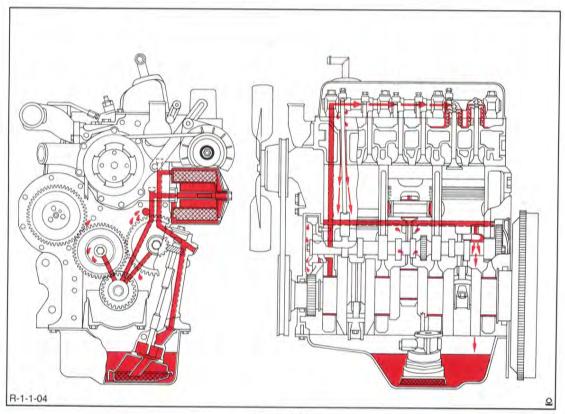


Figure 4
3-Cylinder Engine Lubrication System

Lubrication Oil

The camshaft drive gear bushing is pressure lubricated through a drilled passage from the front main bearing. The gear has small oil passages machined on both sides which allow the oil to escape.

The timing gears are lubricated by oil from the cam follower chamber and the pressure lubricated camshaft drive gear bushing.

Cylinder walls, piston and piston pins are splash lubricated by the connecting rods and rotating crankshaft.

An intermittent flow of oil is directed to the valve rocker arm shaft assembly via a drilled passage in the cylinder block located vertically above No. 1 camshaft bearing. This drilling aligns with a corresponding hole in the cylinder head.

As the camshaft turns, holes in the camshaft and camshaft bearing align and a regulated stream of oil is directed to the cylinder head and on up the rocker arm shaft support bolt to the rocker shaft.

The oil flows from the shaft through drilled holes in each rocker arm bushing to lubricate both ends of the arms. Excess oil flows down the push rods and assists in lubricating the cam followers before draining back into the sump through cored openings in the block.

B. 3-CYLINDER DIESEL ENGINE - OVERHAUL

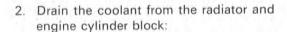
CYLINDER HEAD, VALVES AND RELATED PARTS

REMOVAL

With reference to Figures 5 and 6.

NOTE: The cylinder head can be removed with the engine installed in the tractor.

 Disconnect the battery and remove the battery and battery tray.



- Remove the radiator top hose.
- 3. Remove the vertical exhaust muffler.
- Remove the left and right-hand hood assemblies.
- Disconnect the air inlet hose at the intake manifold.
- 6. Shut-off the fuel tank tap:
 - Disconnect the low pressure fuel lines and remove the fuel filters from the inlet manifold and cap the exposed openings.

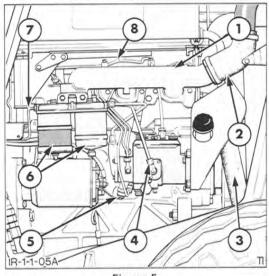


Figure 5
Engine Installation Right-Hand

- Disconnect and remove the injector fuel pipes from the fuel injection pump and the injectors. Cap the exposed openings in the pump, injectors and tubes.
- Disconnect the thermostart fuel pipe at the intake manifold and plug the exposed openings.
- Disconnect and remove the rocker cover ventilation tube.
- Disconnect the cold start equipment and plug the exposed openings (where fitted).
- Disconnect the alternator, oil pressure, coolant temperature sender, air cleaner restriction indicator, fuel injection pump solenoid, horn and cold start wiring harness connections (where fitted).

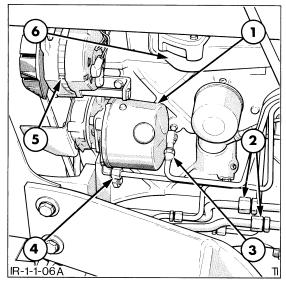


Figure 6
Engine Installation Left-Hand

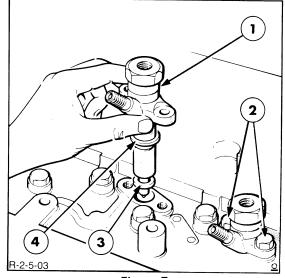


Figure 7
Fuel Injector Removal

- 1. Fuel Injector Assembly
- 2. Fuel Injector Mounting Bolts
- 3. Copper Washer
- 4. Cork Washer
- 10. Remove the front engine harness and secure with tape clear of the engine.
- 11. Remove the alternator and guard (where fitted).
- 12. Remove the exhaust pipe and bracket.
- 13. Bend back the lock tabs, withdraw the attaching bolts and remove the exhaust manifold and gasket.
- 14. Remove the two bolts securing the fuel tank to the hood rear support.
- 15. Withdraw the retaining bolts and lockwashers and remove the inlet manifold and gasket.

- 16. Clean the area surrounding the fuel injectors. Hold the leak-off pipe at each injector and carefully disconnect the fuel injector leak-off pipes then remove the bolts and carefully withdraw the fuel injectors and washers, Figure 7.
- 17. Withdraw the securing bolts and remove the rocker cover and gasket from the cylinder head.
- 18. Check the push rods for straightness by rotating the rods with the valve closed and identify any bent rods.
- Loosen the rocker shaft retaining bolts, which also serve as cylinder head bolts, evenly and alternately. Remove the rocker shaft assembly.

NOTE: Leave the bolts in the rocker shaft supports during removal as they retain the support on the shaft.

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