

# **1530, 1630, 1725, 1925, TC25, TC25D, TC29, TC29D, TC33, TC33D REPAIR MANUAL CONTENTS**

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# SECTION 1 ENGINE SYSTEMS

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## GENERAL INFORMATION

### DESCRIPTION AND OPERATION

This chapter describes the engine overhaul and repair procedures of the Models 1530, 1630, 1725, 1925, TC25, TC29, TC33, TC25D, TC29D, and TC33D tractors. Repair procedures are essentially the same for all models except as noted in the repair procedures.

The tractors are equipped with three-cylinder in-line engines. They are all four cycle, overhead valve, liquid cooled engines. The engines are identified by a code, 1, cast into the lower right side of the cylinder block.

**NOTE: Numeric value, 2, under the Engine Code indicates displacement of the engine in liters.**

Engine Identification	Tractor Model	Engine Power Hp (Kw)
J843	1530	25 (18.7)
J843	1630	27.3 (20.5)
J843	1725	29 (21.6)
N843	1925	34 (25.5)
J843	TC25	25 (18.7)
J843	TC25D	25 (18.7)
J843	TC29	29 (21.6)
J843	TC29D	29 (21.6)
N843	TC33	33 (24.6)
N843	TC33D	33 (24.6)

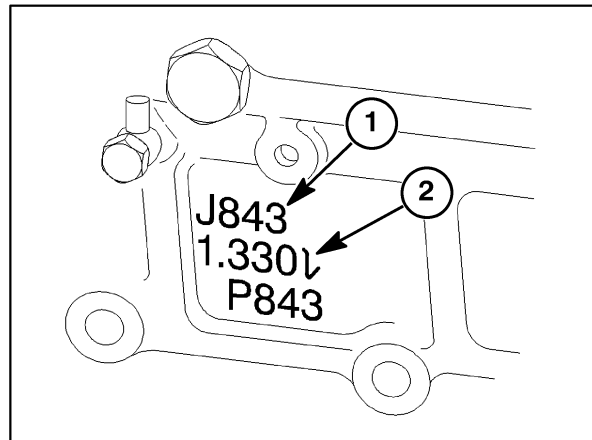


Figure 1-1

### **CYLINDER HEAD AND VALVE TRAIN COMPONENTS**

The cylinder head incorporates the valve assemblies, rocker arms, rocker shaft, push rods, and lifters. A swirl chamber located between the injector assembly and the main combustion chamber of the cylinders provides improved starting and greater fuel efficiency. Initial combustion starts in the precombustion chamber and as the expansion occurs a strong swirl pattern is created in the main combustion chamber for more complete combustion of the air-fuel mixture. The air intake manifold is separate from the cast aluminum valve cover on all these engines. The exhaust manifold is bolted on the left-hand side of the cylinder head on each of the models. Cylinder heads have integral valve guides. Standard size valves only are used. Figure 1-2 provides a cut-away front view of an engine.

### **CYLINDER BLOCK ASSEMBLY**

The cylinder block assembly contains the pistons, connecting rods, crankshaft, timing gears, and engine oil pump. The crankshaft is supported on four main bearings. The front bearing is positioned in a bore in front of the block. The second, third, and fourth bearings are split liners located in holders bolted to the block. The camshaft is supported on two ball bearings located on each end of the block. Figure 1-3 provides a cutaway side view of the engine.

SECTION 1 - ENGINE SYSTEMS

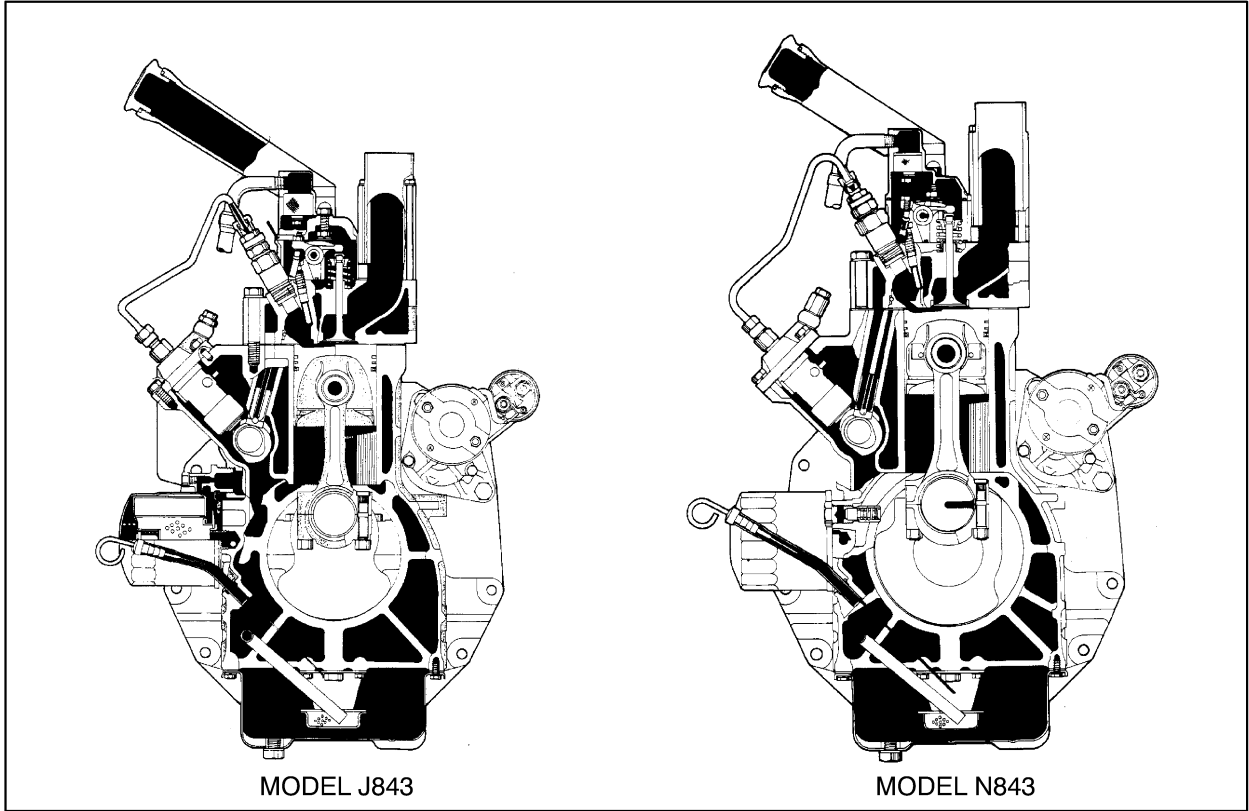


Figure 1-2

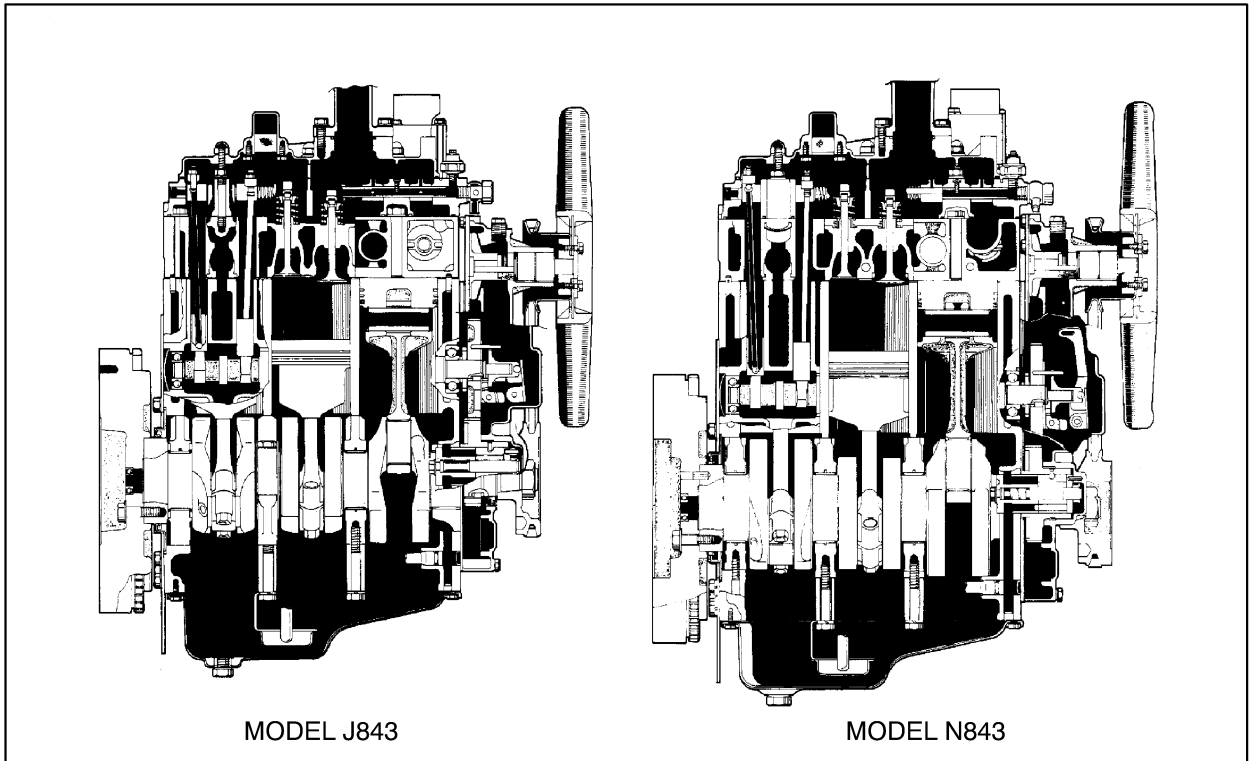


Figure 1-3

## ENGINE OVERHAUL

### ENGINE DISASSEMBLY

1. Turn coolant tap bolt, 1, counterclockwise to drain fluid. Remove the radiator assembly. See "Radiator Removal", discussed later in this section.

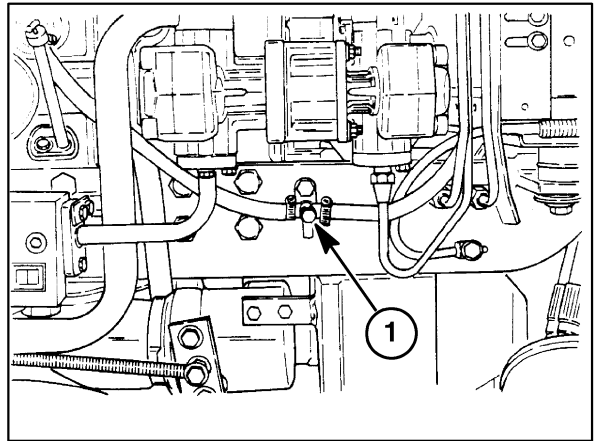


Figure 1-4

2. Remove the air cleaner assembly, 1, along with the air cleaner hoses. Push in on assembly, 1, and turn counterclockwise to remove.

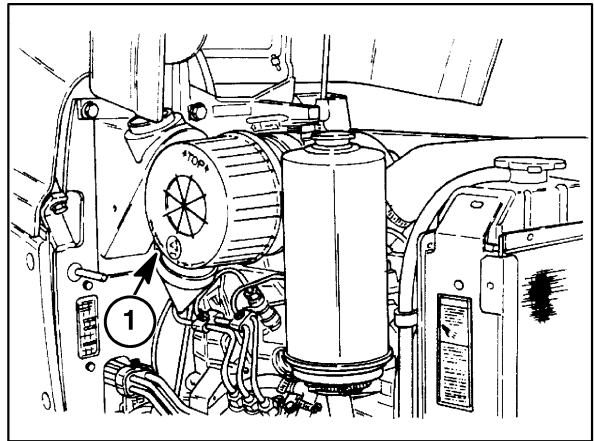


Figure 1-5

3. Remove bolts, 1, for final removal of air cleaner assembly.

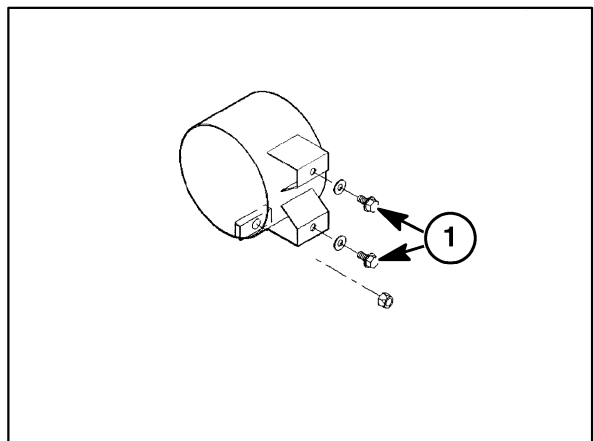


Figure 1-6

4. Remove the exhaust muffler, 1, and manifold assembly, 2. Loosen bolt, 3, and bolt, 4, Figure 1-8, to remove exhaust muffler. Loosen six bolts, 5, to remove exhaust manifold.

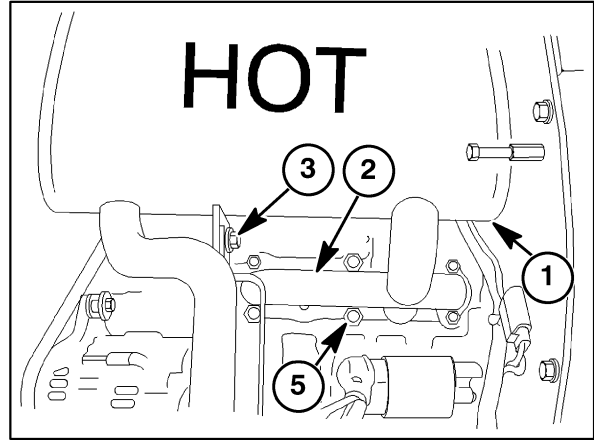


Figure 1-7

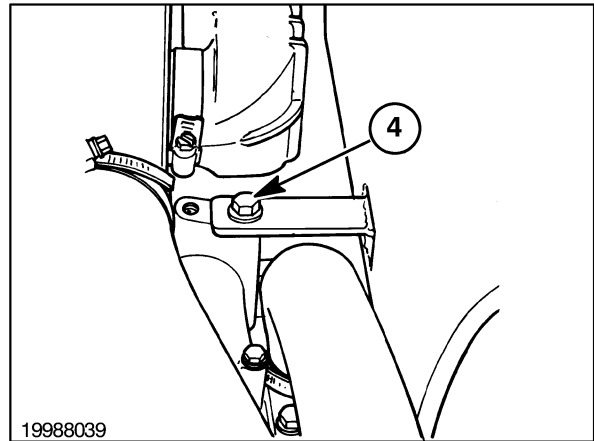


Figure 1-8

### FUEL INJECTOR AND GLOW PLUG REMOVAL

1. Clean all dirt and oil from the injectors and surrounding areas.
2. Disconnect the fuel lines, 1, from the injectors and cap all openings.
3. Remove the injector fuel leak-off line, 3.
4. Remove the injector assemblies, 2.
5. Remove the glow plug bus connector, 5, and remove the glow plugs, 4.

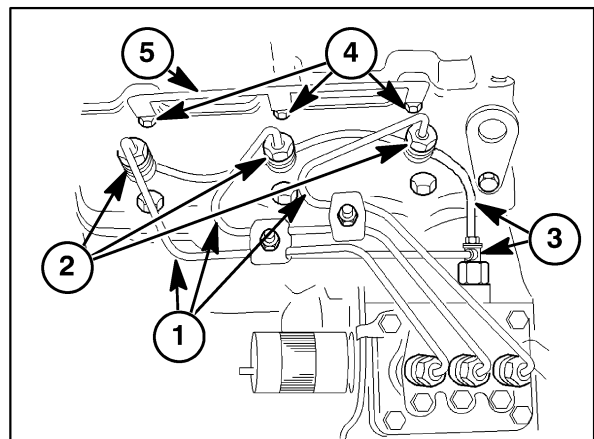


Figure 1-9

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