



## **Engine Cooling System, Critical on Older 300 Series John Deere Engines.**

During the production of 300 Series engines, models 3-164, 4-219 and 6-329, John Deere improved engine performance and reliability by incorporating piston cooling jets. The cooling of the pistons was greatly enhanced by directing a spray pattern of lubricating oil through these jets to the undercrown of the pistons. Engines produced prior to that time do not have the advantage of the additional cooling capability.

It is important that cooling systems of early engines without piston cooling jets be thoroughly inspected to ensure adequate cooling of the engine. The following should be considered and included in an inspection:

1. Carefully inspect the water pump for proper flow, and the radiator for cleanliness and heat dissipation.
2. Make sure that the shrouds and baffles are in place, and that the fan and fan belts are doing their job.
3. The radiator cap and thermostats should be checked along with the radiator hoses for internal restrictions.
4. Coolant passages within the engine block and head must be clear of scale, corrosion and rust.

In addition, improper operation will affect engine cooling. Overloading or lugging should be avoided. Air restriction to the inlet manifold and exhaust restriction can overheat the engine as well. Overfueling and unauthorized alteration of the engine must be discouraged. Use recommended coolant at the proper level to prevent cavitation and improve cooling capabilities.