

A EN 201 - Agricultural Power Units

Engine Cooling Systems

Objectives:

The Student Will Be Able To:

1. Obtain a score of 75% or greater on a quiz focusing on Chapter 10, in John Deere's Engines: FOS;
2. List the two common types of cooling systems and describe how each works;
3. Explain how thermodynamics applies to an engine's cooling system;
4. Explain what functions a coolant has in an engine;
5. List the parts of a liquid cooling system and describe the function of each;
6. List the parts of an air cooling system and describe the function of each; and
7. Evaluate parts of a cooling system based upon operation and measurement.

Required Reading For Quiz:

1. Chapter 10, Engines, Fundamentals of Service; John Deere

I. Introduction:

An engine's cooling system consists of numerous parts that serve an important role in keeping an engine at an appropriate temperature for operation. It is a common misconception that a cooling system is for cooling the engine only. However, the cooling system also serves to protect the engine from extremely cold temperatures as well as ensure that the engine operates at a high enough temperatures in order that combustion occurs efficiently.

This laboratory and required reading will introduce students to cooling system basics, parts of the system, as well as allow students to evaluate cooling system components and coolant. The lab will consist of a required reading quiz, brief lecture, and finally, cooling system lab station activities. The following pages consist of Power Point notes and lab sheets.

Required Materials:

- Eye Protection
- Red Rags
- Calculator
- Lab Manual