MaxxForce® 11 and 13 (2010)

Overview: *Engine Fan Control*

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General Overview: Engine Fan Control

The Engine Fan Control (EFC) feature is designed to permit fan control configuration for particular engine applications. The primary purpose of the engine fan is to allow the engine to run at its regulated operating temperature increasing engine performance. It is also used to assist in cooling the refrigerant for the A/C condenser.

Programmed fan control can reduce engine fan noise, fan loading on the engine and improve fuel economy under certain operating conditions.

The following fan configurations are available:

- 12THX – Variable Speed Fan

- 12THT – ON/OFF

- 12THJ – ON/OFF

- 12WBR – Manual Fan Override Switch

This document will address unique EFC functionality for the MaxxForce® 11 and 13.

Description and Operation

Operation

The EFC feature operates automatically, with the exception of the optional manual fan override switch. If the vehicle is equipped with a manual fan override switch, the operator may activate the fan at 100% fan speed at any time. The manual fan override switch is located in a switch pack on the instrument panel (if equipped).

Two types of engine cooling fans will be addressed in this document:

- ON/OFF Fans – The fan turns ON (100%) and OFF (0%)

- Variable Speed Fans – The engine fan speed is variable between engine speed of 600 rpm and 1700 rpm and will also be dependent on the cooling requirements of the engine.

Feature Interaction

The EFC feature interacts with the following engine features:

- MaxxForce Engine Brake by Jacobs® – The engine fan will be ON (100%) when the engine brake level selection switch is set to level 3 and engine brake is active.

- Engine Speed Control, Power Take-off (PTO) – The engine fan will be ON (100%) when the engine speed control, PTO feature, is active and the, Force Fan On with PTO Active (9007), parameter is set to (1), Fan Always ON with PTO.

Programmable Parameters

The following programmable parameters are available with the EFC feature.

Parameters indicated as customer programmable can be adjusted differently than the production assembly plant setting to meet the customer's needs. If the parameter is indicated as non-customer programmable, the parameter setting is preset from the factory and can't be changed without dealer authorization.

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Engine Fan Control Mode (9000)	This parameter determines the functionality of the engine fan control (EFC) feature. ▪ **If set to (1)** – The feature includes: 1. Cooling fan turns ON at 100% and OFF based on engine coolant temperature. ▪ **If set to (2)** – The feature includes: ▪ Cooling fan varies its speed between 0% and 100% based on engine coolant temperature. ▪ Cooling fan turns ON at 100% if the engine brake level switch is set to level 3 AND the engine brake is active **(See Note 1)**. ▪ **If set to (3)** – The feature includes a two speed fan control with the engine brake. **(See Note 1)**. Note 1: While the engine cooling fan with engine brake functionality is active, it is important to understand that although engine brake performance will improve; fuel economy is decreased.	**0:** Disable **1:** ON/OFF Control **2:** Variable Speed Fan Control **3:** Two Speed Fan Control	YES	This parameter setting is chosen based on the fan type installed on the vehicle. Dealer only.
Force Fan ON With PTO Active (9007)	It may not be desirable to have the cooling fan cycling ON and OFF during engine speed control, PTO operation; therefore this parameter can be used to keep the fan engaged at all times while PTO is active. This parameter could be useful, for example, if a hydraulic lift is used and engine cooling fan engagement may cause the boom to move.	**0:** Auto Control **1:** Fan ON with PTO	YES	Customer Chosen
Enable the Fan ON with Engine Braking Feature (9014)	This parameter allows the fan to be enabled with the MaxxForce Engine Brake by Jacobs®.	0: Disable 1: Enable	YES	Dealer only

Parameter Setup

This section describes only a few possible applications of the EFC feature and how the programmable parameters can be effectively configured for each application. This is not a comprehensive list, and does not include all possible applications that an owner/operator might encounter.

Please review the description and operation section and the programmable parameters for a better understanding of how the various engine parameters and the idle shutdown timer mode might be best configured for your vehicle.

Possible applications for the fan include.

- Manual fan override – An additional manual fan override switch is required.

- MaxxForce Engine Brake by Jacobs® assist – A programmable parameter allows the cooling fan to act as an additional engine brake to assist in slowing down the vehicle.

Frequently Asked Questions

How will turning on the cooling fan help my engine brake?

The engine cooling fan takes away horsepower while engaged. Turning on the fan during engine brake operation helps the vehicle slow down faster.

Definitions/Acronyms

The following terms are referenced in this document:

Acronym	Definition
ECM	Engine Control Module
ECT	Engine Coolant Temperature
PTO	Power Take-off