NAVISTAR®

International® S13 Integrated (2023)

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, which may be limited by vehicle model, are available:

- 12THT – Standard Two-Speed Type
- 12THJ – Standard On/Off Type
- 12TKY – {Borg-Warner K32} On/Off Type, Pneumatically Actuated.

  This document will address unique EFC functionality for the S13.

Description and Operation

Operation

> *NOTE: Refer to the vehicle operation and maintenance manual, as well as the S13 engine operation and maintenance manual, for additional information on operation and indications.*

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%)
- Two-Speed Fans - By avoiding the constant ON-OFF fan cycle, the Two-Speed Fans could deliver some advantages, such as efficient performance and longer life cycle of FAN clutch.

These two options are deferred by a clutch design. No programmable parameters are involved into selection between these two options.

Programmable Parameters

The following programmable parameters, in the CEM1 and BCM, affect 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 cannot be changed without dealer authorization.

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Fan Drive Type(D) CEM1 (10A6 000)	This parameter selects between two fan wheels with different blade configurations:	- Bimetal Fan Drive - Viscous Fan Drive - Hydraulic Fan Drive - Fixed Fan - Electric Driven Fan - No Fan Installed - On/Off Fan Drive - Two Speed Fan Drive	YES	This parameter setting is chosen based on the fan type installed on the vehicle.
0597037 BCM PROG, ENG FAN OVERRIDE 1 Includes Manual Switch for Automatic and Manual Fan Control	This feature adds a switch in the dash to manually force the engine fan on.	- On - Off	YES	Customer selected
0597040 BCM PROG, ENG FAN OVERRIDE 2 for Low Air Pressure, No Switch	This feature forces the engine fan on when the vehicle air pressure drops below a predetermined level.	- On - Off	YES	Customer selected

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.

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
AESC	Auxiliary Engine Speed Control
BCM	Body Control Module
CEM1	Engine Control Module
EFC	Engine Fan Control
ECT	Engine Coolant Temperature