NAVISTAR ENGINE GROUP

International® A26 (2017)

Overview: *Cold Ambient Protection*

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General Overview: Cold Ambient Protection (CAP)

CAP is an engine protection feature designed to prevent both hydrocarbon accumulation on the exhaust valves and water condensation in the engine crankcase during periods of stationary idle in cold ambient conditions.

Description and Operation

> *NOTE: Refer to the vehicle operation and maintenance manual, as well as the A26 engine operation and maintenance manual, for additional information on operation and indications.*

CAP maintains engine coolant temperature by increasing engine rpm when air temperature is below 4 C (39 F) and the coolant temperature is below 70 C (158 F). CAP will activate and increase the engine speed automatically after all entry conditions have been satisfied for 15 minutes.

Operation

CAP will increase the engine speed, to warm the engine coolant, until one of the following occurs:

- Parking brake is released.
- Brake pedal is pressed, or brake switch fault is detected.
- Accelerator pedal is pressed or Accelerator Pedal Position (APP) sensor fault is detected.
- Clutch pedal is pressed, or clutch pedal switch fault is detected (manual transmissions, if equipped with a clutch switch).
- Shift selector is moved from neutral (automatic transmissions). Shift selector must be in neutral for CAP to work.
- Auxiliary Engine Speed Control (AESC) is controlling the engine speed when PP 94021 is set a 0 or AESC is in standby when PP 94021 is set to a 1.
- Engine Coolant Temperature (ECT) is above 80 C (176 F) or ECT sensor fault is detected.
- Ambient Air Temperature (AAT) is above 7 C (45 F) or AAT sensor fault is detected.
- The engine is operating in Stationary Regen mode.
- The engine is operating in HC Desorb mode.
- The Idle Shutdown Timer (IST) feature is active.
- The Auto-Start-Stop feature is active.

Programmable Parameters

The following programmable parameter is available and should be programmed to control how the CAP interacts with AESC.

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.

Standard CAP Parameter

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Disable CAP when AESC is enabled (94021)	This parameter determines the conditions under which the CAP feature will be functional. ▪ **If set to 0 –** CAP is disabled, when AESC is controlling engine speed. ▪ **If set to 1 –** CAP is disabled, when AESC is in Standby. ▪ **If set to (2) –** CAP does not change with AESC.	**0:** CAP is disabled, when AESC is controlling engine speed **1:** CAP is disabled, when AESC is in Standby **2:** CAP does not change with AESC	YES	Customer Selected (at point of purchase)

Frequently Asked Questions

If I have an UltraShift® or UltraShift Plus® transmissions can I use this feature?

CAP is allowed for the UltraShift® and UltraShift Plus® transmissions. CAP will operate in the 700-825 RPM range but will disengage with a gear change or brake switch activation.

Why does the CAP feature appear to be shut off when IST is actively running?

The IST feature interacts with the CAP feature. If the IST feature is active and running, the CAP feature will be deactivated.

Definitions/Acronyms

The following term is referenced in this document:

Acronym	Definition
AAT	Ambient Air Temperature
AESC	Auxiliary Engine Speed Control
AIT	Air Inlet Temperature
APP	Accelerator Pedal Position
CAP	Cold Ambient Protection
ECT	Engine Coolant Temperature
IST	Idle Shutdown Timer