NAVISTAR ENGINE GROUP

MaxxForce® 7 (2010)

Overview: *Service Interval (Change Oil Indicator)*

TABLE OF CONTENTS

General Overview: Service Interval – Change Oil Indicator

The Service Interval – Change Oil Indicator feature provides a visual reminder to the operator that the oil change interval has expired and that routine maintenance procedures should be performed.

This feature measures the vehicle distance, engine hours and fuel used from the last maintenance performed on the vehicle and calculates when the next maintenance is due.

The document will address the service interval functionality for MaxxForce® 7 engines.

Description and Operation

The operator interaction for the service interval feature works primarily by means of a visual indicator.

Change Engine Oil – Text Message

The "Change Engine Oil" text message in the gauge cluster indicates that the engine oil change interval has expired.

Figure 1: Change Engine Oil message and Service Maintenance Lamp on Cluster

Service Interval Reset

This function turns off the "Change Engine Oil" indication. The service interval can be reset at your authorized dealer.

To reset the service interval using the cruise switches:

> ***IMPORTANT! –*** *You only have 12 seconds to complete this procedure.*

1. Ignition key in ON position (engine OFF).
2. Press and release CRUISE ON.
3. Press the CRUISE RESUME switch 4 times (do not hold longer than half a second).
4. Press and hold the CRUISE RESUME switch a fifth time and hold for 3 seconds.
5. "Change Engine Oil" message is reset.

- Cycle the ignition key switch and go back to step 2 if the procedure above does not reset the service interval.

Programmable Parameters

The following programmable parameters are related to the service interval feature. These parameters should be programmed in a manner which meets the customer's needs.

To meet the customer's needs, programmable parameters can be reset from the production plant settings. If the parameter is indicated as not programmable, the setting is preset from the factory and can't be changed without dealer authorization.

Parameter Name	Description	Possible Values	Cust Prgm	Recommended Setting
Service Interval Mode (9500)	This parameter enables or disables the service interval feature. • If set to (0): – The service interval feature is disabled. • If set to (1): – The feature will turn on the "Change Engine Oil" indication based on any combination of engine hours and/or fuel used and/or vehicle distance interval. • If set to (2): – COSI Average MPG & MPH Based Feature. This mode will automatically determine the optimum interval based on average miles per gallon (MPG) and average miles per hour (MPH) to turn on the "Change Engine Oil" indication when the service interval has expired. • If set to (3): COSI Average MPG & MPH w/PP intervals based feature.	0: Change Oil Service Interval Feature Disabled 1: COSI FU/EH/VD Based Feature Enabled 2: COSI Average MPG & MPH Based Feature Enabled 3: COSI Average MPG & MPH Based Feature Enabled w/o Manual Reset	YES	Recommend set to 2.

Parameter Name	Description	Possible Values	Cust Prgm	Recommended Setting
Fuel Used Service Interval (9501)	This parameter determines the fuel used between the last service interval reset and when the "Change Engine Oil" indication occurs. Set this parameter to the value recommended in the "Maintenance Schedule and Service Procedures" section of the "Engine Operation and Maintenance Manual". Refer to "Engine Oil and Filter – Service Interval" for details. NOTE: Set this parameter to (0) if a service interval based on fuel used is not desired.	0 to 65,535 gallons	YES	Refer to the MaxxForce® 7 Diesel Engine - Engine Operation and Maintenance Manual.
Engine Hour Service Interval (9502)	This parameter determines the engine hours between the last service interval reset and when the "Change Engine Oil" indication occurs. Set this parameter to the value recommended in the "Maintenance Schedule and Service Procedures" section of the "Engine Operation and Maintenance Manual". Refer to "Engine Oil and Filter – Service Interval" for details. NOTE: Set this parameter to (0) if a service interval based on engine hours is not desired.	0 to 2,000 hrs.	YES	Refer to the MaxxForce® 7 Diesel Engine - Engine Operation and Maintenance Manual.
Vehicle Distance Service Interval (9503)	This parameter determines the vehicle distance between the last service interval reset and when the "Change Engine Oil" indication occurs. Set this parameter to the value recommended in the "Maintenance Schedule and Service Procedures" section of the "Engine Operation and Maintenance Manual". Refer to "Engine Oil and Filter – Service Interval" for details. NOTE: Set this parameter to (0) if a service interval based on vehicle distance is not desired.	0 to 65,535 miles	YES	Refer to the MaxxForce® 7 Diesel Engine - Engine Operation and Maintenance Manual.
Fuel Used Starting Value (9504)		0 to 536,870,912 gallons	YES	
Engine Hour Starting Value (9505)		0 to 214,748,365 hrs.	YES	
Vehicle Distance Starting Value (9506)		0 to 4,294,967,295 miles	YES	
Service Soon Percent (9507)	This parameter determines the functionality of the "Change Engine Oil" indication. If this parameter is set to 100%, the "Change Engine Oil" indication will occur when one or more intervals (hours, fuel, or distance) have fully expired. If the value is set to 50%, however; the "Change Engine Oil" indication occurs when half of the interval has accumulated. NOTE: Refer to the "calculations" section and the examples at the end of this document to understand how to set this parameter.	5 to 100 (%)	YES	Customer Chosen (See Note)
Change Oil Lamp Always On (9508)	This parameter determines the functionality of the "Change Engine Oil" indication.	0: No 1: Yes	YES	Customer Chosen

Parameter Name	Description	Possible Values	Cust Prgm	Recommended Setting
Change Oil Lamp Activation Time (9509)	This parameter determines the functionality of the "Change Engine Oil" indication.	0 to 1,275 seconds	YES	Customer Chosen
Service Interval Reset Request (9510)	Set this parameter to a value of (1) to reset the service interval and turn off the "Change Engine Oil" indication. NOTE: The service interval may be reset by means of the cruise control switches. Refer to the Service Interval Reset section in this document for more information.	0: No 1: Yes	YES	Customer Chosen

Parameter Setup

Calculations

Refer to the following equation before choosing the "Service Soon Percent" (9507) parameter value.

Equation

$$\text{Service Soon Percent" (9507)} = \frac{\text{Desired Service Interval - Desired Advanced Notice}}{\text{Desired Service Interval}}$$

The "Service Soon Percent" (9507) parameter determines when the "Change Engine Oil" indication will occur.

To find an appropriate value, input the desired service interval (i.e. 25,000 miles) into the equation. Next, subtract the amount of notification desired prior to the expiration (i.e. 2,000 miles). Last, divide that entire result by the desired service interval.

> *NOTE: Move the resulting decimal (0.92) two places to the right to establish the percentage (92%) to be in put into the "Service Soon Percent" (9507) parameter.*

Equation (Results)

$$0.92 = \frac{25{,}000 - 2000}{25{,}000}$$

Possible Service Interval Applications

This section describes only a few possible applications of the 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 service interval parameters might be best configured for your vehicle.

(Example A) – Fuel/Hours/Distance Based Service Interval

In this example, let's assume that the customer desires the service interval to be based on fuel used, engine hours, or vehicle distance; whichever occurs first, and they would like to be notified prior to the expiration of the service interval.

Adjust parameters as follows:

Parameter Name	Action Required
Service Interval Mode (9500)	Set to 1
Fuel Used Service Interval (9501)	Set this parameter to the value recommended in the "Maintenance Schedule and Service Procedures" section of the "Engine Operation and Maintenance Manual".
Engine Hour Service Interval (9502)	Set this parameter to the value recommended in the "Maintenance Schedule and Service Procedures" section of the "Engine Operation and Maintenance Manual".
Vehicle Distance Service Interval (9503)	Set this parameter to the value recommended in the "Maintenance Schedule and Service Procedures" section of the "Engine Operation and Maintenance Manual".
Service Soon Percent (9507)	Set to "90%"

(Example B) – Vehicle Distance Based Service Interval

In this example, let's assume that the customer desires a 25,000 mile service interval and they would like to be notified exactly 2,000 miles prior to the expiration of the service interval.

Adjust parameters as follows:

Parameter Name	Action Required
Service Interval Mode (9500)	Set to 1
Fuel Used Service Interval (9501)	Set to 0
Engine Hour Service Interval (9502)	Set to 0
Vehicle Distance Service Interval (9503)	Set to 25,000 miles
Service Soon Percent (9507)	Set to 92%

Frequently Asked Questions

I have an "over the road" driver and I want them to be notified 2,000 miles before the service interval has expired and using a 25,000 mile interval. How do I set this up?

Refer to "Example B" in this document for details.

Definitions/Acronyms

The following terms are referenced in this document:

Acronym	Definition
COSI	Change Oil Service Interval
ECM	Engine Control Module
MPG	Miles Per Gallon
MPH	Miles Per Hour
PP	Programmable Parameters