MaxxForce® 7 (2010)

Overview: *Vehicle Speed Governor*

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General Overview: Vehicle Speed Governor

The Vehicle Speed Governor (VSG) feature limits the maximum speed that the vehicle can travel on a level road. The customer can set up this feature for performance or to provide better overall fuel economy.

The document will address unique VSG functionality for MaxxForce® 7 engines.

Description and Operation

This feature limits the maximum vehicle speed controlled by the accelerator pedal. If your engine reaches a certain speed and feels like it should have more power to travel faster, you are probably traveling at the governed maximum speed limit.

VSG Anti-Tampering

This feature monitors the vehicle speed signal (VSS) input to the engine control module (ECM) to determine whether it is valid or if it has been tampered with.

The following conditions must be met before the feature will be active:

- Programmable parameter – Road Speed Limiting Control Mode (7900) must set to "Enable".

- All Transmissions: Mobile PTO must be inactive.

The engine will take measures (limit engine speed) if it determines that the VSS input has been subjected to tampering. The maximum engine speed with a VSS fault is customer programmable.

Feature Interaction

There is interaction within the VSG feature. The vehicle speed limit in effect will depend on which feature described in this document is active.

Programmable Parameters

The following programmable parameters are required for VSG operation. These parameters should be programmed to the operation which will best suit the vehicle conditions expected.

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.

VSG Parameters

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Road Speed Limiting Control Mode (7900)	This parameter is required to be set to 1.	**0:** Disable **1:** Enable	YES	Customer Choice
Road Speed Limiting Vehicle Speed Limit (7902)	This parameter sets the maximum accelerator controlled vehicle speed. The engine will not power the vehicle faster than this value.	1 – 127 MPH	YES	
Road Speed Limiting Input SW Low Speed Vehicle Limit (7903)	This parameter sets the amount of vehicle speed allowed above the programmed vehicle speed limit, useful during downhill grades. Adjusting this parameter adjusts how tightly the engine tries to maintain the vehicle speed limit based on accelerator pedal demand. This parameter setting effects performance and fuel economy. • Setting this value lower will increases performance and decreases fuel economy. • Setting this value higher will increases the benefits of momentum and therefore improves fuel economy.	1 to 127 MPH	YES	
Road Speed Limiting Vehicle Limiting Speed Mode (7904)	This parameter sets the signal source for this feature.	**0:** VLS Governor Enable switch feature disabled **1:** VLS Governor Enable Switch Hardwire Signal Feature Enabled **2:** VLS Governor Enable Switch J1939 CAN Signal Feature Enabled 3: VLS Gov Enable Switch from Pin RPRE	YES	

VSG Anti – Tampering Parameters

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Engine Speed Limit with VSS Fault (7901)	This parameter sets the maximum engine speed allowed when an active vehicle speed sensor (VSS) fault exits and PTO engine speed control is not active. This parameter might be useful in preventing the operator from exceeding the Road Speed Limiting Vehicle Speed Limit (7902) parameter setting by tampering with the vehicle speed sensor.	700 to 5000 RPM	YES	This parameter should be set to match the Road Speed Limiting Vehicle Speed Limit (7902) parameter setting

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Road Speed Limiting Max RPM with VS Signal Fault (7905)	This parameter set the maximum engine RPM achieved with a vehicle speed signal fault.	0 to 5000 RPM	YES	

Parameter Setup

This section briefly describes one example of VSG configuration and operation.

Please review the description and operation section and the programmable parameters for a better understanding of how the various VSG parameters might be best configured for your vehicle.

EXAMPLE A – VSG Configuration, and VSG Anti –Tampering

In this example, the customer requires vehicle speed limiter operation with a blend of fuel economy and performance. In addition, this particular customer requires Anti-Tampering functionality.

Adjust parameters as follows:

Parameter Name	Action Required
Road Speed Limiting Vehicle Speed Limit (7902)	Set to 65 MPH
Road Speed Limiting Control Mode (7900)	Set to 1
Engine Speed Limit with VSS Fault (7901)	Set to 1400 rpm

Frequently Asked Questions

- **N/A**

Definitions/Acronyms

The following terms are referenced in this document:

Acronym	Definition
ECM	Engine Control Module
VSG	Vehicle Speed Governor
VSL	Vehicle Speed Limiter
VSS	Vehicle Speed Sensor