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1. Driver Reward (General Overview)

The driver reward feature is designed to give the operator incentives for driving more efficiently. The feature accomplishes this by measuring the driver’s habits based on fuel economy, time at idle, or both.

The rewards include higher maximum vehicle speed and higher cruise control speed limit. Lower maximum vehicle speed or cruise control speed limits may result as a penalty for failing to meet the standards.

Programmable parameters within the engine control module (ECM) provide driver reward related options that can be adjusted to suit the customer’s needs.

This document will address unique driver reward functionality for MaxxForce® 11L and 13L engines.

To set up the driver reward feature it is recommended that you use one of the example settings, referenced in the “Parameter Setup” section, and then modify only the specific parameters that will help meet your vehicle application.

1.1. Feature Codes

N/A

2. Definitions/Acronyms

The following terms are referenced in this document:

- **ECM** – Engine Control Module
- **GDP** – Gear Down Protection
- **RSL** – Road Speed Limit

3. Description and Operation

3.1. Operation

The driver control of the driver reward feature consists of the following:

- The driving habits of the operator (i.e. good/bad).
- The trip reset button.
- The related programmable parameters.

The following visual indications are used for driver reward:

NOTE: These appear in the form of text messages in the gauge cluster digital display.

- “DRV Reward”
 - “Expected” – Reward indication which results in higher vehicle speed limits.
 - “Good” – Reward indication which results in higher vehicle speed limits.
 - “Excellent” – Reward indication which results in higher vehicle speed limits.
 - “Penalty” – Penalty indication which results in lower vehicle speed limits.
 - “Increasing” – Informs the driver that the vehicle speed limit will soon be increased.
 - “Decreasing” – Informs the driver that the vehicle speed limit will soon be decreased.

Driver Reward consists of target levels and rewards for achieving those levels. The feature requires that the vehicle is driven a minimum distance of good or excellent driving so that enough fuel economy and idle time data is acquired before determining a reward/penalty. This minimum distance must be covered after every trip reset.

The driver reward feature records fuel economy and/or idle time for the duration of each trip to provide driver rewards or penalties. The rewards/penalties given are based on levels set by the customer programmable parameters.

There are 3 levels of driver achievement that the customer can program (Expected, Good, and Excellent) for both fuel economy and idle percent. A programmable penalty level may be applied if the expected level is not achieved by the driver.

The rewards/penalties take the form of increased/decreased accelerator vehicle speed limit and/or cruise control vehicle speed limit.

3.2. Feature Interaction

The driver reward feature interacts with the following engine features:

- **Adjustable Road Speed Limiter** – The engine speed limits set by the adjustable road speed limiter feature have priority over the limits allowed by the driver reward feature.
- **Cruise Control** – Depending on how the driver reward feature is programmed, there may be interaction with road speed limiting, cruise control, OR both.
- **Gear Down Protection** – The engine speed limits set by gear down protection have priority over the limits allowed by the driver reward feature.
- **Vehicle Speed Limiter Override** – The engine speed limits set by the VSL override feature have priority over the limits allowed by the driver reward feature.
- **Progressive Shift** – The engine speed limits set by progressive shift have priority over the limits allowed by the driver reward feature.
- **Vehicle Speed Limiter** – Depending on how the driver reward feature is programmed, there may be interaction with the vehicle speed limiter, cruise control, OR both.

NOTE: In general, the lowest engine or vehicle speed limit of these features will be followed.

4. Programmable Parameters

4.1. Required Parameters

The following programmable parameters are required for driver reward. These parameters should be programmed to encourage drivers to maintain the engine’s most efficient speed range for fuel economy.

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 authorization.

NOTE: The Driver Reward data can be reset using an electronic service tool or using the trip reset button.

Parameter Name	Description	Possible Values	Customer Programmable?	Recommended Setting
DRIVER REWARD ENABLE (7918)	This parameter enables or disables the driver reward feature in the engine.	0: Disabled 1: Enabled	YES	Customer Chosen
Driver Reward Mode (7930)	This parameter selects whether rewards/penalties will be applied to the “Accelerator Vehicle Speed Limit” (7902), the “Maximum Cruise Control Speed” (7604, 7909) or both.	0: Driver Reward – Vehicle Speed Governor Enabled 1: Driver Reward –	YES	Customer Chosen

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	<ul style="list-style-type: none"> If set to 0 – Rewards/penalties will only be applied to the accelerator vehicle speed limit. If set to 1 – Rewards/penalties will only be applied to the maximum cruise control speed. If set to 2 – Rewards/penalties will only be applied to the accelerator vehicle speed limit and the maximum cruise control speed. 	<p>Cruise Control Speed Enabled</p> <p>2: Driver Reward – Both Enabled</p>		
FUEL ECONOMY - EXPECTED LEVEL (7921)	This parameter selects the fuel economy standard that the driver is expected to achieve.	0 – 15 mpg	YES	Customer Choice
FUEL ECONOMY - GOOD LEVEL (7920)	If the value of this parameter setting is exceeded, a “good” reward level will be applied.	0 – 15 mpg	YES	Customer Choice NOTE: This parameter must be set above the (7921) parameter setting.
FUEL ECONOMY - EXCELLENT LEVEL (7919)	If the value of this parameter setting is exceeded, an “excellent” reward level will be applied.	0 – 15 mpg	YES	Customer Chosen NOTE: This parameter must be set above the (7920) parameter setting.
PERCENT IDLE TIME - EXPECTED LEVEL (7924)	This parameter is the percentage of trip time at idle that the driver is expected to achieve. NOTE: If you press the trip reset button, then you start over (i.e. 60 miles begins counting down again).	0 – 100%.	YES	25%
PERCENT IDLE TIME - GOOD LEVEL (7923)	This parameter is the percentage of trip time at idle that the driver should reduce his percent of time at idle to achieve. Once this level is achieved the ‘good’ level reward will be activated. NOTE: If you press the trip reset button, then you start over (i.e. 60 miles begins counting down again).	0 – 100%.	YES	15% NOTE: This parameter must be set below the (7924) parameter setting.
PERCENT IDLE TIME - EXCELLENT LEVEL (7922)	This parameter is the percentage of trip time at idle that the driver should reduce his percent of time at idle to achieve. Once this level is achieved the ‘excellent’ level reward will be activated. NOTE: If you press the trip reset button, then you start over (i.e. 60 miles begins counting down	0 – 100%.	YES	10% NOTE: This parameter must be set below the (7923) parameter

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	again).			setting.
VS LIMIT INCREMENT - EXPECTED LEVEL (7926)	This parameter sets the amount of increase in vehicle speed that will be added when the 'expected' level is achieved.	0 – 10 mph	YES	0 mph
VS LIMIT INCREMENT - GOOD LEVEL (7927)	This parameter sets the amount of increase in vehicle speed that will be added when the 'good' level is achieved.	0 – 10 mph	YES	2 mph
VS LIMIT INCREMENT - EXCELLENT LVL (7928)	This parameter sets the amount of increase in vehicle speed that will be added when the 'excellent' level is achieved. The limits should be programmed as follows: (7928 + 7902) > (7902 + 7912) NOTE: (7902, 7912) is part of vehicle speed limiter.	0 – 10 mph	YES	5 mph
VS LIMIT DECREMENT - PENALTY LEVEL (7929)	This parameter sets the amount of decrease in vehicle speed that will be deducted when the 'expected' level is not achieved.	-10 to 0 mph	YES	-2 mph
Driver Reward Performance Criteria (7925)	This parameter selects whether fuel economy, percent time at idle, or both is monitored for providing driver reward. <ul style="list-style-type: none"> • If set to 0 – Only the fuel economy will be monitored. • If set to 1 – Only the trip idle percent will be monitored. • If set to 2 – Both the fuel economy and trip idle percent will be monitored. 	0: Driver Reward – Fuel Economy Based 1: Driver Reward – Trip Idle Percent Based 2: Driver Reward – Both Enabled	YES	Customer Choice

5. Parameter Setup

5.1. Possible Driver Reward Applications

This section describes only a few possible feature applications 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 might be best configured for your vehicle.

(Example A) – Customer desires driver reward to monitor fuel economy and desires the operator’s driving habits to be rewarded/penalized based on increased/decreased cruise control speed limit.

Adjust parameters as follows:

Driver Reward Programmable Parameter Setup for Example A:		
Parameter	Value	Units
Driver Reward Mode (7930)	Set to 1: “Cruise Control Speed Enabled”	Numeric
FUEL ECONOMY - EXPECTED LEVEL (7921)	Set to 6	mpg
FUEL ECONOMY - GOOD LEVEL (7920)	Set to 7	mpg
FUEL ECONOMY - EXCELLENT LEVEL (7919)	Set to 8	mpg
PERCENT IDLE TIME - EXPECTED LEVEL (7924)	Set to 25%	Percent
PERCENT IDLE TIME - GOOD LEVEL (7923)	Set to 15%	Percent
PERCENT IDLE TIME - EXCELLENT LEVEL (7922)	Set to 10%	Percent
VS LIMIT INCREMENT - EXPECTED LEVEL (7926)	Set to 0	mph
VS LIMIT INCREMENT - GOOD LEVEL (7927)	Set to 2	mph

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VS LIMIT INCREMENT - EXCELLENT LVL (7928)	Set to 5	mph
VS LIMIT DECREMENT - PENALTY LEVEL (7929)	Set to -2	mph
Driver Reward Performance Criteria (7925)	Set to 0	Numeric

Additional Information

The customer may decide to set the 'Expected' level of fuel economy and idle percentage levels at 8 MPG and 55%. If there is no desire to reward the driver for achieving this level then the rewards for this level should be set to 0 mph.

If the customer decides to set the 'Good' level of fuel economy at 10 MPG and idle percentage at 50% then the driver can be rewarded for achieving these levels. The reward is determined by setting the 'Good' level reward parameters. In this example, the setting is 5 MPH and the 'Driver Reward Incentive Select' is set to 'Both' so both the accelerator vehicle speed limit and the cruise control vehicle speed limits are increased by 5 MPH.

The customer may decide to penalize driver if expected fuel economy is not achieved. If there is no desire to penalize the driver then the penalty should be set to 0 mph.

Refer to the [Programmable Parameters](#) section of this document for more information.

6. Frequently Asked Questions

Q: How can I set up the driver reward feature to monitor both fuel economy AND trip percent time at idle?

A: Set the "Driver Reward Performance Criteria" (7925) parameter to a value of 2. Refer to the [Programmable Parameters](#) section for more information.