Detroit Diesel Application User's Manual

NEXIQ™
TECHNOLOGIES

Detroit Diesel Application User's Manual

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Table of Contents

Chapter 1

Using This Manual

This chapter provides an overview of this manual's organization and the conventions used throughout.

Manual Overview

This manual provides basic and detailed information to support you in using the Pro-Link® tool.

The manual is comprised of the following sections:

- *Table of Contents*—helps you to find the information you are looking for quickly and easily.
- *Using this Manual*—provides an overview of this user's manual.
- *Getting Started*—provides instructions on loading the application.
- *Using the Engine Application*—provides detailed instructions for accessing and using each of the application's menu options.
- *Using the Marine Application*—provides detailed instructions for accessing and using each of the application's menu options.
- *Using the Series 638 Application*—provides detailed instructions for accessing and using each of the application's menu options.
- *Parameter Listings (Appendix)*—provides a comprehensive listing of all supported parameters with descriptions for each.
- *Warranty & Service (Appendix)*—provides warranty and service information.
- *Index*—provides an alphabetical listing of all major topics covered in this user's manual.

Each chapter is introduced by an "at-a-glance" list of the chapter's contents, along with corresponding page numbers.

Conventions

Different conventions are used in this user's manual to draw your attention to certain types of information. This section provides an overview of these conventions.

Special Messages

Notes

NOTE provides explanations, comments, or tips related to the subject matter that is being discussed.

Example:

NOTE:

Refer to the page number provided for each described component for further details.

Important

IMPORTANT indicates a situation which, if not avoided, may result in damage to the test equipment or vehicle.

Example:

IMPORTANT:

Keep all cables clear of moving or hot engine parts.

Cautions

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

Example:

CAUTION:

Do not use the unit to perform tests on household or industrial sources.

Warnings

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or bystanders.

Example:

WARNING:

Wear gloves when handling hot engine components.

Stop

Information that needs to be considered before proceeding is presented in the following manner:

Before using this application, be sure to read the Pro-Link® User's Manual for:

- *important safety information.*
- *instructions on connecting the device to a vehicle.*
- *instructions on properly inserting an application card.*

Troubleshooting

Information intended to help you to address or anticipate potential issues are presented in the following manner:

If the "Loading Application" message continuously appears, check the label on the card to verify you are using the appropriate card for the given manufacturer/ECU.

Specialized Text

The following specially formatted text is used to help you to differentiate certain elements discussed within this manual:

Emphasis: Used to draw your attention to particularly important information.

- **Field/Line**: Used to highlight the name of a field or a line of text from a display.

  Example: "The **Request Lamp** line updates to reflect the current request."

- **Menu Items**: Used to highlight a series of menu selections.

  Example: "From the Main Menu, select **MPC UTILITIES ▸ RS-232 SERIAL PORT ▸ TERMINAL SETUP**...".

- **Screen titles**: Used to highlight the title of a screen showing on the device's readout window.

  Example: "The display shows the **Review Snapshot** menu, which lists the event captures at the bottom of the screen".

- **Selection**: Used to highlight a selectable item, such as a menu option.

  Example: "From the Main Menu, select **View Calibrations**".

Chapter 2

Getting Started

The Detroit Diesel Application is a suite of diagnostic applications that provides the capability to reprogram and diagnose Detroit Diesel DDEC III and IV electronic systems, using the Pro-Link®.

The Detroit Diesel Application consists of three applications specific to the following engine types:

- DDEC III/IV (Engine)
- DDEC Marine Controls
- Series 638

This chapter provides instructions on loading the application and navigating through its menu hierarchy.

NOTE:

Since this application is supported by both the Pro-Link GRAPHIQ™ and the Pro-Link® Plus, this manual uses “Pro-Link®” to refer to both products.

Loading the Application

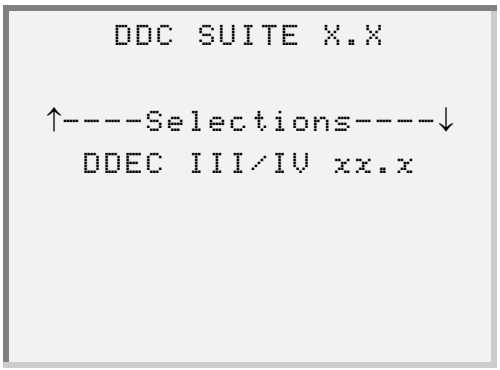
Before using this application, be sure to read the Pro-Link® User's Manual for:

- *important safety information.*
- *instructions on connecting the device to a vehicle.*
- *instructions on properly inserting an application card.*

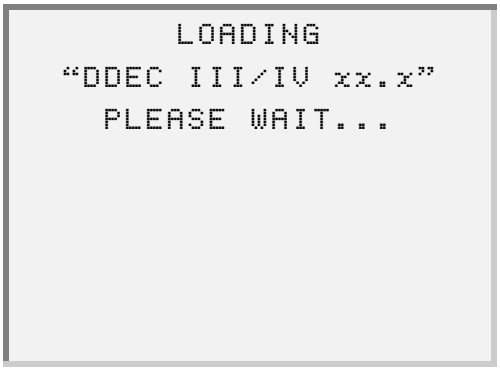
Use the following procedure to load the Detroit Diesel Application onto the Pro-Link®.

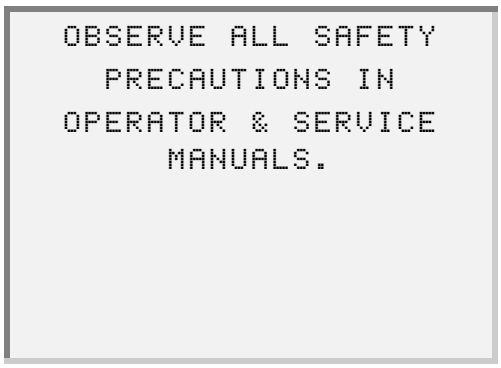
To load the DDEC III/IV application:

1. Be sure that the Detroit Diesel Application is properly loaded on the Pro-Link®. Once the application is loaded, the screen displays the DDC Suite main menu.

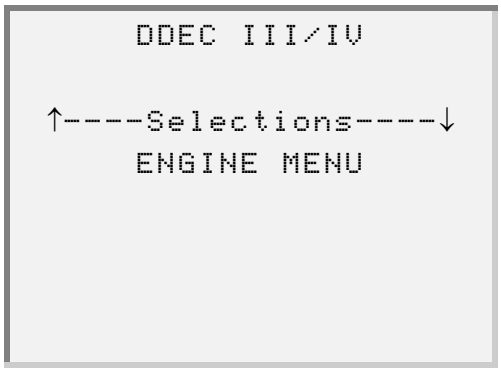


2. Press ENTER to select the **DDEC III/IV**. The screen indicates that the selected application is loading, then displays a safety message.





Once the application is loaded, the screen displays the **DDEC III/IV** menu.



Once you load the DDEC III/IV application, you have access to the following menu options:

- Engine Menu (Chapter 3)
- Marine Controls (Chapter 4)
- Series 638 (Chapter 5)

Making Selections

In order to use the features provided with this application, you will need to select from various menus presented on the Pro-Link® screen. Making selections typically involves using the arrow keys navigate to a desired option, then pressing the ENTER key.

The following convention is used throughout this manual in order to provide abbreviated instructions on making on-screen selections.

Example Instruction Step:

1 From the DDEC III/IV Main Menu, select **Engine Menu**.

What this means:

The example instruction step is an abbreviation of the following procedure:

1 From the DDEC III/IV Main Menu, press the ▲ or ▼ key to select **Engine Menu**, then press ENTER.

Chapter 3

Using the Engine Application

This chapter provides instructions on accessing and using the Engine Application features.

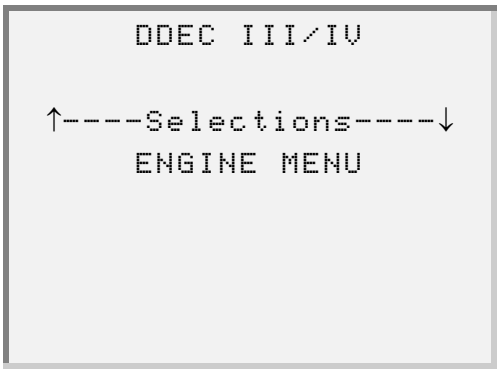
Accessing the Engine Application

The **Engine Menu** provides the following options:

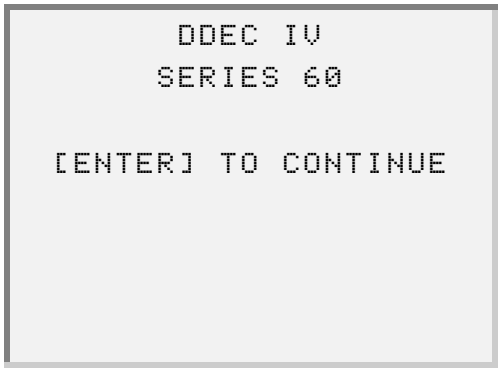
- Data List (pg. 14)
- Diagnostic Codes (pg. 15)
- Exhaust Tmp Monitor (pg. 22)
- View Calibrations (pg. 23)
- Fuel Injector Info (pg. 40)
- Engine/Trip Data (pg. 61)
- Calibration Change (pg. 67)
- Switch/Light Stats (pg. 78)
- Activate Outputs (pg. 80)
- MIDS Received (pg. 83)
- Reset Components (pg. 84)
- Transmissions (pg. 87)
- Reset AFR Table (pg. 95)
- Maint Alert System (pg. 98)
- PTF Reset (pg. 102)
- Change Menu Desc (pg. 103)
- English/Metric (pg. 104)

To access the Engine Menu:

1. Be sure that the Pro-Link® is powered up and the application card is properly inserted (refer to the *Pro-Link® User's Manual* for instructions).
2. Once the application boots up, access the **DDEC III/IV** menu.
3. Select **Engine Menu**.



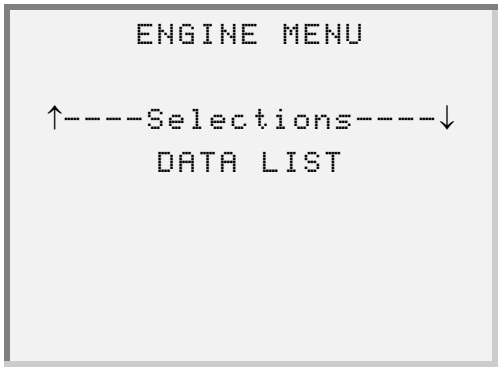
The screen displays the engine type and series number. For example:



NOTE:

The screen will display according to the ECM that is currently communicating with the Pro-Link® .

4 Press ENTER. The screen displays the **Engine Menu**.



Viewing the Data List

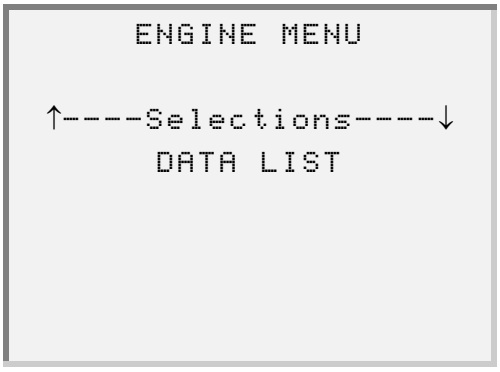
Use the **Data List** feature to view the engine's data list parameters on the Pro-Link® screen.

NOTE:

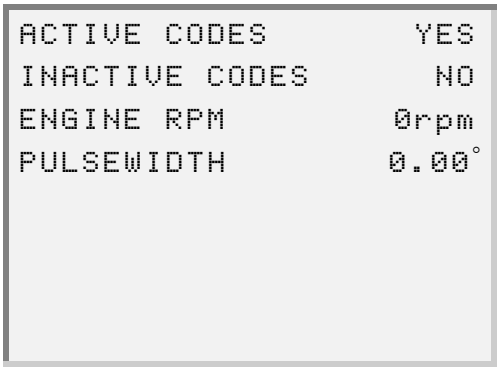
See "Engine Data List", on page 142 for a complete list of all engine data list parameters and possible values for each.

To view the data list:

1 From the **Engine Menu** screen, select **DATA LIST**.



The screen indicates that data is being requested, then displays the data list. For example:



2 Press the [▲] or [▼] key to scroll through the data list items, as needed.

3 To exit the screen, press [FUNC].

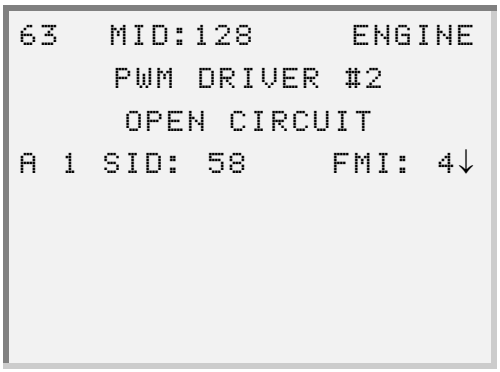
Viewing Diagnostic Codes

Use the **Diagnostic Codes** feature to view active and inactive diagnostic codes, as well as clear inactive diagnostic codes from the ECM memory.

This feature contains the following menu options:

- Active Codes (pg. 17)
- Inactive Codes (pg. 18)
- Clear Codes (pg. 20)

Use the **Active Codes** and **Inactive Codes** options to view occurrence information for active or inactive diagnostic codes. The screen displays the fault.



Press Enter; the screen displays the diagnostic code information. For example:

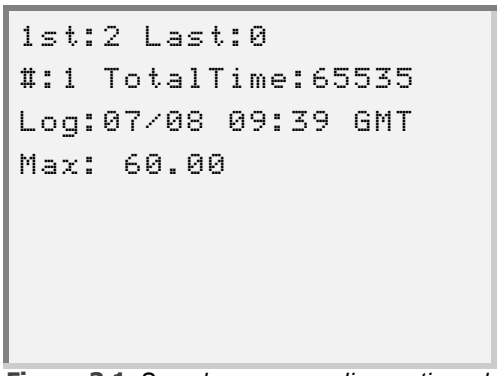


Figure 3.1 *Sample screens—diagnostic code details*

1st:—Engine hours of the fault's first occurrence

Last:—Engine hours of the fault's last occurrence

#:—The total number of occurrences of this fault

TotalTime:—The total time, in seconds, that this code was active

Log:—Date and time that the code was first logged*

Min:—(not shown in above sample screen) The minimum value that DDEC has seen for this parameter

Max:—The maximum value that DDEC has seen for this parameter

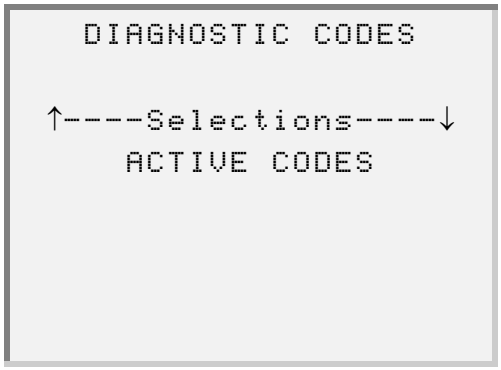
* GMT (Greenwich Mean Time) displays for ECM software version 20.0 or greater.

View Active Codes

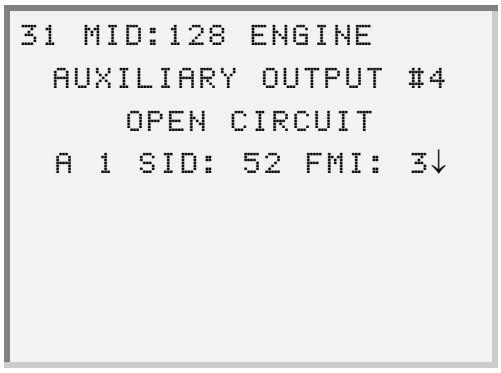
Active codes are fault codes that are currently active. Use the **Active Codes** option to view all currently active codes as well as information regarding each code's occurence.

To view active diagnostic codes:

1. From the **Engine Menu** screen, select **DIAGNOSTIC CODES**. The screen displays the **Diagnostic Codes** menu.



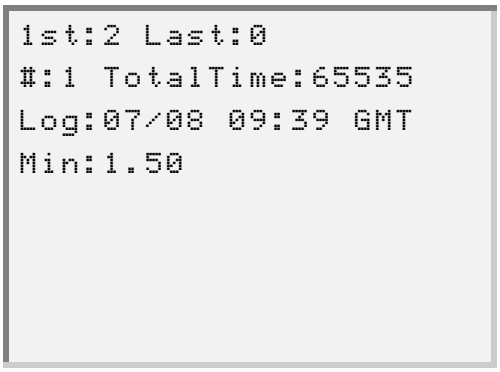
2. Press [ENTER] to select **Active Codes**. The screen indicates that the codes are being retrieved, then displays the codes. For example:



   —If no codes are detected, the screen indicates, "*No Active Codes*". In this instance, press [FUNC] to exit the screen.

3. Press the [▲] or [▼] key to scroll through the data, as needed.

—To view additional information for a code, press the [▲] or [▼] key to select the desired code then press [ENTER]. The screen displays details for the selected code. For example:



NOTE:

See Figure 3.1, on page 16 for descriptions of each line item on the screen.

4 Press [ENTER] to return to the active code list screen and select another active code to view, if desired.

5 To exit the screen, press [FUNC].

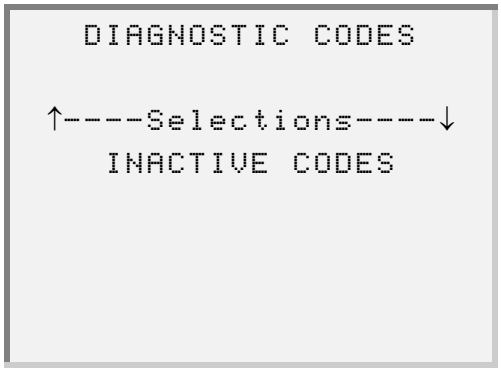
View Inactive Codes

Inactive codes are logged fault codes that were previously active. Use the **Inactive Codes** option to view all currently inactive codes as well as information regarding each code's occurence.

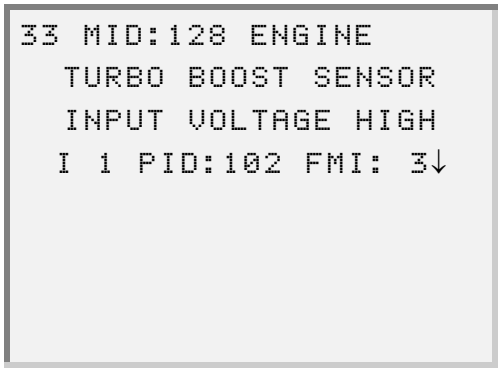
To view inactive diagnostic codes:

1 From the **Engine Menu** screen, select **DIAGNOSTIC CODES**. The screen displays the **Diagnostic Codes** menu.

2 From the **Diagnostic Codes** menu, select **Inactive Codes**.



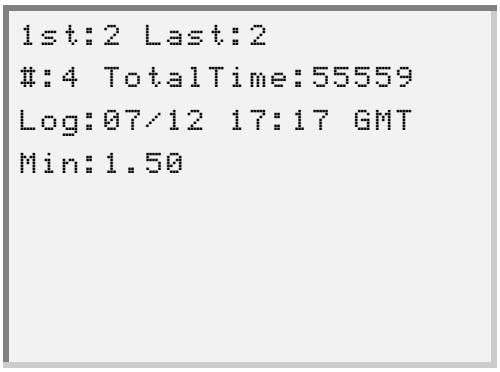
The screen indicates that the codes are being retrieved, then displays the data screen. For example:



—If no codes are detected, the screen indicates, "*No Inactive Codes*". In this instance, press [FUNC] to exit the screen.

3 Press the [▲] or [▼] key to scroll through the data, as needed.

—To view additional information for a code, press the [▲] or [▼] key to select the desired code, then press [ENTER]. The screen displays details for the selected code. For example:



NOTE:

See Figure 3.1, on page 16 for descriptions of each line item on the screen.

4 Press [ENTER] to return to the inactive code screen and select another inactive code to view, if desired.

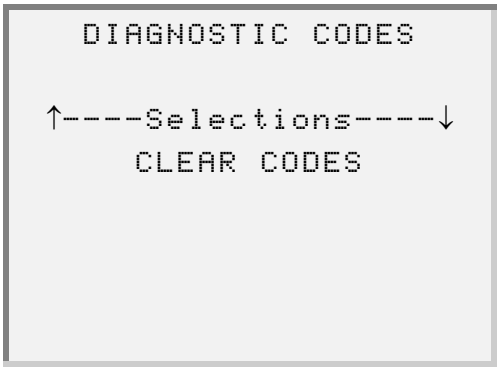
5 To exit the screen, press [FUNC].

Clear Codes

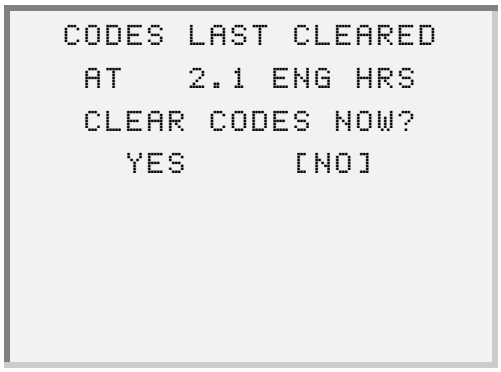
To clear inactive codes from ECM memory:

1 From the **Engine Menu** screen, select **DIAGNOSTIC CODES**. The screen displays the **Diagnostic Codes** menu.

2 From the **Diagnostic Codes** menu, select **Clear Codes**.

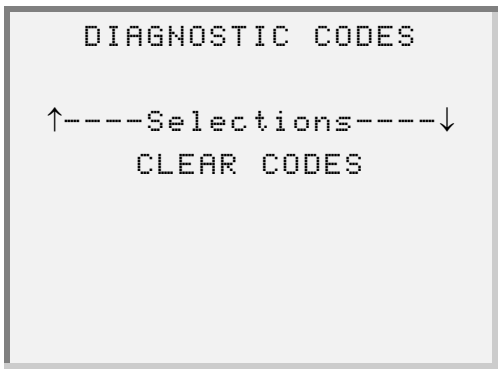


The screen displays a message indicating that the data is being requested, then displays the data. For example:



3 Select **Yes**. The screen indicates that the codes are being cleared.

Once the codes are cleared, the screen returns to the **Diagnostic Codes** menu.



4 Press FUNC to return to the **Engine Menu**.

Viewing Exhaust Temperatures

Use the **EXHAUST TMP MONITOR** feature to view the cylinder exhaust temperatures.

NOTE:

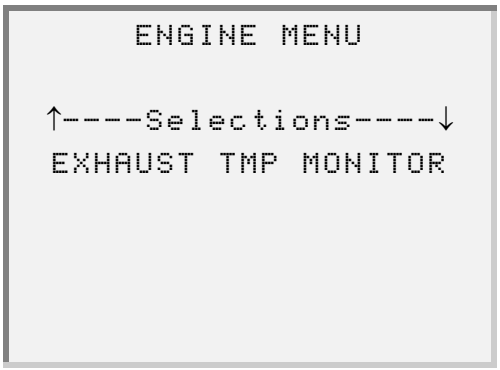
Pro-Link® displays the temperature readings in “firing order”.

NOTE:

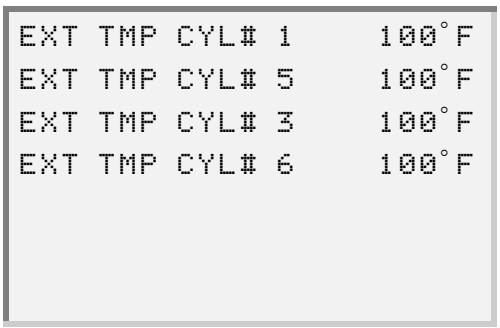
Only the number of cylinders connected to the engine will be displayed (up to 16).

To view exhaust temperatures:

1 From the **ENGINE MENU**, select **EXHAUST TMP MONITOR**.



The screen displays the temperature data. For example:



2 Press the [▲] or [▼] key to scroll through the data, as needed.

3 To exit the screen, press [FUNC].

Viewing Calibrations

Use the **View Calibrations** feature to view the engine and vehicle operating parameters that are stored in the DDEC III/IV Electrically Erasable Programmable Read Only Memory (EEPROM).

This feature provides the following options:

- View Engine Configuration Information (pg. 23)
- View Idle Shutdown Information (pg. 25)
- View VSG (Throttle) Calibration (pg. 27)
- View Engine Protection Information (pg. 29)
- View Cruise Control Information (pg. 31)
- View Progressive Shift Information (pg. 33)
- Viewing ECM Ins/Outs (pg. 35)
- Viewing Air Compressor Information (pg. 37)
- Using Function Lockout (pg. 38)

View Engine Configuration Information

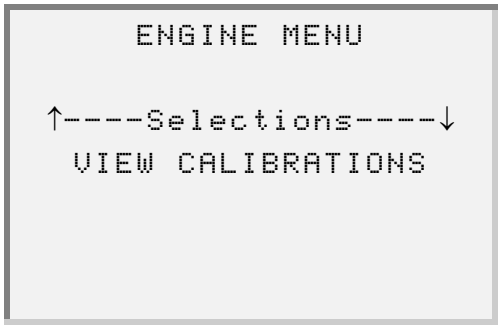
The **View Engine Configuration** feature allows you to view information on engine configuration, including engine identification, application and rating information.

NOTE:

See “Engine and Vehicle Configuration”, on page 150 for a list of all available engine configuration parameters.

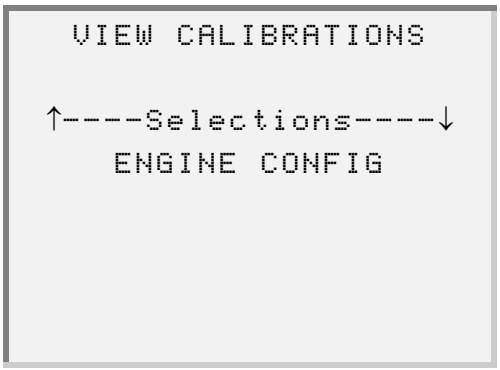
To view engine configuration information:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**.

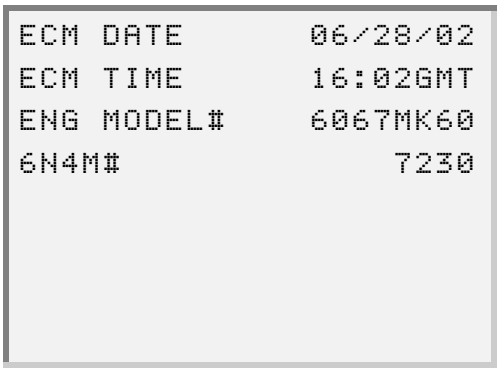


The screen displays the **View Calibrations** menu.

2 Press [ENTER] to select **Engine Configuration**.



The screen displays a message indicating that the data is being requested, then displays the idle shutdown data. For example:



3 Press the [▲] or [▼] key to scroll through the screen data, as needed.

4 To exit the screen, press [FUNC].

View Idle Shutdown Information

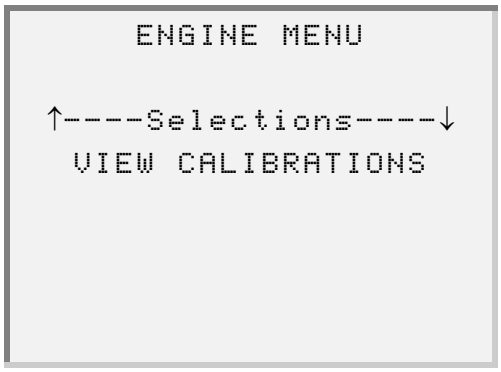
Use the **Idle Shutdown** option to view idle shutdown information that is currently programmed in the DDEC III/IV Calibration.

NOTE:

See “Idle Shutdown Configuration”, on page 155 for a list of all available idle shutdown configuration parameters.

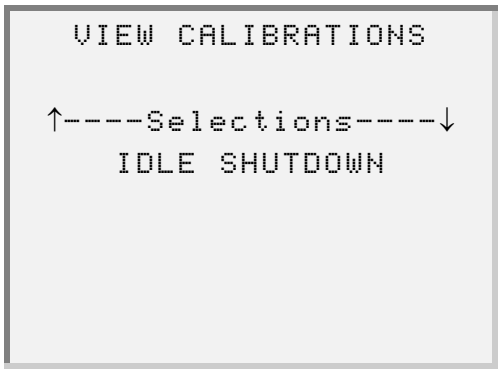
To view idle shutdown information:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**.

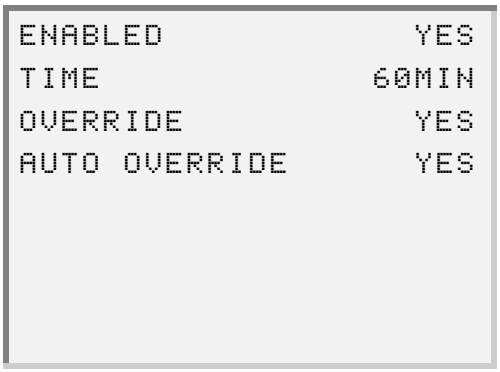


The screen displays the **View Calibrations** menu.

2 Select **Idle Shutdown**.



The screen displays a message indicating that the data is being requested, then displays the idle shutdown data. For example:



3 Press the [▲] or [▼] key to scroll through the screen data, as needed.

4 To exit the screen, press [FUNC].

View VSG (Throttle) Calibration

Use the **VSG (Throttle) Calibration** option to view variable speed governor information that is currently programmed in the DDEC III/IV calibration.

NOTE:

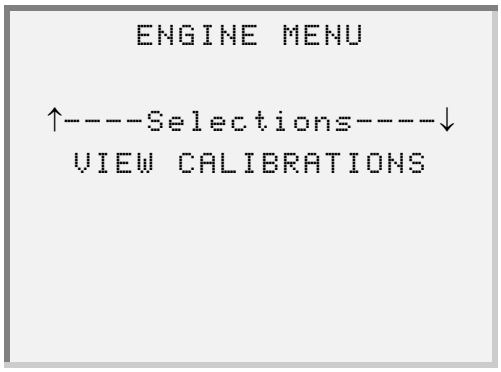
You can use the **Change Menu Description** feature to switch between viewing VSG or Throttle calibration settings. See “Changing Description Options”, on page 59 for details.

NOTE:

Refer to “VSG (Marine Throttle) Calibration”, on page 156 for a list of all VSG (Throttle) calibration parameters.

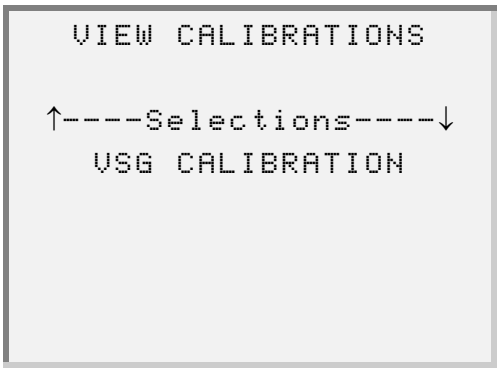
To view VSG (Throttle) calibration information:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**.

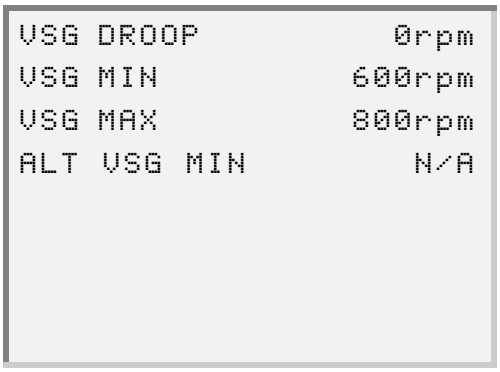


The screen displays the **View Calibrations** menu.

2 Select **VSG Calibration** (or **Throttle CALIBRATION**).



The screen displays a message indicating that the data is being requested, then displays the data. For example:



3 Press the [▲] or [▼] key to scroll through the screen data, as needed.

4 To exit the screen, press [FUNC].

View Engine Protection Information

Use the **Engine Protection** option to view engine protection information that is currently programmed in the DDEC III/IV Calibration.

Please keep the following in mind when viewing Engine Protection data on the Pro-Link® screen:

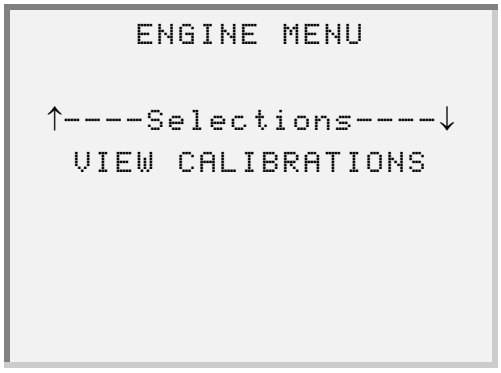
- Parameter values that are displayed as “N/A” indicates that the sensor and/or function are not part of the engine configuration.
- The R1 designation indicates that the value displayed is being transmitted from the engine receiver ECM #1
- The R2 designation indicates that the value displayed is being transmitted from the engine receiver ECM #2

NOTE:

See “Engine Protection Configuration”, on page 157 for a list of all Engine Protection parameters.

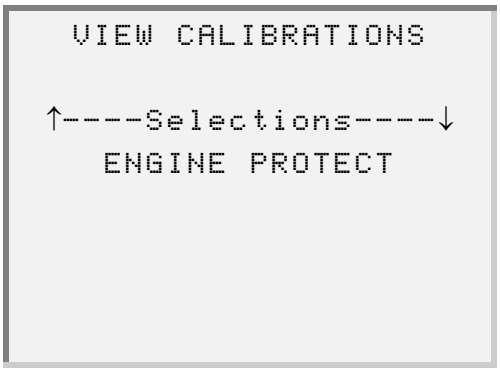
To view engine protection information:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**.



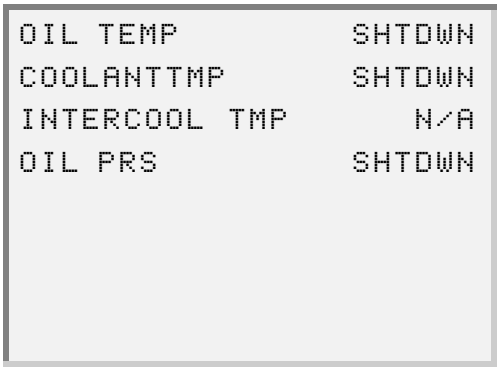
The screen displays the **View Calibrations** menu.

2 Select **ENGINE PROTECT**.



The system briefly displays a message indicating that the data is being requested.

Then the system displays the data. For example:



3 Press the ▲ or ▼ key to scroll through the screen data, as needed.

4 To exit the screen, press FUNC.

View Cruise Control Information

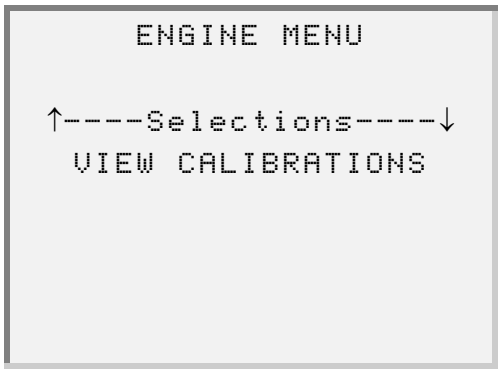
Use the **CRUISE CONTROL** option to view cruise control information that is currently programmed in the DDEC III/IV calibration.

NOTE:

See “Cruise Control Configuration”, on page 158 for a list of all cruise control parameters and their corresponding values.

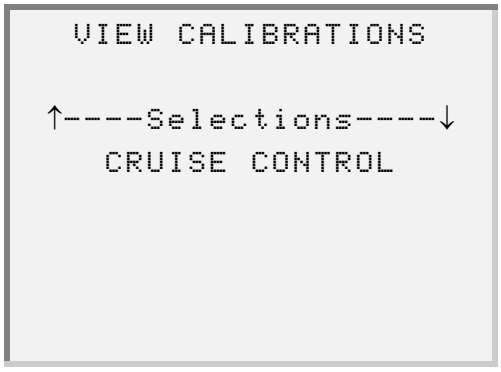
To view cruise control information:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**.



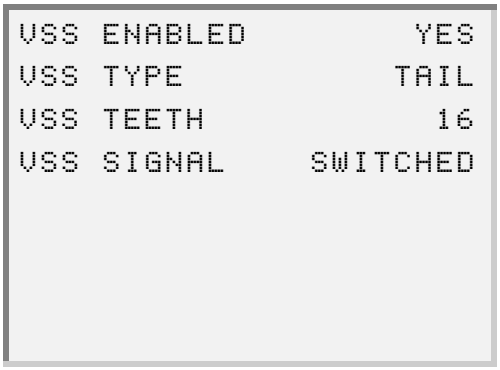
The screen displays the **View Calibrations** menu.

2 Select **Cruise Control**.



The system briefly displays a message indicating that the data is being requested.

Then the system displays the data. For example:



3 Press the [▲] or [▼] key to scroll through the screen data.

4 To exit the screen, press [FUNC].

View Progressive Shift Information

Use the **Progressive Shift Information** option to view progressive shift information that is currently programmed in the DDEC III/IV calibration.

NOTE:

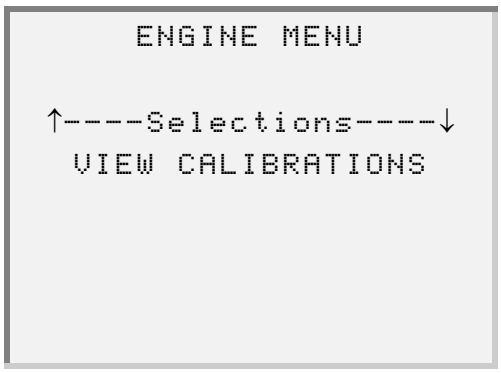
This feature is only available if the vehicle is equipped with a vehicle speed sensor (VSS).

NOTE:

See “Progressive Shift Configuration”, on page 160 for a list of all progressive shift parameters and their corresponding values.

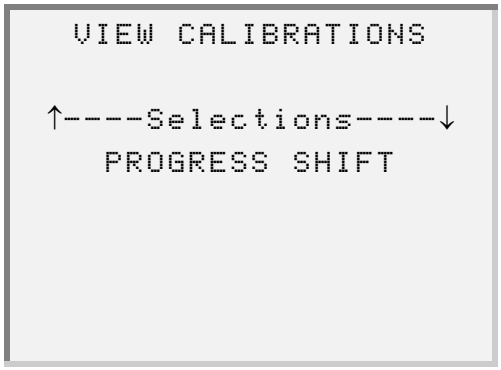
To view progressive shift information:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**.



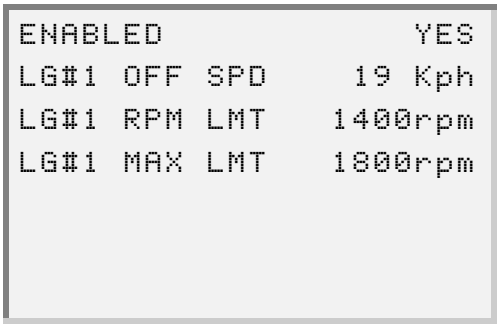
The screen displays the **View Calibrations** menu.

2 Select **Progress Shift**.



The system briefly displays a message indicating that the data is being requested.

Then the system displays the data. For example:



3 Press the [▲] or [▼] key to scroll through the screen data, as needed.

4 To exit the screen, press [FUNC].

Viewing ECM Ins/Outs

Use the **ECM INs/OUTs** option to view ECM Input and Output Configuration information that is currently programmed in the DDEC III/IV calibration, via the Pro-Link®.

Please keep the following in mind when viewing the ECM Input/Output data on the Pro-Link® screen:

- The value for each of the parameters may be displayed as “FUNCTION DESCRIPTION” or “NONE”.
- “N/A” will be displayed if a function number of 0 has been assigned to any of the connector cavities.
- The connector cavity designations describe the physical locations of the assigned functions.

NOTE:

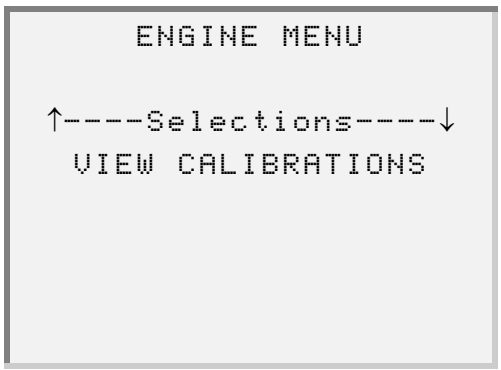
See “ECM Input/Output Configuration”, on page 162 for a list of all ECM Input/Output parameters.

NOTE:

For Multi-ECM Engines, there will be a separate menu for R1 (MID 175) and R2 (MID 183).

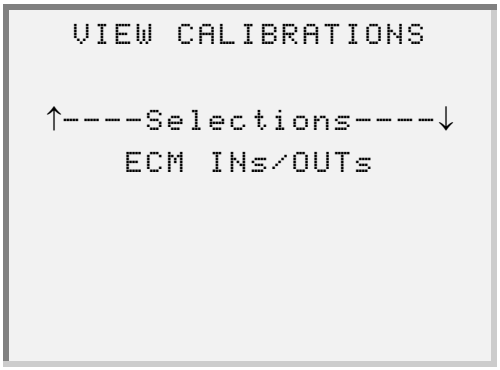
To view ECM Ins/Outs information:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**.

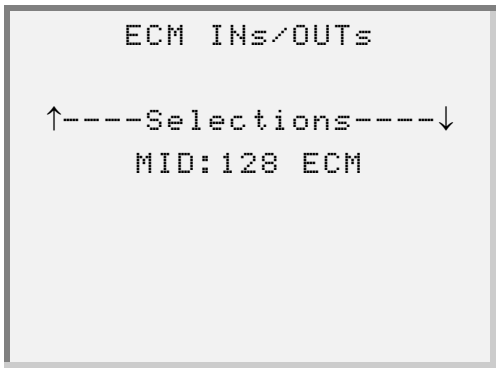


The screen displays the **View Calibrations** menu.

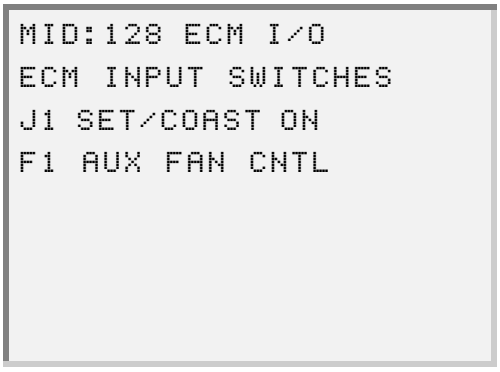
2 Select **Ecm INs/OUTs**.



The screen displays the **ECM INs/OUTs** menu.



3 Press [ENTER]. The system briefly displays a message indicating that the data is being requested. Then the system displays the data. For example:



4 Press [FUNC] to exit the screen.

Viewing Air Compressor Information

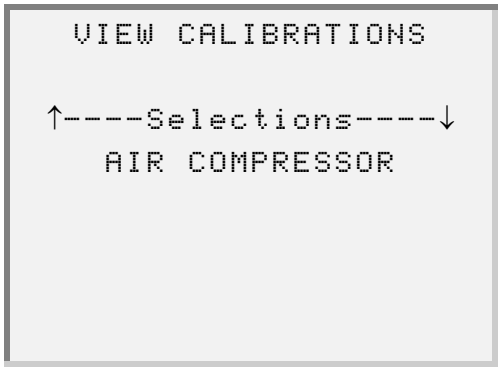
Use the **AIR COMPRESSOR** option to view air compressor information that is currently programmed in the DDEC III/IV calibration.

NOTE:

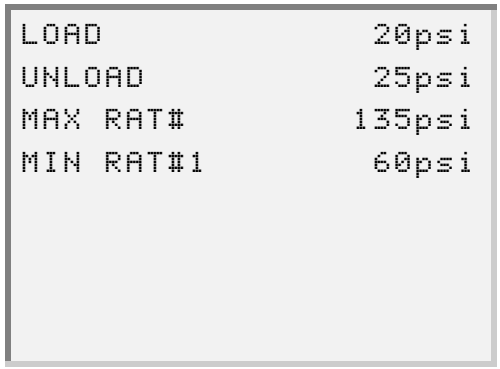
See “Air Compressor Configuration”, on page 164 for a list of all air compressor parameters.

To view air compressor information:

1. From the **Engine Menu**, select **VIEW CALIBRATIONS**. The screen displays the **View Calibrations** menu.
2. Select **Air Compressor**.



The screen displays the air compressor data. For example:



If the air compressor function is not enabled on the ECM, the screen displays a message indicating, “Air Compressor Not Available”. Press ENTER *to exit the screen.*

3 Press the [▲] or [▼] key to scroll through the data, as needed.

4 To exit the screen, press [FUNC].

Using Function Lockout

Use the **Function Lockout** option to enable password protection for the individual re-program calibration menus.

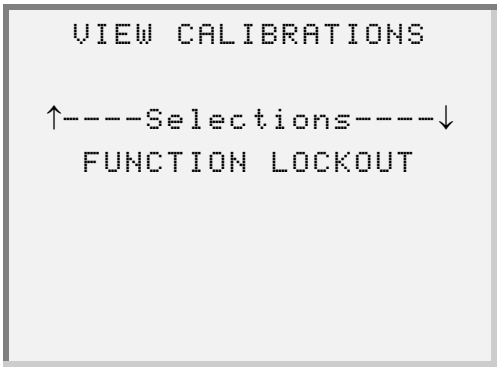
NOTE:

See “Function Lockout Configuration”, on page 164 for a list of function lockout parameters that is available to view.

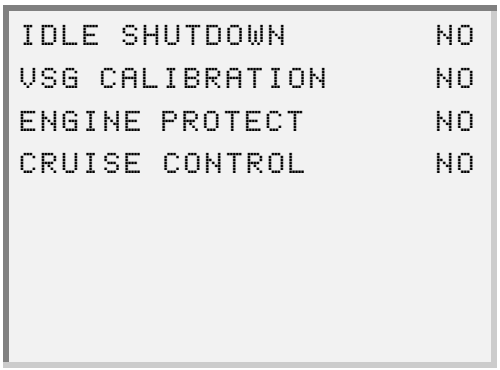
To use the function lockout feature:

1 From the **Engine Menu**, select **VIEW CALIBRATIONS**. The screen displays the **View Calibrations** menu.

2 Select **Function Lockout**.



The screen displays a message indicating that the data is being requested, then displays the data. For example:



3 Press the [▲] or [▼] key to scroll through the screen data, as needed.

4 To exit the screen, press [FUNC].

Using Fuel Injector Info

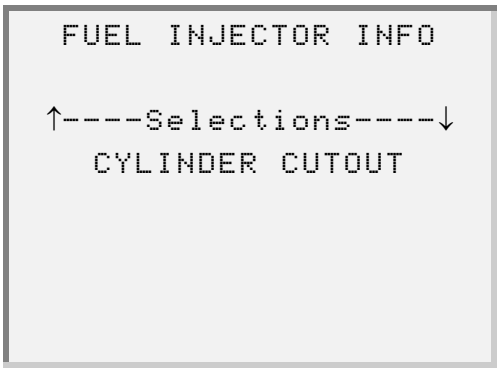
The **Fuel Injector Info** feature provides the following options:

- Cylinder Cutout (pg. 41)
- Response Times (pg. 49)
- CAL Update (pg. 50)
- Change Password (pg. 56)
- Description Option (pg. 59)

Use the following procedure to access the **Fuel Injector Info** menu.

To access the fuel injector information menu:

1. From the **Engine Menu**, select **FUEL INJECTOR INFO**. The screen displays the **FUEL INJECTOR INFO** menu.



2. Press the ▲ or ▼ key to scroll through the available options.
3. Press ENTER to select the desired option.

Using Cylinder Cutout

The **Cylinder Cutout** option provides a test method to locate a cylinder whose output is different from the others. This is done by cutting one injector at a time and comparing the resulting injector pulse width to the base pulse width established before the first cylinder was cutout.

This option allows you to:

- run a new automatic test (see ”Automatic Test”, below)
- run a new manual test (see “Manual Test”, on page 44)
- review results of a previous test (see “Review Previous Test Results”, on page 48)

Automatic Test

When running a test in automatic mode, the Pro-Link® controls the entire test and displays the results as they occur.

First, the engine is allowed to run with all injectors operating. The resulting injector pulse width is recorded on the first line. The bottom line contains the engine RPM.

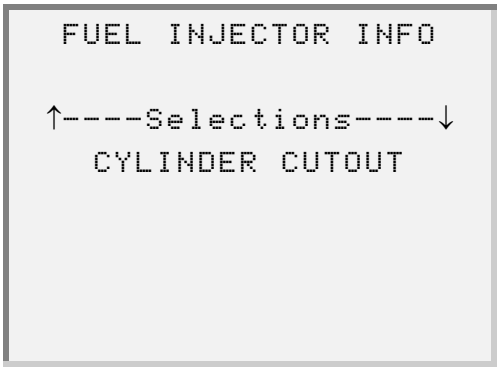
After establishing the base pulse width, the Pro-Link® cuts out each injector in turn. The pulse width that results for each cylinder is displayed. This process repeats until all injectors have been cut out.

NOTE:

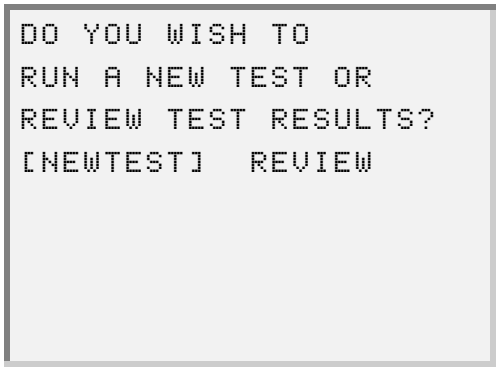
Once the test has completed, you can print out the results by pressing the 0 key on the Pro-Link®, while viewing the results.

To run a new automatic test:

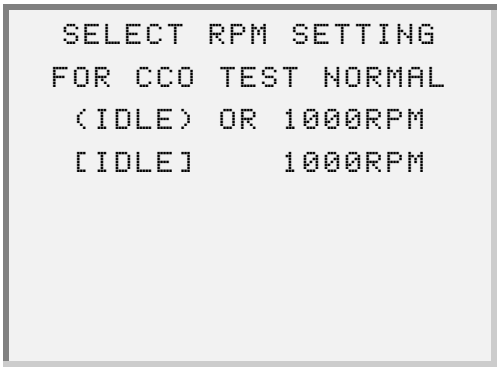
1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



2 Select **CYLINDER CUTOUT**. The screen displays the following message:

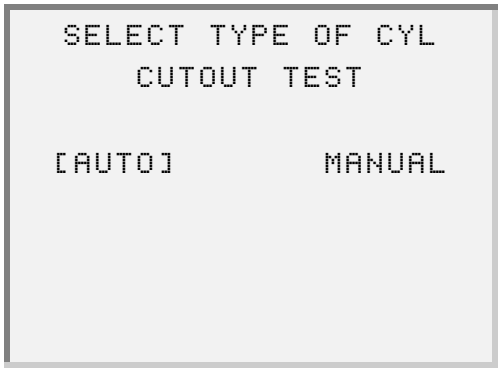


3 Select **NEWTEST**. The screen prompts you to select **IDLE** or the rpm setting.

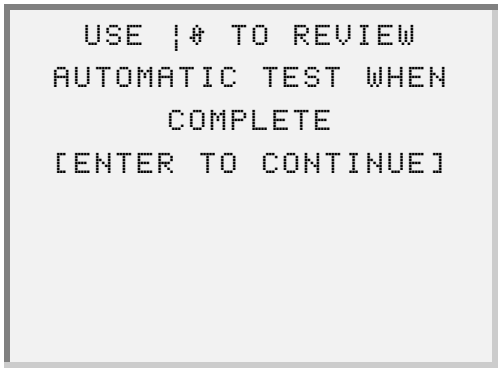


4 Select the desired setting.

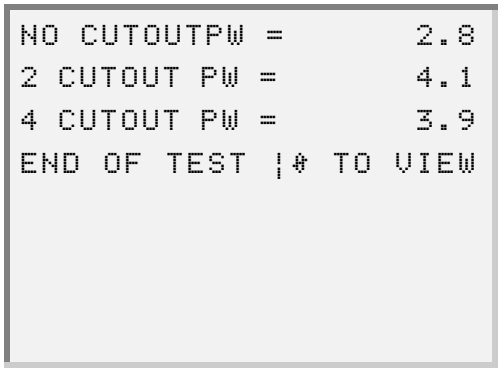
The screen prompts you to select the test type.



5 Select **AUTO**. The screen displays the following message:



6 Press ENTER. The screen displays the results as they occur.



NOTE:

The RPM displays on the last line of the screen until the test completes.

7 Press the [▲] or [▼] to scroll through the test results, as needed.

8 Press [FUNC] to exit the screen and return to the **FUEL INJECTOR INFO** menu.

Manual Test

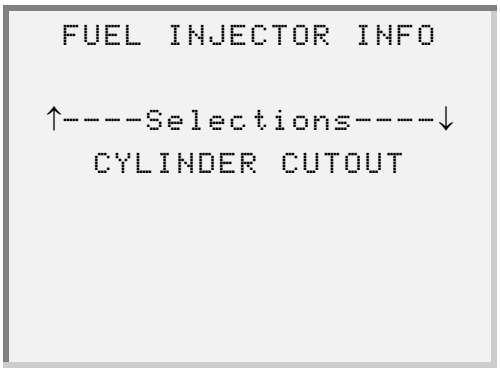
Running a manual test is similar to running an automatic test, except that you choose the cylinder(s) to be cut out, rather than the Pro-Link® cutting out each cylinder in-turn.

NOTE:

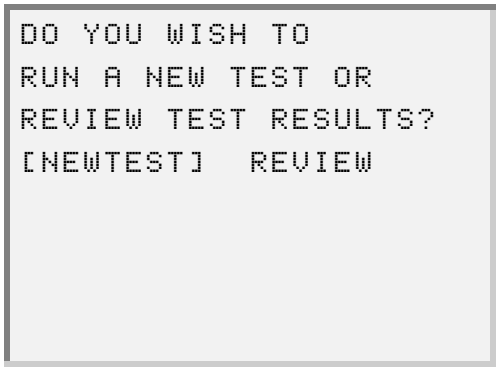
Once the test has completed, you can print out the results by pressing the [0] key on the Pro-Link®, while viewing the results.

To run a new manual test:

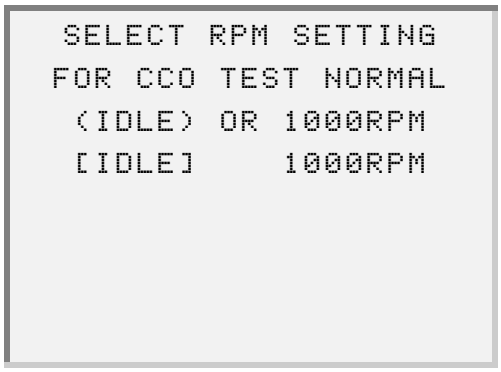
1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



2 Select **CYLINDER CUTOUT**. The screen displays the following message:

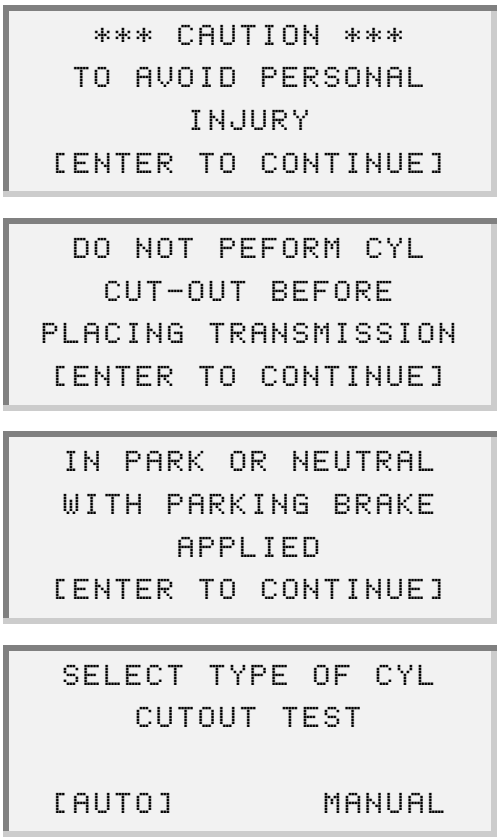


3 Press ENTER to select **NEWTEST**. The screen prompts you to select **IDLE** or the rpm setting.

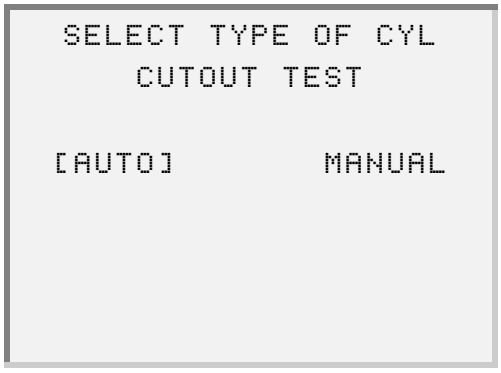


4 Select the desired rpm setting.

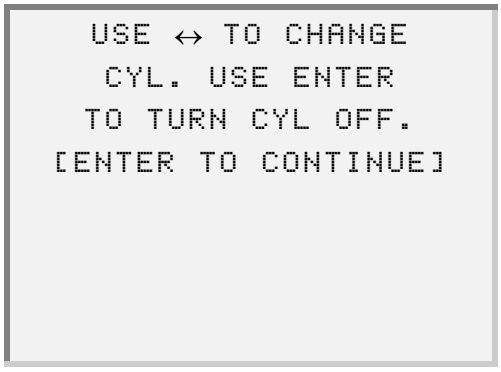
—If you select **RPM**, the screen displays the following caution. (Press **ENTER** when prompted, in order to view the entire message.)



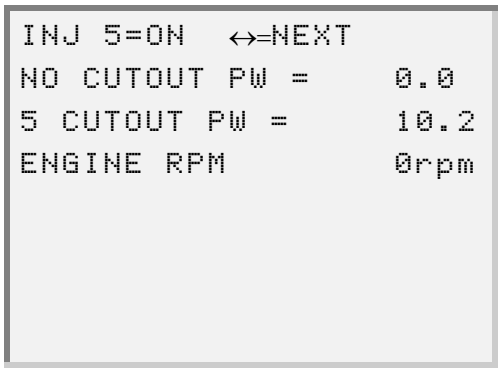
The screen prompts you to select the test type.



5 Select **MANUAL**. The screen displays the following message:



6 Press [ENTER]. The screen displays the cylinder information.



—Press the [◄] or [►] key to select a different cylinder.

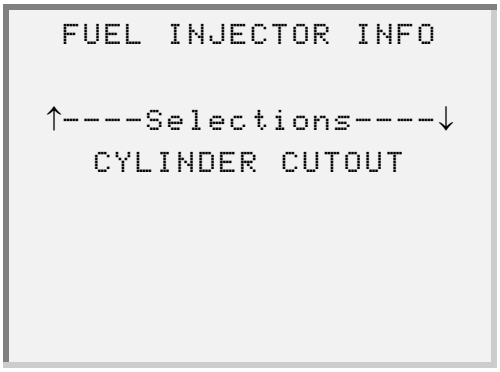
—Press [ENTER] to turn the selected cylinder on or off.

7 Press [FUNC] to exit the screen.

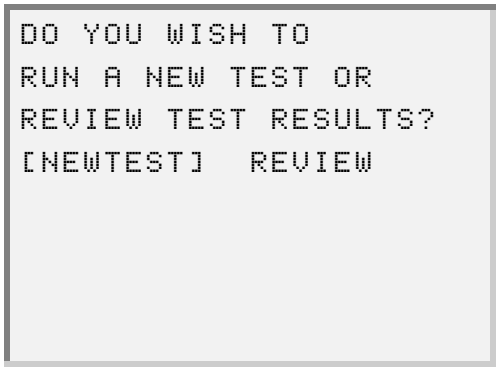
Review Previous Test Results

To review the results of a previous test:

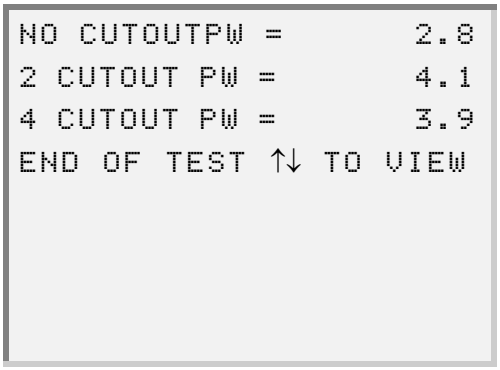
1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



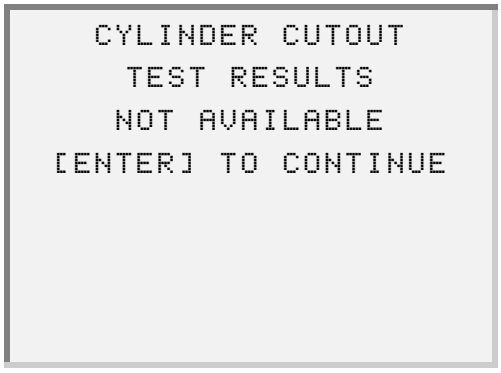
2 Press [ENTER] to select **CYLINDER CUTOUT**. The screen displays the following message:



3 Select **Review**. The screen displays the test results. For example:



—If no test results are available, the screen displays the following message:



Press [ENTER].

4 To exit the test option, press [FUNC].

Viewing Response Times

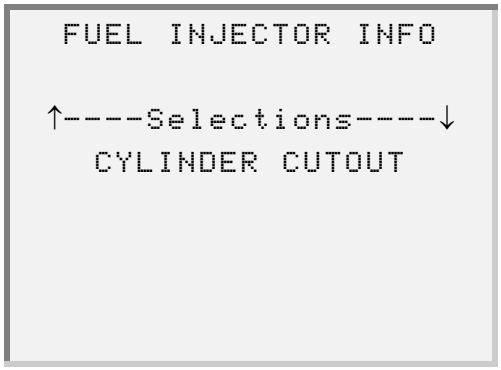
The injector solenoid response times are defined as the time from the point where current is turned on to the point at which closure is detected from the solenoid voltage or current waveform. Use the **Response Times** option to observe response times of each fuel injector.

NOTE:

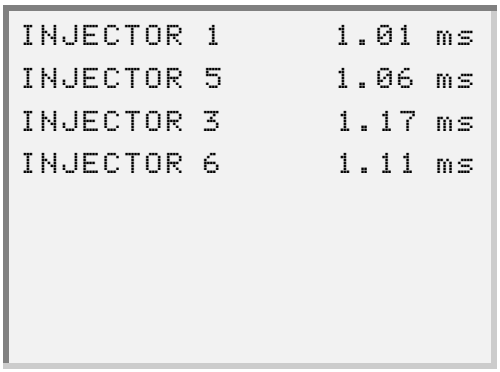
Fuel injector response times do not appear in the standard data list. You must use this function to view them.

To view response time information:

1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



2 Select **RESPONSE TIMES**. The screen displays a message indicating that the data is being requested, then displays the data. For example:



3 Press the [▲] or [▼] key to scroll through the screen data, as needed.

4 Press [FUNC] to exit the screen.

Viewing and Updating CAL Information

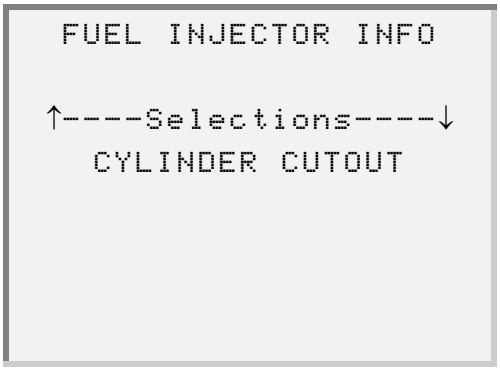
The injector calibration codes are used by the DDEC III/IV ECM to equalize the outputs of the engine injectors. This allows the ECM to perform optimum cylinder power balancing. Each injector has a unique calibration code, which is indicated on the injector label.

NOTE:

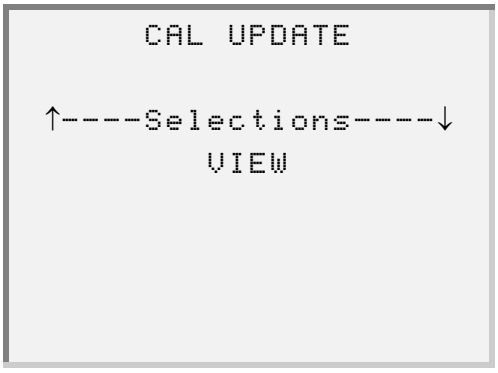
See “Injector Calibration”, on page 167 for a list of the calibrations for all cylinders.

To view injector calibration information:

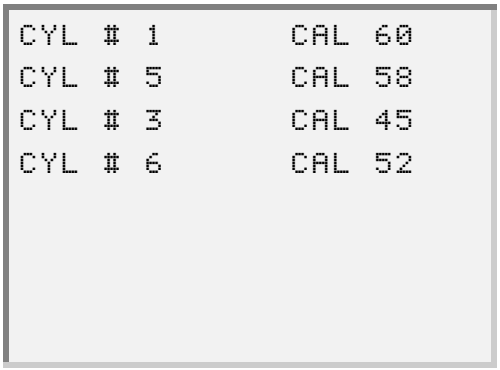
1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



2 Select **CAL UPDATE**. The screen displays the **Cal Update** menu.



3 Press [ENTER] to select **View**. The screen displays a message indicating that the data is being requested, then displays the data. For example:

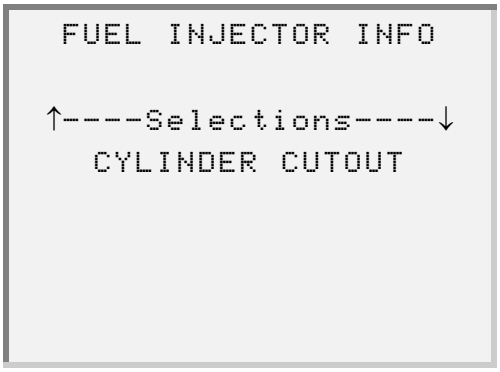


4 Press the [▲] or [▼] key to scroll through the screen data, as needed.

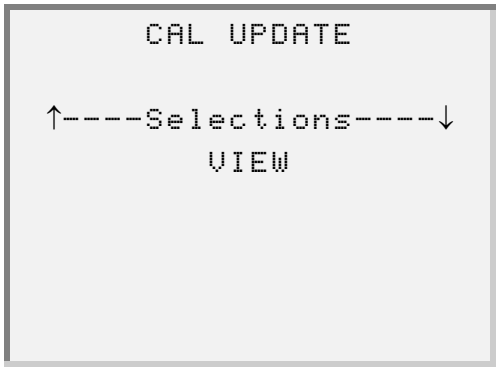
5 Press [FUNC] to exit the screen.

To update injector calibration information:

1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



2 Select **CAL UPDATE**. The screen displays the **Cal Update** menu.



3 Select **UPDATE**. The screen displays a message indicating that the data is being requested, then prompts you to enter the current password.

4 Use the Pro-Link® keypad to enter the password, as follows:

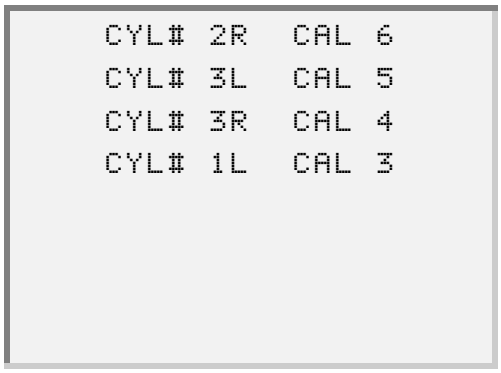
—To enter numbers, use the numeric keys.

—To enter alpha characters, use the [▲] and [▼] keys.

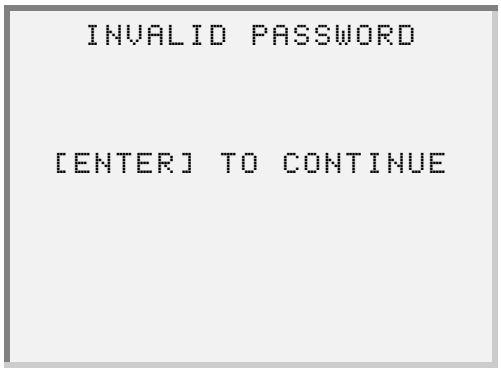
NOTE:

If you need to re-enter a digit, simply press [◄] or [►] to move to the digit, then enter the correct digit.

The screen indicates that the password is being verified, then displays the calibration data. For example:



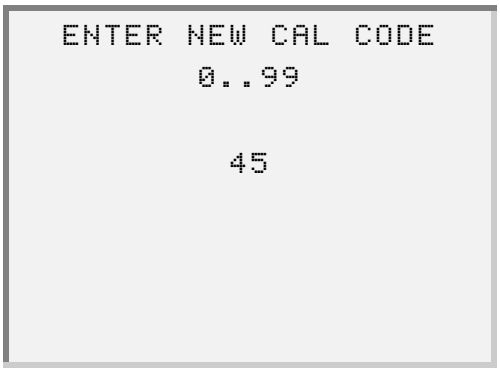
—If the password you entered is not valid, the screen displays the following message:



In this instance, press [ENTER] and re-enter the password.

5 Press the [▲] or [▼] keys to select the cylinder whose calibration you want to change, then press [ENTER].

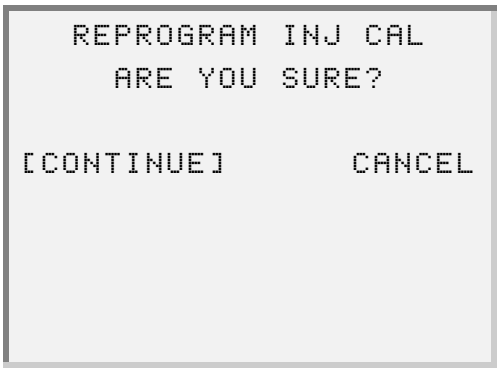
The screen prompts you to enter the new CAL Code. For example:



6 Press the numeric keys on the Pro-Link® keypad to enter the new calibration, then press [ENTER].

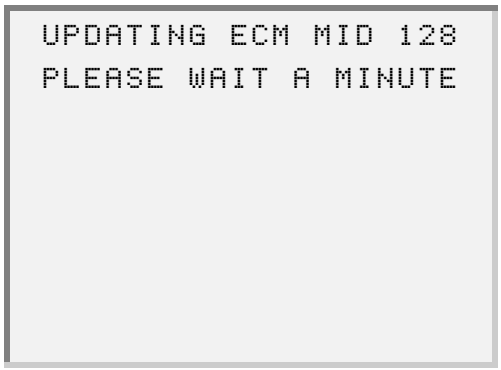
—If you want to update calibration for another cylinder, repeat **Steps 4-5.**

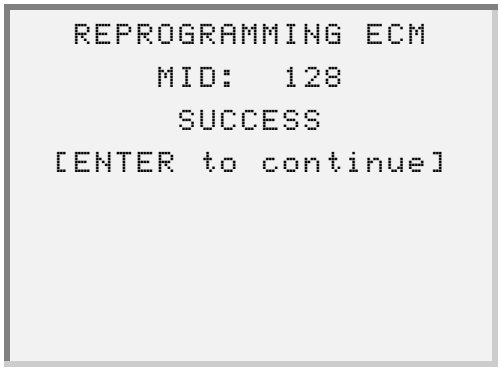
7 Press [FUNC] once you are finished entering new cylinder calibration values. The screen displays the following message:



—If you do not want to continue with reprogramming the injector calibration, select **CANCEL**, then press [ENTER].

8 Press [ENTER] to select **CONTINUE**. The screen displays the following messages:





9 Press [ENTER]. The screen returns to the **CAL UPDATE** menu.

10 Press [FUNC] to exit the screen.

Changing Passwords

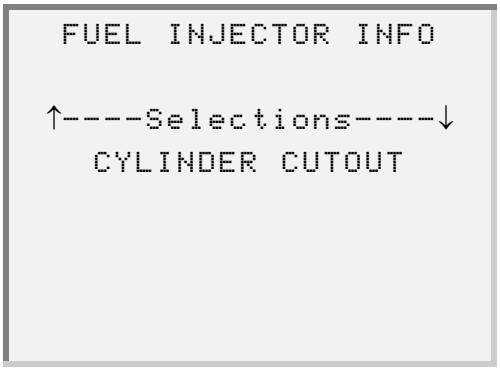
Use the **Change Password** option to change the password used for reprogramming the injector calibration.

NOTE:

The password you choose can be the same as, or different than, the passwords for change calibration and change engine rating.

To change the password:

1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



2 Select **CHANGE PASSWORD**. The the screen displays the following menu:

NOTE:

Be sure that the engine is not running and the ignition is turned to the ON position before selecting **CONTINUE**.

3 Press [ENTER] to select **CONTINUE**. The screen prompts you to enter the current password.

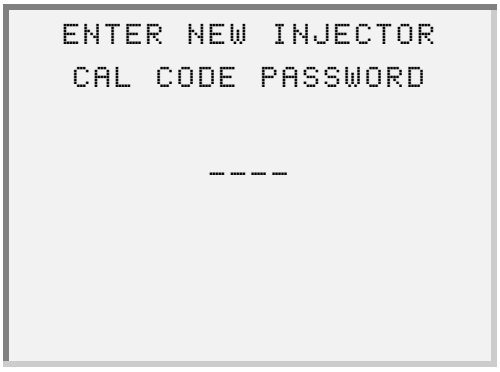
4 Use the Pro-Link® keypad to enter the password, as follows:

—To enter numbers, use the numeric keys.

—To enter alpha characters, use the [▲] and [▼] keys.

5 Press [ENTER].

The screen prompts you to enter the new password.



—If you need to re-enter a digit, simply press the [◄] or [►] key to move to the digit, then enter the correct digit.

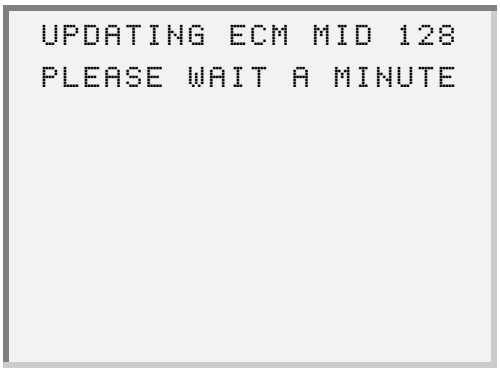
6 Use the Pro-Link® keypad to enter the password, as follows:

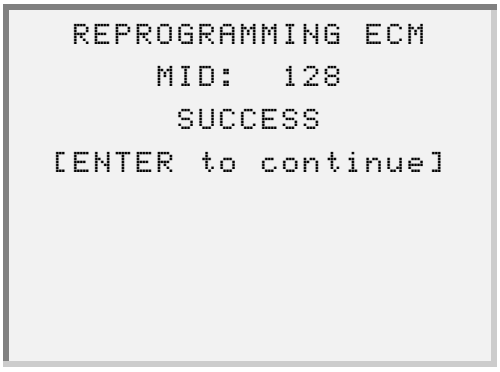
—To enter numbers, use the numeric keys.

—To enter alpha characters, use the [▲] and [▼] keys.

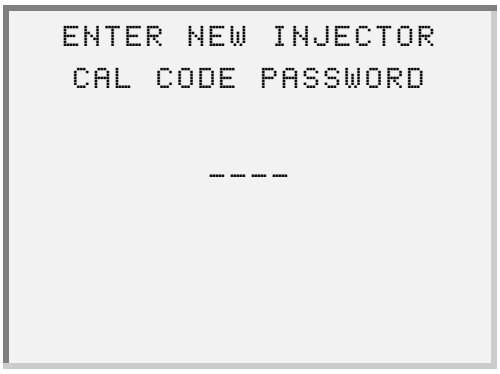
7 Press [ENTER].

The screen indicates that the ECM is being reprogrammed. For example:





The password you entered is not valid, the screen re-displays the following message:



NOTE:

If you are unsuccessful in entering a valid password three times, you must cycle the ignition key OFF, then back ON in order to attempt to enter the

password again.

8 Press [ENTER]. The screen returns to the **FUEL INJECTOR INFO** menu.

Changing Description Options

Use **Description Option** to select between “USA” and “ISO” cylinder naming conventions.

NOTE:

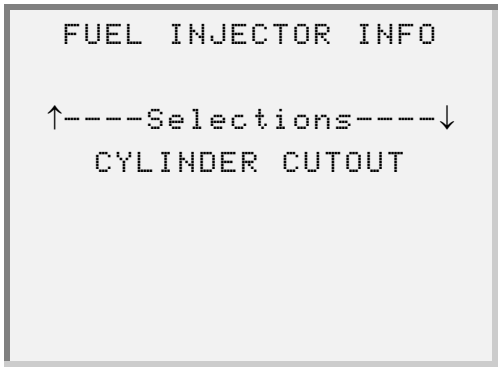
This option supports the Series 2000 and Series 4000 engines only and is not available on other engines. The factory setting for this option is “USA”.

NOTE:

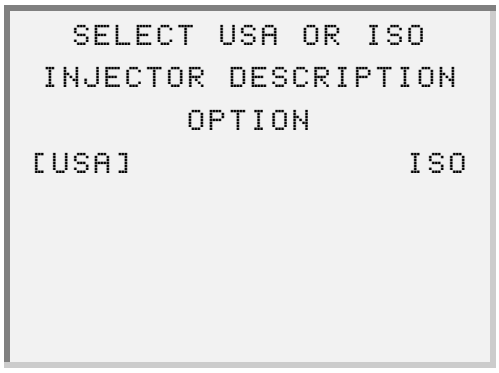
The selected option will not take effect until the Pro-Link® is powered down and powered back up. Once the selected option has taken effect, it will remain in effect until it is changed.

To use Description Option:

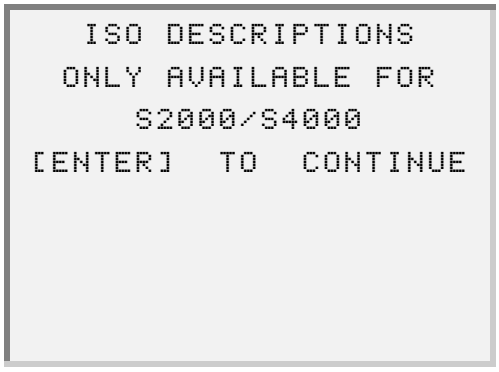
1 Be sure that the **FUEL INJECTOR INFO** menu is displaying.



2 Select **DESCRIPTION OPTION**. The screen displays the selection options.



— If your engine type is not a Series 2000 or Series 4000, the screen displays the following message:



In this instance, press [ENTER]. The screen returns to the **Fuel Injector** menu.

3 Select the desired option. The change takes effect and Pro-Link® returns to the **Fuel Injector** menu.

Viewing Engine/Trip Data

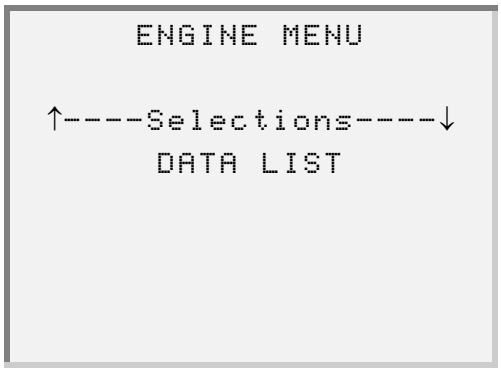
Use the **Engine/Trip Data** option to view either Total Engine Data or Engine Trip Data, as well as reset Engine Trip Data parameters.

NOTE:

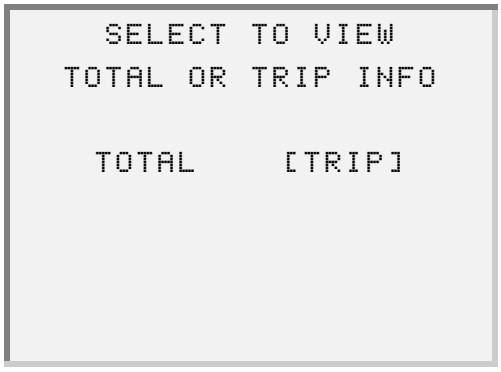
See “Total Engine Data”, on page 167 or “Engine Trip Data”, on page 168 for a list of all available engine/trip data parameters.

To view Total Engine Data:

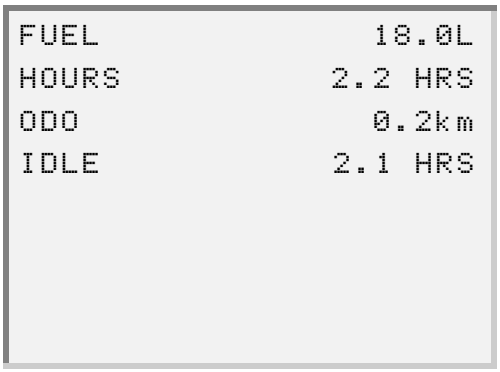
1 Be sure that the **Engine Menu** screen is displaying.



2 Select **ENGINE/TRIP DATA**. The screen displays the information options.



3 Select **TOTAL**. The screen displays a message indicating that the data is being requested, then displays the total engine data. For example:

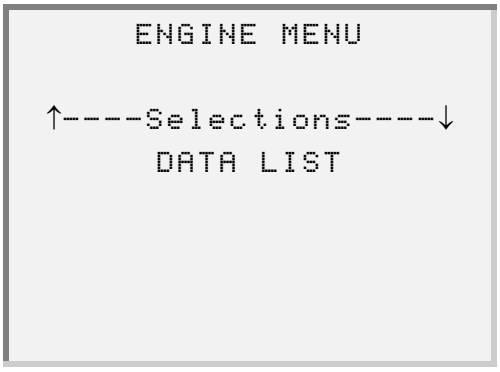


4 Press the [▲] or [▼] key to scroll through the data, as needed.

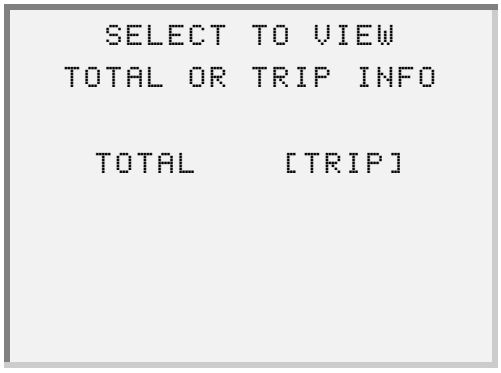
5 Press [FUNC] to exit; press again to return to the **Engine Menu**.

To view Engine Trip Data:

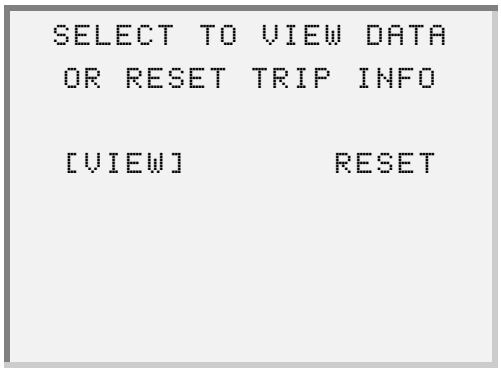
1 Be sure that the **Engine Menu** screen is displaying.



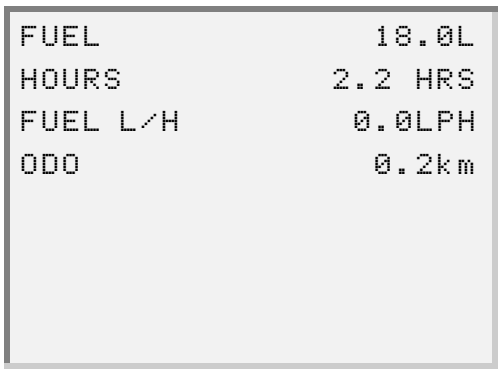
2 Select **ENGINE/TRIP DATA**. The screen displays the information options.



3 Select **TRIP.** The screen prompts you to indicate whether you want to view the data or reset the data parameters.



4 Select **VIEW**. The screen indicates that the data is being requested, then displays the data, for example:



5 Press the [▲] or [▼] key to scroll through the data, as needed.

NOTE:

See “Engine Trip Data”, on page 168 for a list of all available parameters.

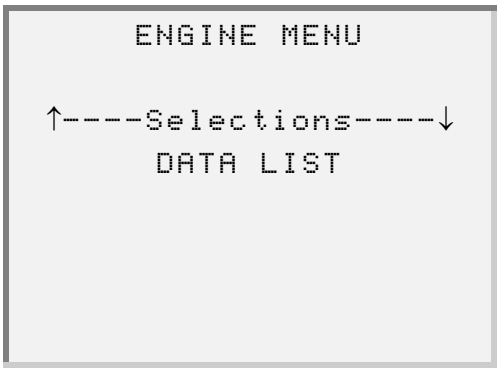
6 Press [FUNC] to exit; press again to return to the **Engine Menu**.

To reset engine trip data parameters:

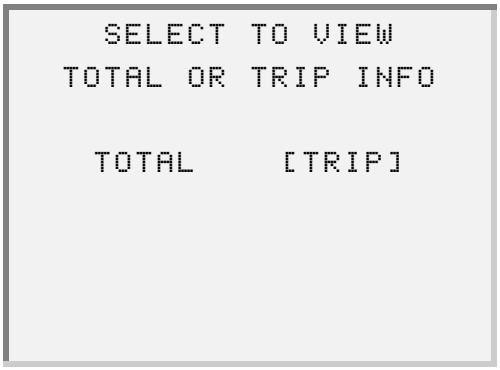
NOTE:

Using the **Reset** option resets all trip data to “0.0”

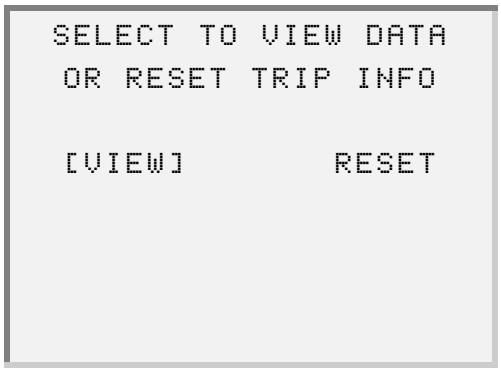
1 Be sure that the **Engine Menu** screen is displaying.



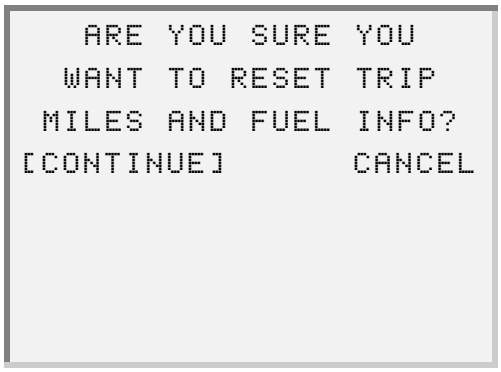
2 Select **ENGINE/TRIP DATA**. The screen displays the information options.



3 Press ENTER to select **TRIP**. The screen prompts you to indicate whether you want to view or reset the data parameters.



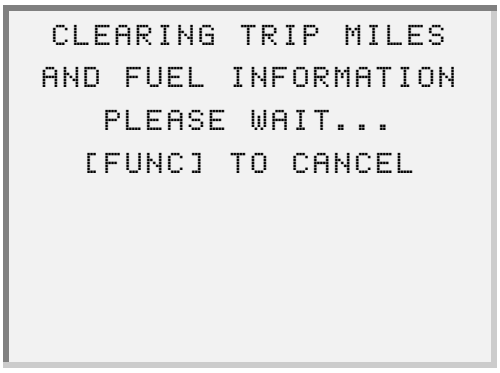
4 Select **RESET**. The screen prompts you to confirm that you want to reset the trip data.



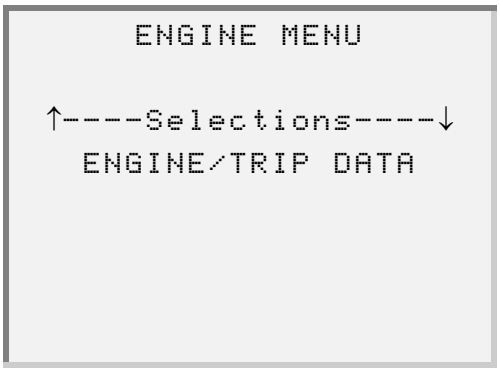
—If you want to cancel this action, press FUNC.

—To proceed, select **CONTINUE**.

The screen indicates that the trip miles are being cleared.



Once the trip miles and fuel information are cleared, the screen returns to the **Engine Menu**.



Changing Calibrations

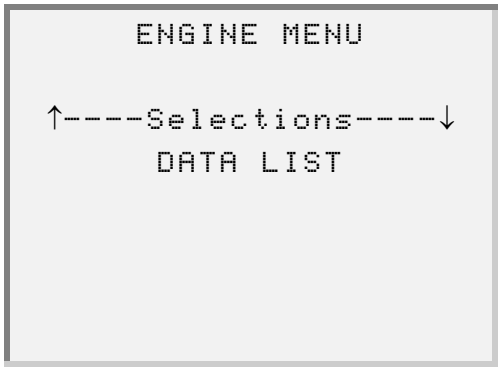
Use the **Calibration Change** feature to change engine and vehicle operation parameters that are stored in the DDEC III/IV EEPROM.

This feature offers the following options:

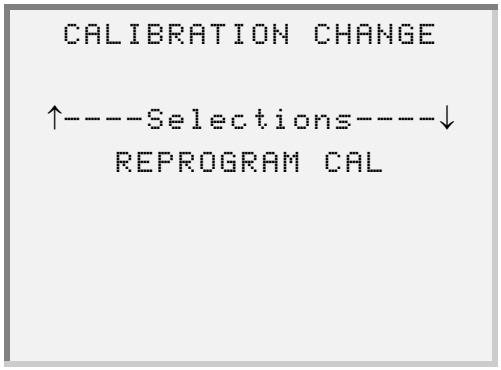
- Reprogramming Calibrations (page 68)
- Viewing Calibration History (page 73)
- Changing the Password (page 74)

To access the Calibration Change menu:

1. Be sure that the **Engine Menu** screen is displaying.



2. Select **CALIBRATION CHANGE**. The screen displays the **Calibration Change** menu.



Reprogramming Calibrations

Use the **Reprogram Cal** option to reprogram calibrations.

NOTE:

Be sure that the engine is OFF and the ignition key is turned to the ON position.

The **Reprogram Cal** menu provides the following reprogram calibration options:

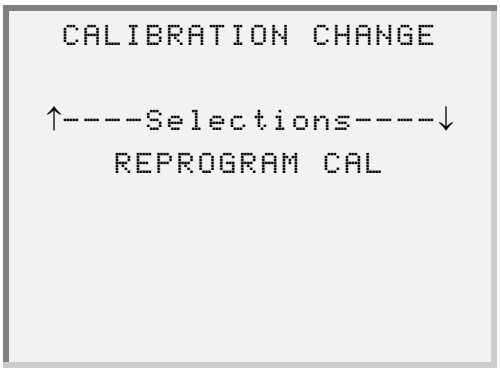
- Idle Shutdown
- VSG Calibration
- Engine Protect
- Cruise Control
- Progress Shift
- Engine Droop
- ENG/VEH Options
- Engine Rating
- Air Compressor
- Transmissions
- Maint Alert System
- Function Lockout

NOTE:

See VSG (Marine Throttle) Reprogrammable Calibration (page 171) for lists of parameters available to be reprogrammed for each calibration option.

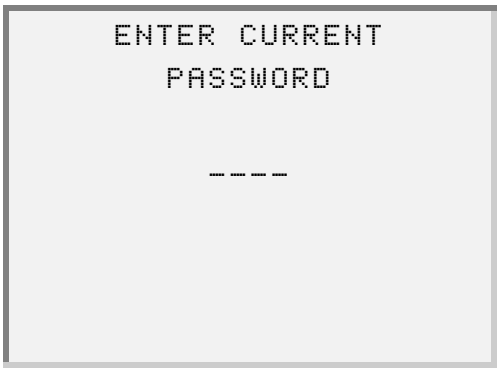
To access the Reprogram Cal menu:

1 Be sure that the **Calibration Change** menu is displaying.



2 Select **REPROGRAM CAL**.

3 The screen displays a message indicating that the data is being requested, then prompts you to enter the current password.



4 Use the Pro-Link® keypad to enter the password, as follows:

—To enter numbers, use the numeric keys.

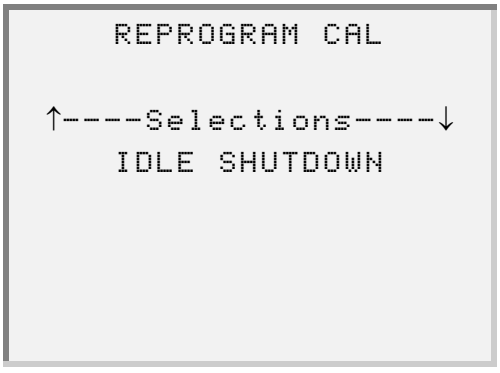
—To enter alpha characters, use the [▲] or [▼] keys.

NOTE:

If you need to re-enter a digit, simply press the [◄] or [►] key to move to the digit, then enter the correct digit.

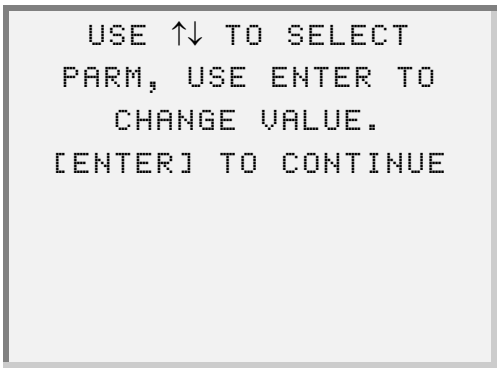
5 Press [ENTER].

6 Wait for the password to be verified. Once it is verified, the screen displays the **REPROGRAM CAL** menu.

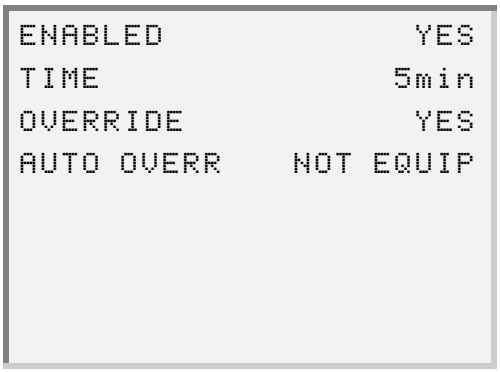


7 Select the option that you want to reprogram.

8 Follow the instructions presented on the screen.



9 Press [ENTER]. The screen briefly displays the **CALIBRATION CHANGE** menu, then displays the data corresponding to the menu option that you selected. For example:



10 Select the calibration parameter that you want to change. The screen prompts you to enter the new value. For example, the following screen shows a new value for the TIME parameter:

11 Use the Pro-Link® keypad to enter the new calibration value, as follows:

—To enter numbers, use the numeric keys.

—To enter alpha characters, use the [▲] or [▼] keys.

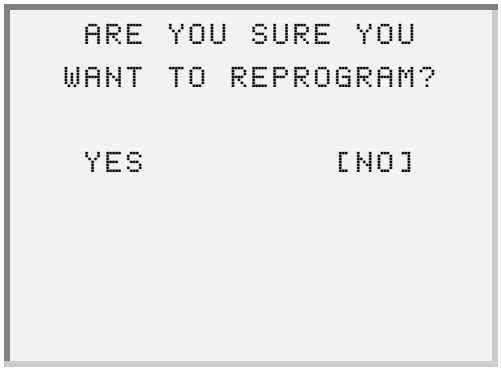
12 Press [ENTER]. The screen returns to the data display.

—If you want to enter a new value for another calibration, repeat **Steps 7 - 9**.

13 Press [FUNC].

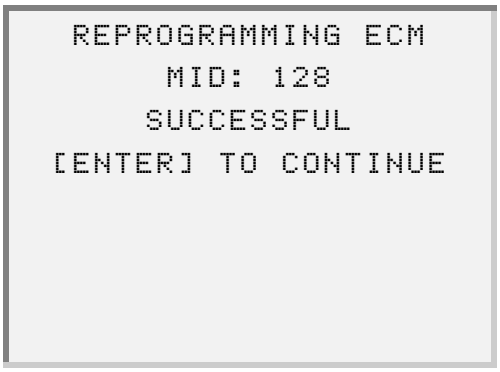
14 When you see the following screen, select **NO**.

The screen prompts you to confirm that you want to reprogram.

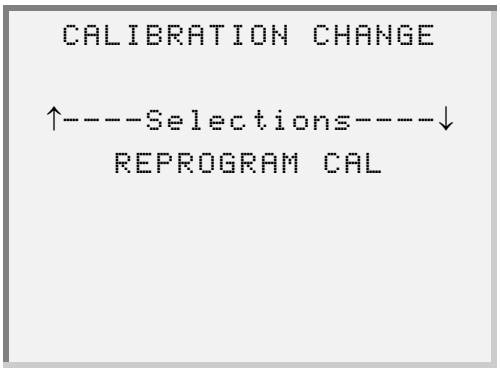


15 Select **YES**. The screen indicates the ECM is being reprogrammed.

Once the ECM is reprogrammed, the screen indicates that the reprogramming was successful.



16 Press ENTER. The screen returns to the **CALIBRATION CHANGE** menu.

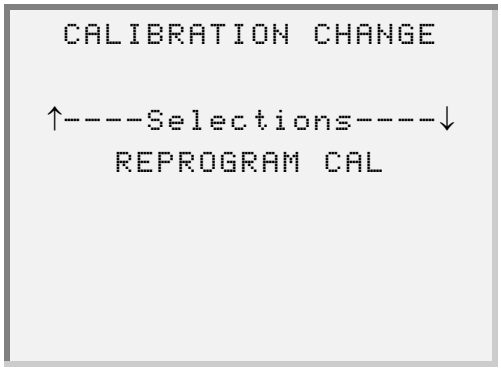


Viewing Calibration History

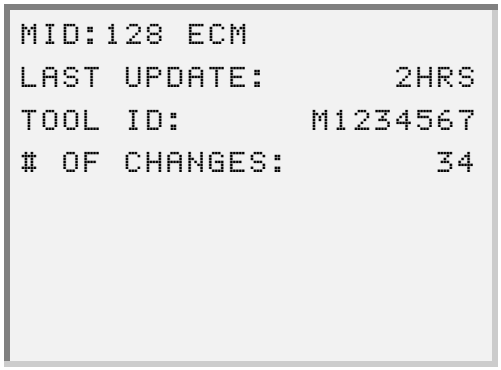
Use the **View History** option to view reprogramming history information.

To view calibration history data:

1 Be sure that the **Calibration Change** menu is displaying.



2 Select **VIEW HISTORY**. The screen displays a message indicating that the data is being requested, then displays the calibration history data. For example:



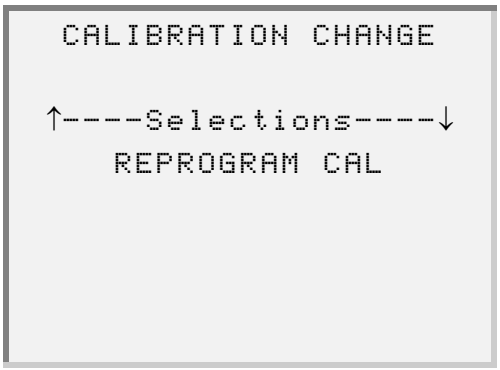
3 Press FUNC when finished viewing the data; press again to return to the **Engine Menu**.

Changing the Password

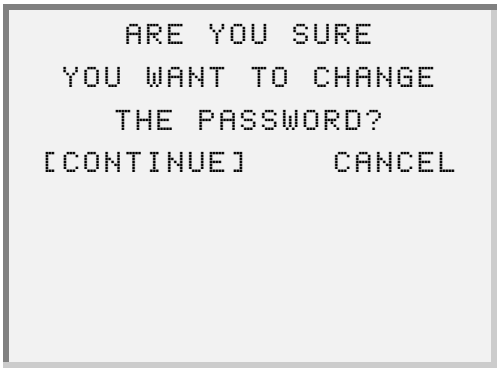
Use the **Change Password** option to change the current customer (calibration) password.

To change the calibration password:

1 Be sure that the **Calibration Change** menu is displaying, as follows:

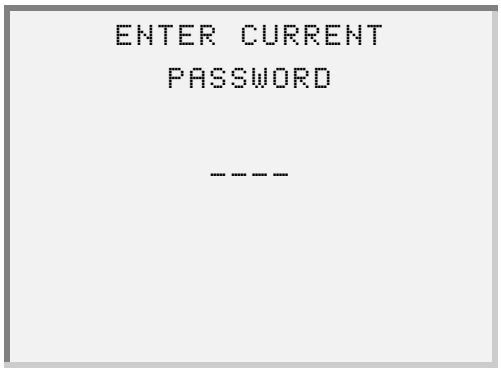


2 Select **CHANGE PASSWORD**. The screen prompts for confirmation.



—If you do not want to change the password, select **CANCEL**.

3 Press [ENTER] to select **CONTINUE**. The screen prompts you to enter the current password.



4 Use the Pro-Link® keypad to enter the current password, as follows:

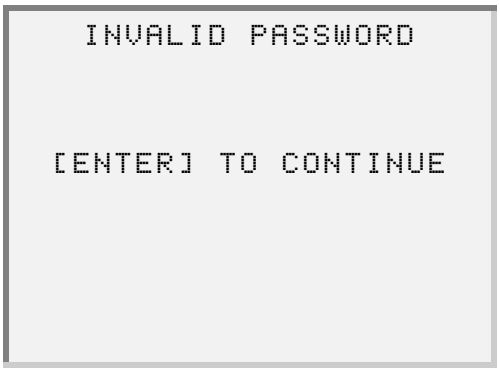
—To enter numbers, use the numeric keys.

—To enter alpha characters, use the [▲] or [▼] keys.

5 Press [ENTER].

The screen prompts you to enter the new password.

—If the password you entered is not valid, the screen displays as follows:



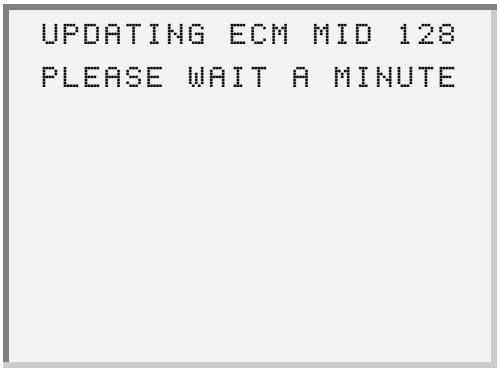
In this instance, press ENTER and repeat the process, starting at **Step 1**.

6 Use the Pro-Link® keypad to enter the new password, as follows:

—To enter numbers, use the numeric keys.

—To enter alpha characters, use the ▲ or ▼ keys.

7 Press ENTER. The screen displays the following messages:



8 Press ENTER.

The screen returns to the **CALIBRATION CHANGE** menu.

Viewing Switch/Light Stats

Use the **Switch/Light Stats** feature to view the status of various switches and lights that are inputs or outputs to the ECM.

NOTE:

The connector cavity designations describe the physical locations of the switches and lights.

This feature provides the following menu options:

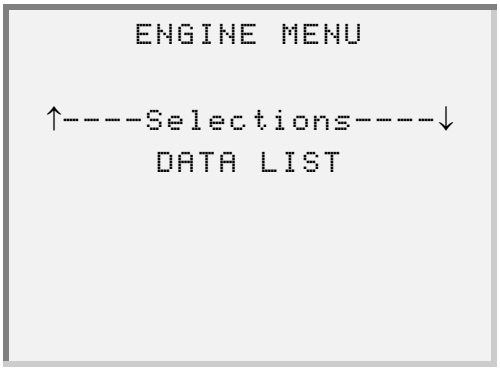
- MID: 128 ECM
- MID: 175 ECM
- MID: 183 ECM

NOTE:

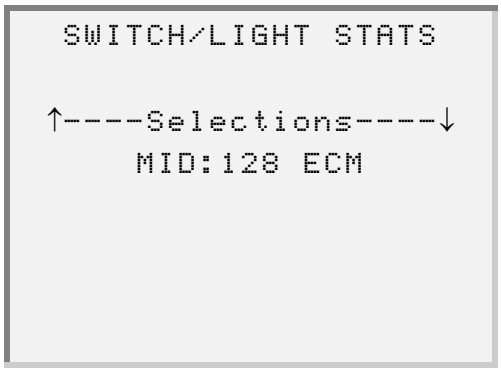
See “ECM Input Switches”, on page 186 for a list of all ECM input parameters or “ECM Output Status”, on page 187 for a list of all ECM output parameters.

To view switch/light status information:

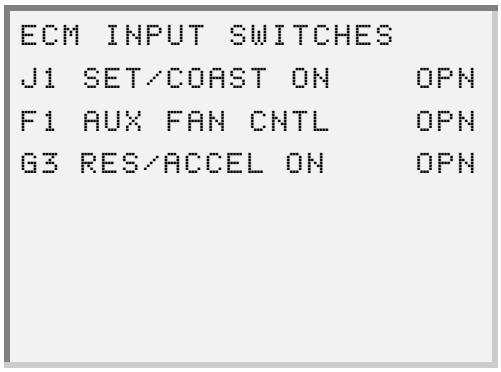
1 Be sure that the Engine Menu screen is displaying.



2 Select **SWITCH/LIGHT STATS**. The screen displays the **SWITCH/LIGHT STATS** menu.



3 Select the desired option. The screen displays a message indicating that the data is being requested, then displays the data. For example:



NOTE:

Pro-Link® identifies the assigned functions by cavity number and description. The status of the functions read as “GND”, “OPN”, “BAT”, or “N/A”.

4 Press the [▲] or [▼] key to scroll through the data, as needed.

5 Press [FUNC] when finished viewing the data.

Activating Outputs

Use the **Activate Outputs** feature to activate ECM outputs via the Pro-Link® keypad.

When this option is selected, the screen displays the connector cavity and describes the function. The connector cavity designations describe the physical locations to which the functions are assigned.

NOTE:

If the connector cavity does not have a function assigned to it, “N/A” will display.

The **Activate Outputs** menu has the following options:

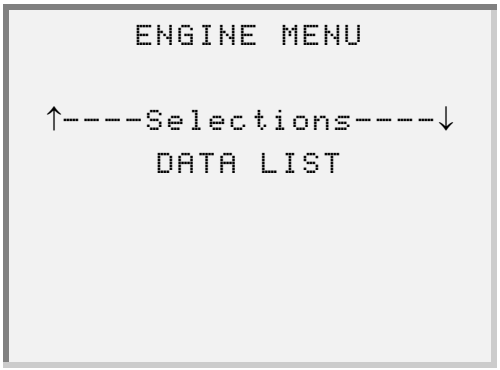
- MID: 128 ECM
- MID: 175 ECM
- MID: 183 ECM

NOTE:

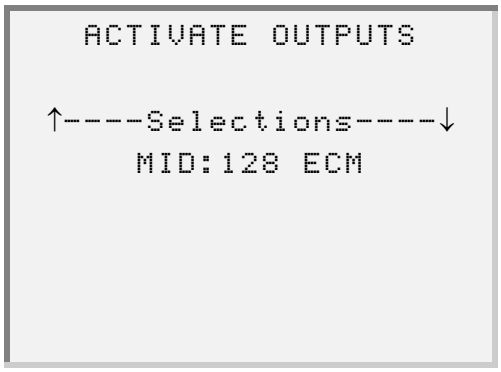
See “Activate ECM Output”, on page 189 for a list of all cavity functions.

To activate outputs:

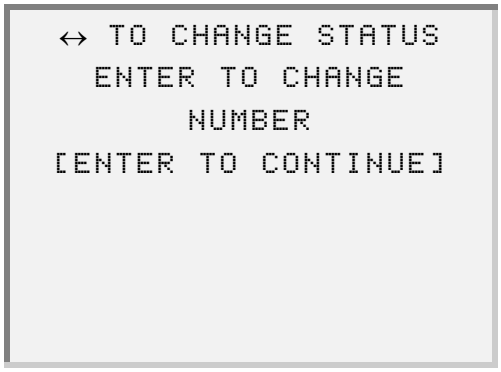
1 Be sure that the **Engine Menu** screen is displaying.



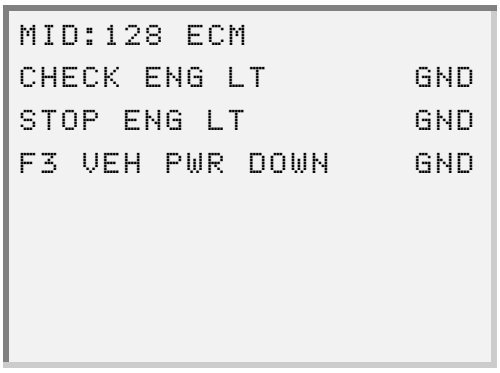
2 Select **ACTIVATE OUTPUTS**. The screen displays the **ACTIVATE OUTPUTS** menu.



3 Select the desired menu option. The screen displays the following messages:



4 Press [ENTER]. The screen displays the data. For example:



5 Press the [▲] or [▼] key to select the output data, then press [ENTER].

—To activate the output, press the [◀] or [▶] key.

—To enter a PWM value, scroll to the PWM, then press [ENTER]. The screen prompts you to enter a PWM value.

6 Press the appropriate numeric key(s) on the Pro-Link® keypad, then press [ENTER]. The screen returns to the data display.

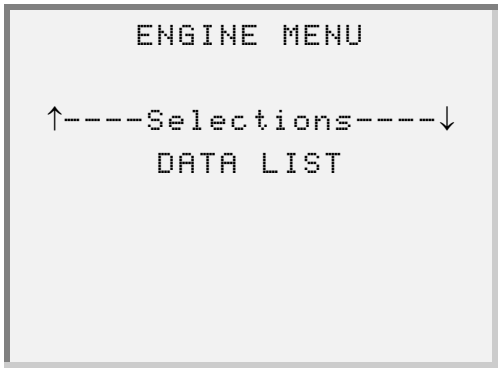
7 Press [FUNC] to exit the screen.

Viewing MIDS Received

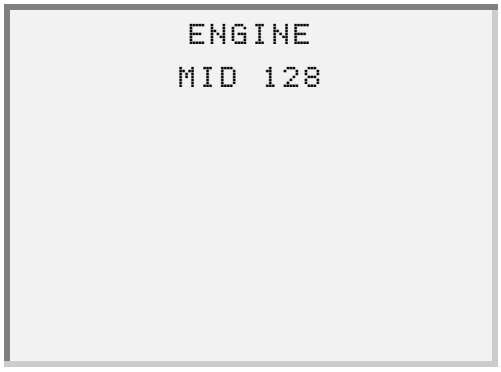
Messages are transmitted between various devices in the system using a pathway called the Serial Data Link. Because there are a great many devices in use in various applications, the Society of Automotive Engineers (SAE) and the American Trucking Association (ATA) have assigned a code number to help identify each device. These code numbers are called Message Identification numbers or MIDs. When a device is sending a message on the serial data link, part of that message is the devices MID. The Pro-Link® is able to identify these MIDs and display both the number and the name of the device, so you won't have to look them up in a chart.

To view MIDS received:

1 Be sure that the **Engine Menu** screen is displaying.



2 Select **MIDS RECEIVED**. The screen displays each device that is sending out a MID. For example:



3 Press the ▲ or ▼ key to scroll through the list, as needed.

4 Press FUNC to exit the screen.

Resetting Components

Use the **Reset Components** feature to reset the engine component life function.

NOTE:

In order to perform the engine component life function, the vehicle must be equipped with the Detroit Diesel Hub system.

NOTE:

This feature works with only DDEC III systems. It does not work with DDEC IV systems.

The **Reset Components** menu provides the following menu options:

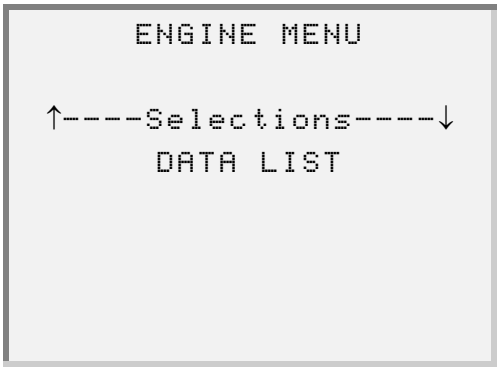
- Oil Filter
- Air Filter
- Fuel Filter
- Oil
- Coolant Inhibitor

NOTE:

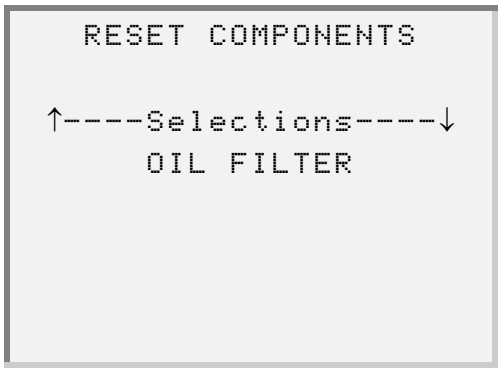
Be sure that the engine is turned OFF and the ignition key is turned to the ON position before starting this procedure.

To use the Reset Components feature:

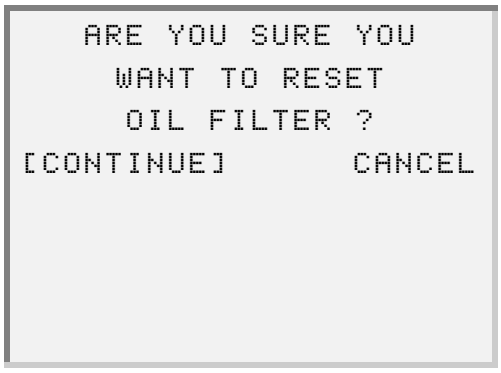
1 Be sure that the **Engine Menu** screen is displaying.



2 Select **RESET COMPONENTS**. The screen displays the **Reset Components** menu.

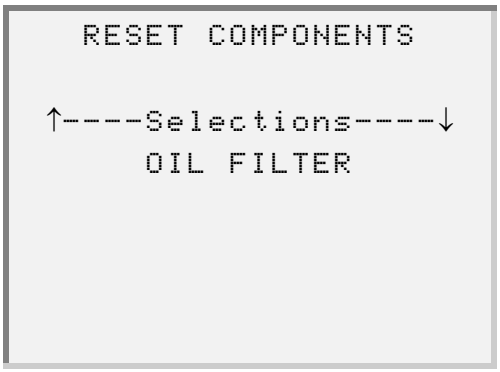


3 Press the [▲] or [▼] key to scroll to the name of the component that you want to reset, then press [ENTER]. The screen prompts you to confirm that you want to reset the selected component. For example:



—If you do not want to reset the component, select **CANCEL**.

4 Select **CONTINUE**. The component life resets and the screen returns to the **Reset Components** menu.



Transmissions

Use the **Transmissions** feature to view information for the following transmission types:

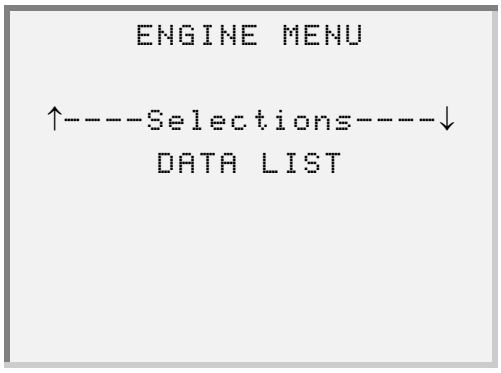
- ESS Transmission
- Top 2 Transmission

NOTE:

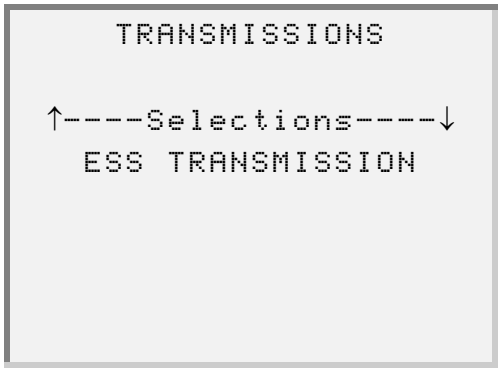
Access to these menu options will be denied if the ECM is not configured for the correct transmission types.

To access the Transmissions menu:

1 Be sure that the **Engine Menu** screen is displaying.



2 Select **Transmissions**. The screen displays the **Transmissions** menu.



Using the ESS Transmission Option

Within the **ESS Transmission** option are the following menu selections:

- Configuration (page 88)
- Performance Data (page 90)
- Trip Data (page 91)

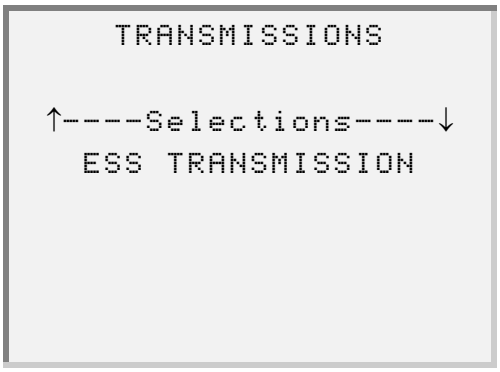
Configuration

NOTE:

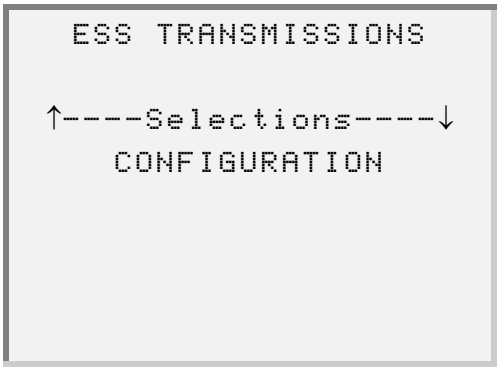
See “Transmission Configuration”, on page 191 for a list of all parameters that may be reprogrammed.

To access configuration information:

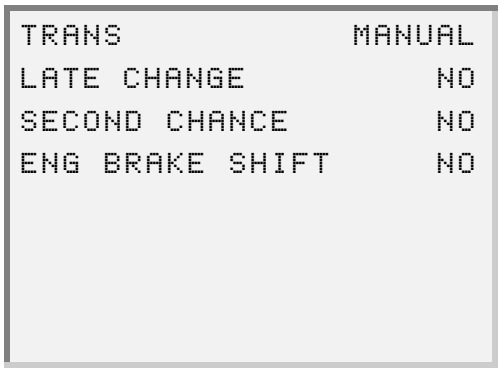
1 Be sure that the **Transmissions** menu is displaying.



2 Select the **ESS Transmission** option. The screen displays the **ESS Transmission** menu.

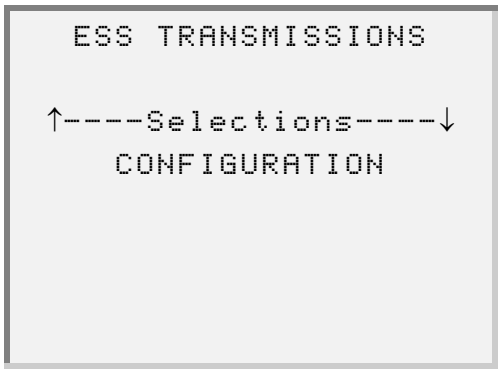


3 Select **Configuration**. The screen displays a message indicating that the data is being requested, then displays the data. For example:



4 Press the [▲] or [▼] key to scroll to through the data, as needed.

5 Press [FUNC] when finished viewing the data. The screen displays the **ESS Transmission** menu



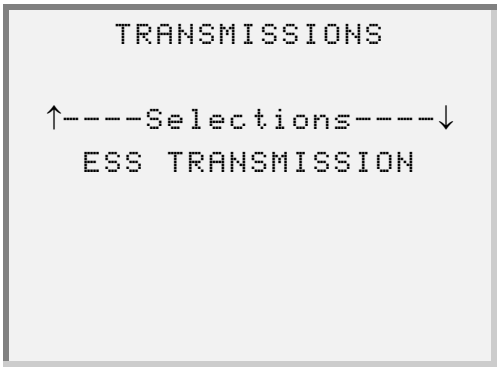
Performance Data

NOTE:

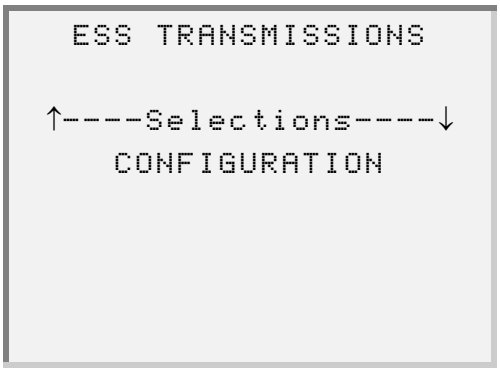
See “Performance Data”, on page 191 for a list of all parameters that may be reprogrammed using the Performance Data option.

To view performance data:

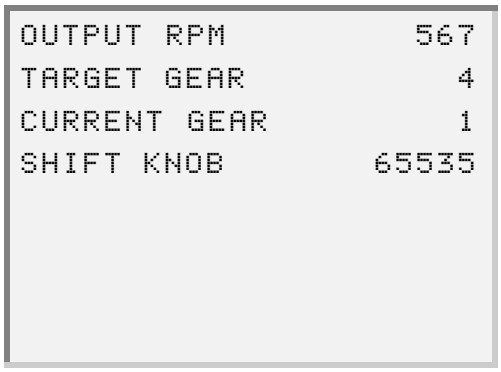
1 Be sure that the **Transmissions** menu is displaying.



2 Press ENTER to select the **ESS Transmission** option. The **ESS Transmission** menu displays.



3 Select **Performance Data**. The screen displays a message indicating that the data is being requested, then displays the data. For example:



4 Press the [▲] or [▼] key to select the parameter you want to change, then press [ENTER].

Trip Data

NOTE:

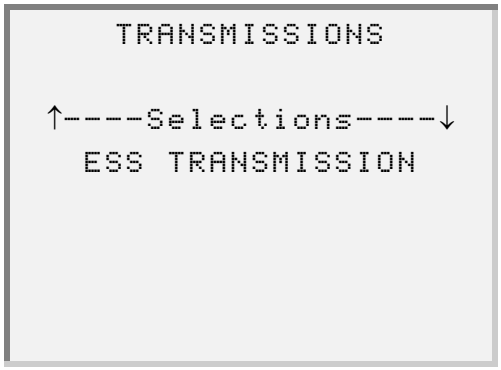
ESS Trip Data is reset when Engine Trip Data is reset.

NOTE:

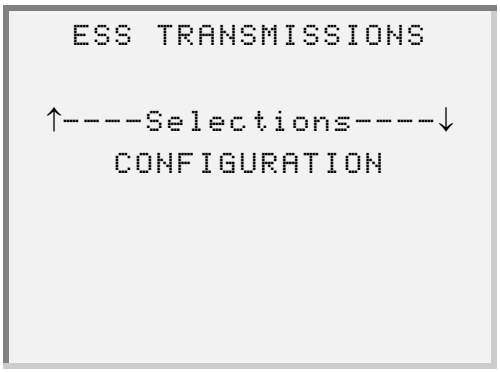
See “Transmission Trip Data”, on page 192 for a list of all parameters that may be reprogrammed using the Trip Data option.

To view trip data:

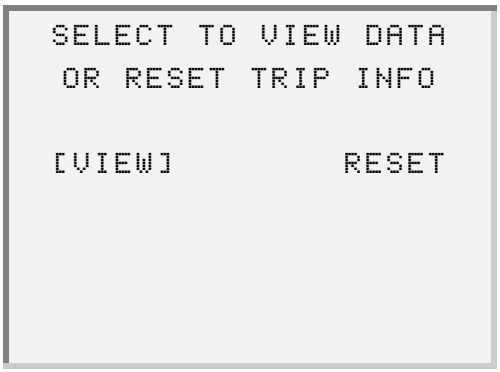
1 Be sure that the **Transmissions** menu is displaying.



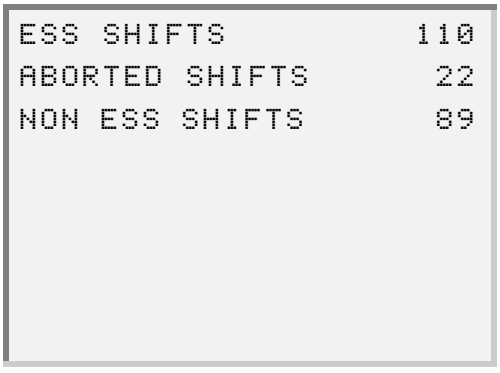
2 Select the **ESS Transmission** option. The screen displays the **ESS Transmission** menu.



3 Select **Trip Data**. The screen prompts you to indicate whether you want to view the data or reset the data.



4 Select **VIEW**. The screen displays the trip data.



5 Press the [▲] or [▼] key to scroll through the parameter information, as needed. [ENTER].

6 Press [FUNC] when finished viewing the data. The screen returns to the **ESS Transmission** menu.

Viewing Top 2 Transmission Information

Use the **Top 2 Transmission** option to verify whether the cruise master switch is enabled or disabled within the vehicle ECU.

NOTE:

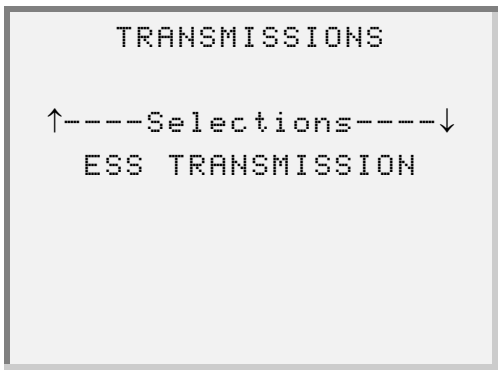
This option requires ECM software versions release 8, or release 21 and higher.

NOTE:

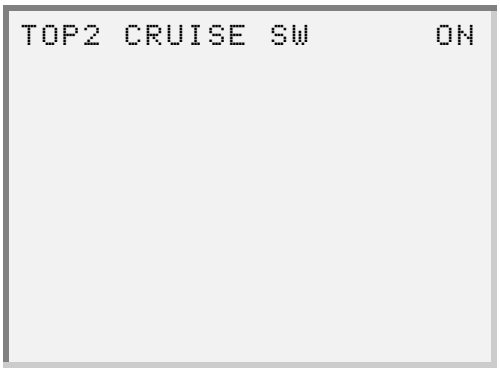
Refer to “Reprogramming Calibrations”, on page 68 for instructions on reprogramming the cruise master switch.

To verify Top 2 Transmission information:

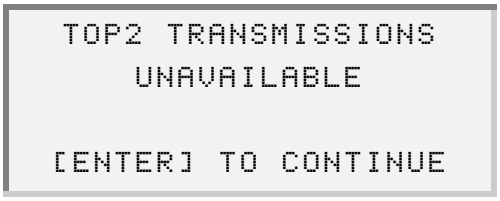
1 Be sure that the **Transmissions** menu is displaying.



2 Select **Top 2 Transmission**. The screen displays as follows:



—If the Top 2 Transmission type is not available, the following message displays:



In this instance, press [ENTER]. The screen returns to the **Transmissions** menu.

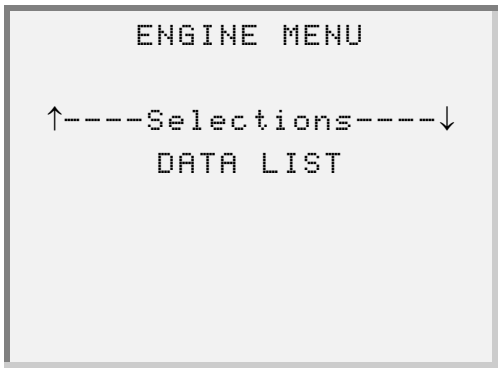
3 Press [FUNC] to exit the screen.

Reset AFR Table

Use the **Reset AFR Table** feature to set the Air Fuel Ratio (AFR) Learn Table on Natural Gas Engines.

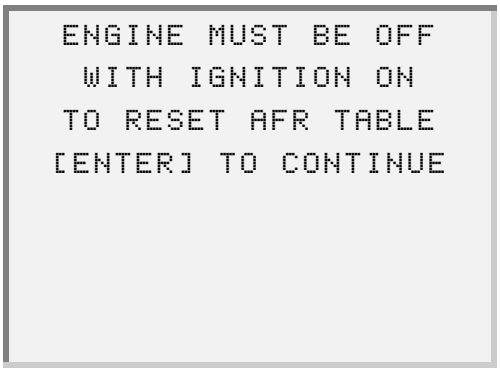
To reset the AFR Table:

1. Be sure that the **Engine Menu** screen is displaying.



2. Select **RESET AFR TABLE**. The screen indicates that the AFR Learn Table is being reset.

—If the engine is currently running, the following message displays:



In this instance, press ENTER. The screen returns to the **Engine Menu**.

—If the engine is not a natural gas engine, the following message displays:

In this instance, press ENTER. The screen returns to the **Engine Menu**.

3 Wait (up to) four seconds for the reset to complete.

—If the AFR reset is successful, the screen displays the following message:

In this instance, press ENTER. The screen returns to the **Engine Menu**.

—If the AFR reset is *not* successful, the screen displays the following message:

In this instance, press ENTER. The screen returns to the **Engine Menu**.

Maintenance Alert System

Use this feature to view the current maintenance status and to clear any maintenance related fault codes.

The **Maintenance Alert System** menu provides the following options:

- Maintenance Status (see pg. 98)
- Clear Maint Codes (see pg. 100)

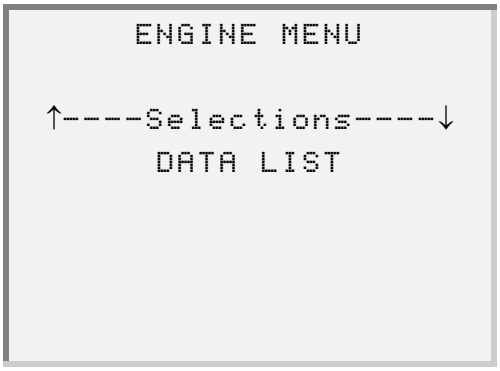
Viewing Maintenance Status Information

NOTE:

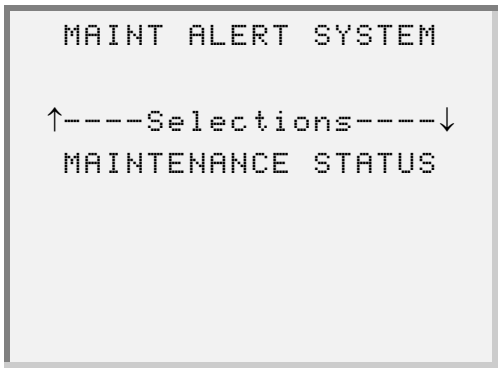
See “Maintenance Alert System Calibration”, on page 185 for a description of each of the maintenance status parameters.

To view maintenance status information:

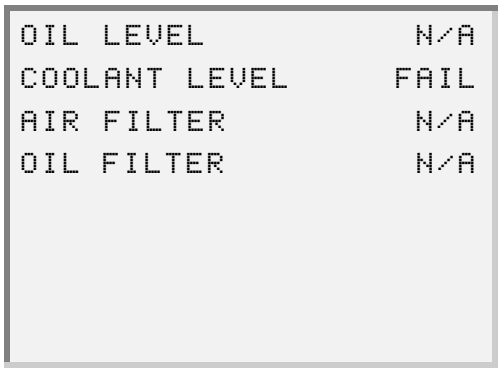
1 Be sure that the **Engine Menu** screen is displaying.



2 Select **MAINT ALERT SYSTEM**. The screen displays the **Maint Alert System** menu.



3 Select the **Maintenance Status** option. The screen displays the maintenance information. For example:



4 Press the [▲] or [▼] key to scroll through the data, as needed.

5 Press [FUNC] when finished viewing the data. The screen returns to the **Maint Alert System** menu.

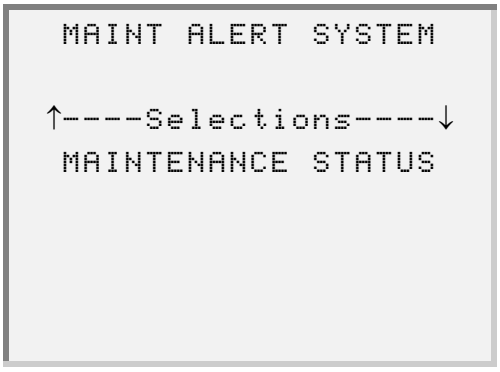
Clearing Maintenance Codes

Use the **Clear Maintenance Codes** option to clear the following inactive codes:

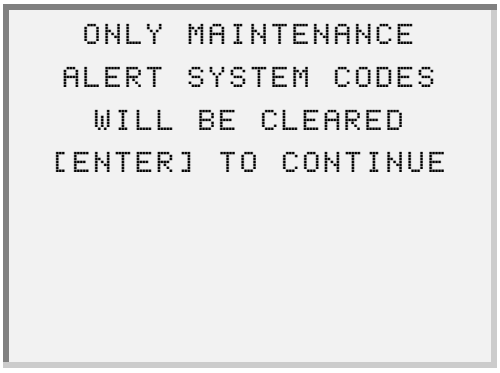
- PID 98 FMI 1 – Oil Level - Low
- PID 111 FMI 1 – Coolant Level - Low
- PID 107 FMI 0 – Air Filter Restriction - High
- PID 99 FMI 0 – Oil Filter Restriction - High
- PID 95 FMI 0 – Fuel Inlet Restriction - High

To clear maintenance codes:

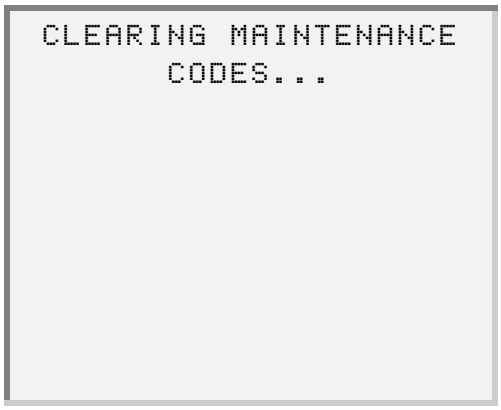
1 Be sure that the **Maint Alert System** menu is displaying.



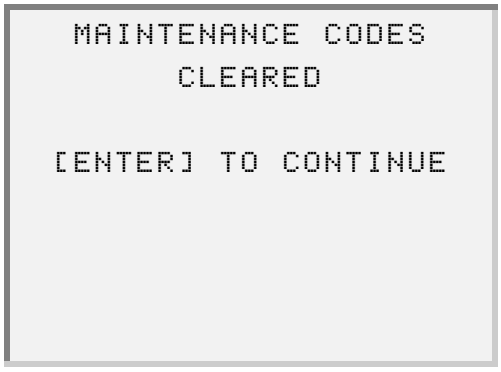
2 Select **CLEAR MAINT CODES**. The screen displays as follows:



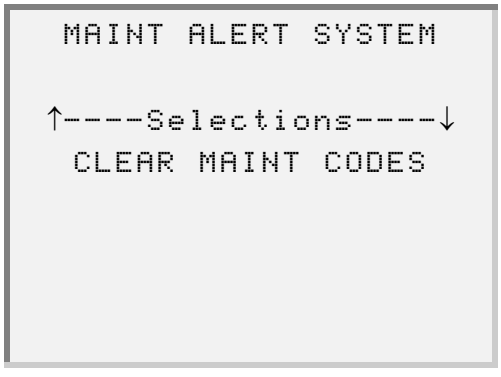
3 Press ENTER. The screen indicates that the maintenance codes are being cleared.



4 Once the codes are cleared, the screen displays as follows:



5 Press ENTER. The screen returns to the **Maint Alert System** menu.



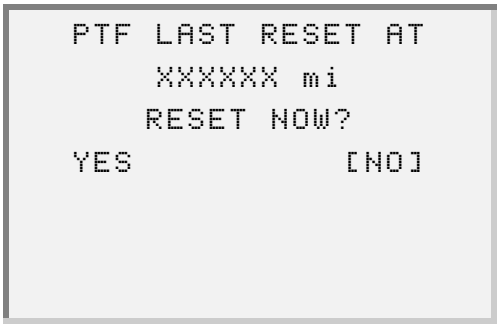
PTF Reset

Use the **PTF Reset** feature to reset the mileage after each PTF (Particulate Trap Filer) cleaning.

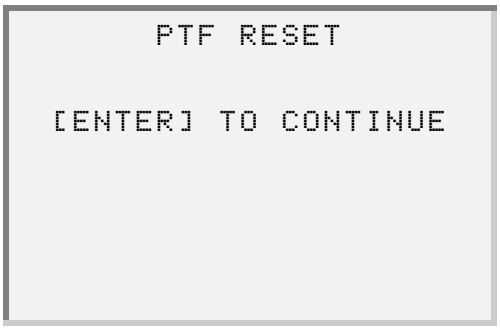
To reset the PTF:

1 From the Main Menu, select **PTF RESET**.

The screen displays the mileage at which the PTF was last reset (or "Unknown" if Page 2 Data is disabled).



2 Select **YES** to proceed with resetting the PTF. The screen indicates that the PTF has been reset.



3 Press [ENTER]. The screen returns to the Main Menu.

NOTE:

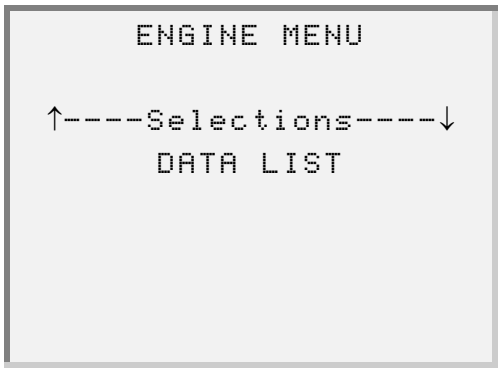
Mileage is displayed in either English or metric units depending on the current configuration. See page 104 for details.

Changing Menu Descriptions

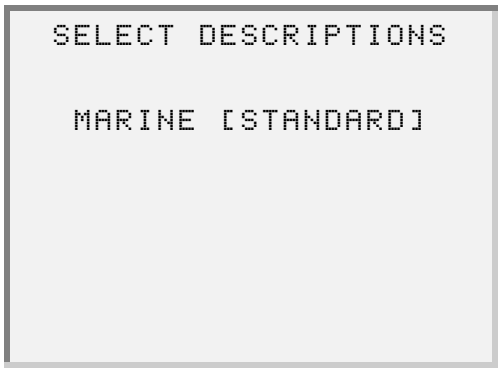
Use the **Change Menu Desc** feature to switch parameter and menu descriptions between Marine and Standard.

To change menu descriptions:

1 Be sure that the **Engine Menu** screen is displaying, as follows:



2 Press the [▼] key to select **Change Menu Desc**, then press [ENTER]. The screen displays as follows:



—Press [ENTER] to select **STANDARD**.

—Press the [◄] key to select **MARINE**, then press [ENTER]

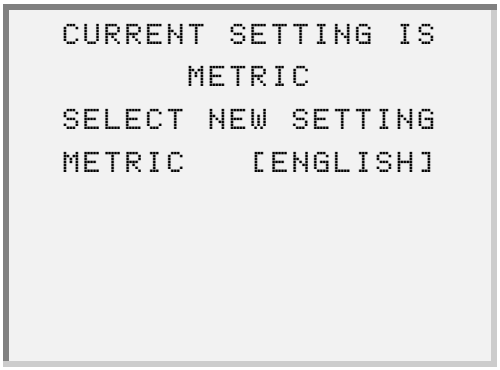
3 Press [FUNC] to exit the screen.

Selecting English/Metric

Use the **English/Metric** feature to switch parameter and menu descriptions between English and Metric.

To use the English/Metric feature:

1 From the **Engine Menu** screen, select **English/Metric**. The screen displays the current setting.



—Press ENTER to select **ENGLISH**.

—Press the ◄ key to select **METRIC**, then press ENTER

Once you have made your selection, the screen returns to the **Engine Menu**.

Chapter 4

Using the Marine Controls Application

This chapter provides instructions on accessing and using the features provided with the Detroit Diesel Marine Controls Application.

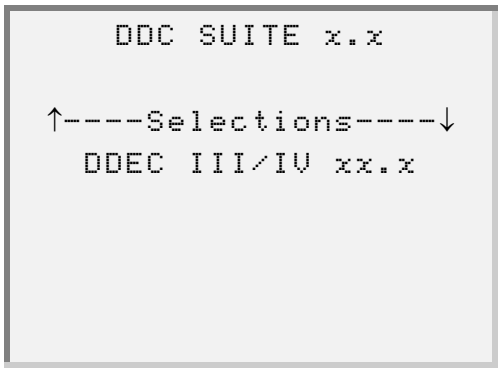
The **DDEC Marine Controls** menu provides the following options:

- Viewing the Data List (see page 108)
- Viewing Diagnostic Codes (see page 110)
- Viewing Calibrations (see page 116)
- Viewing Switch/Light Status (see page 122)
- Viewing MIDS Received (see page 124)

Accessing the DDEC Marine Controls Menu

To access the DDEC Marine Controls menu:

1 Be sure that the **DDC Suite x.x** menu is displaying.



2 Select **Marine Controls Menu**. The screen displays the **Marine Controls Menu**.

3 Press the [▲] or [▼] keys to scroll through the menu options, as needed.

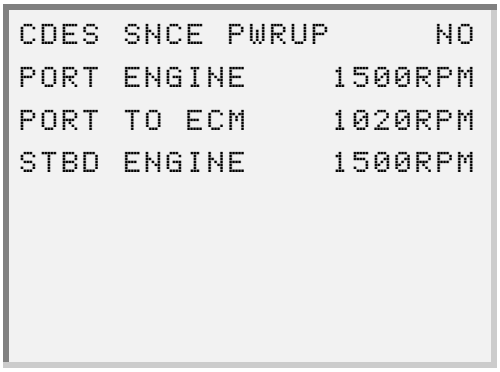
Viewing the Data List

Use the **Data List** feature to view the currently stored Marine Controls data.

To view the data list:

1 Be sure that the **Marine Controls Menu** is displaying.

2 Press [ENTER] to select **DATA LIST**. The screen displays the data list. For example:



3 Press the [▲] or [▼] keys to scroll through the data, as needed.

4 Press FUNC when finished viewing the data. The screen returns to the **MARINE CONTROLS MENU**.

Viewing Diagnostic Codes

Use this feature to view the following types of Marine Controls diagnostic codes:

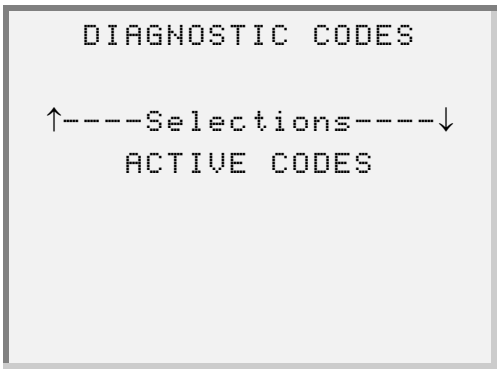
- Active Codes
- Codes Since Last Power Up
- Historic Codes

View Active Codes

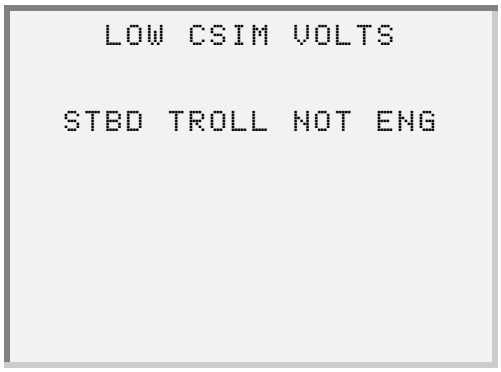
To view active diagnostic codes:

1. Be sure that the **Marine Controls Menu** is displaying.

2. Select **DIAGNOSTIC CODES**. The screen displays the **Diagnostic Codes** menu.

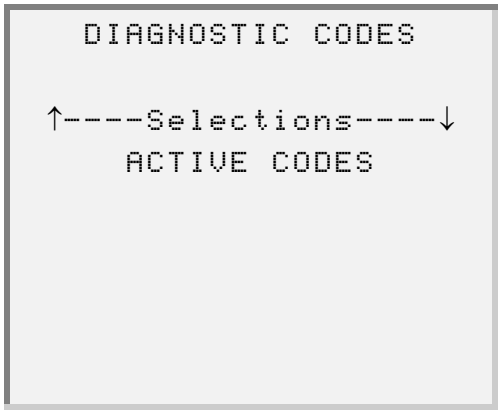


3 Press [ENTER] to select **ACTIVE CODES**. The screen displays the active codes.



4 Press the [▲] or [▼] keys to scroll through the data, as needed.

5 Press [FUNC] when finished viewing the data. The screen returns to the **DIAGNOSTIC CODES** menu.



View Codes Since Last Power Up

Use the **Codes Since Power Up** feature to view a list of codes that have become active or inactive during the current power-up cycle.

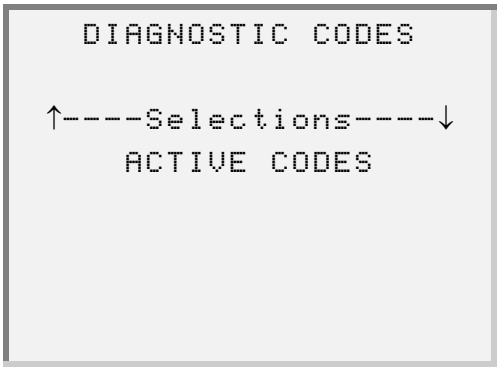
NOTE:

See “Defect Codes”, on page 213 for a complete list of all diagnostic codes and their possible values.

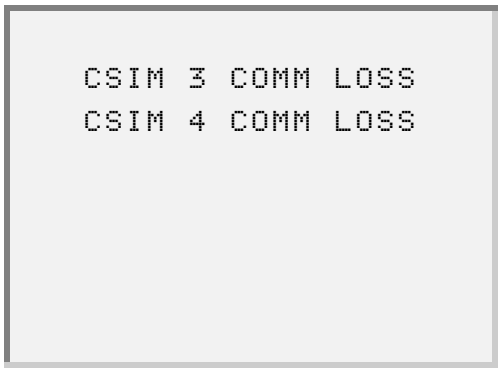
To view codes since last power up:

1 Be sure that the **Marine Controls Menu** is displaying.

2 Select **DIAGNOSTIC CODES.** The screen displays the **Diagnostic Codes** menu.

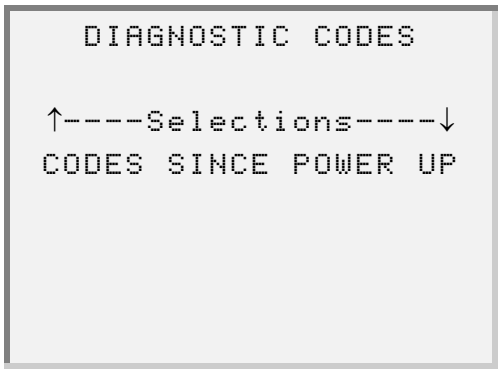


3 Select **CODES SINCE POWER UP**. The screen displays the codes. For example:



4 Press the [▲] or [▼] keys to scroll through the data, as needed.

5 Press [FUNC] when finished viewing the data. The screen returns to the **DIAGNOSTIC CODES** menu.



View Historic Codes

Use the **Historic Codes** feature to view all diagnostic codes that were logged during the life of the ERIM and are currently stored in memory.

NOTE:

This feature is not available for ERIM Software Level 3.0 or lower.

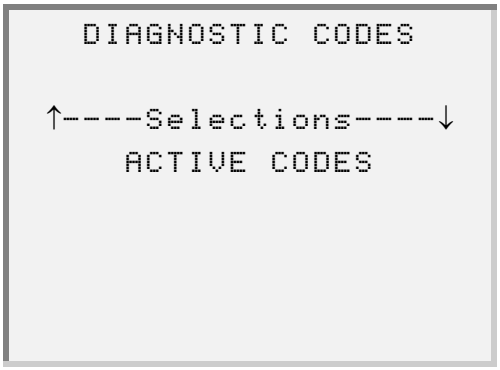
NOTE:

See “Marine Controls Historic Codes”, on page 202 for a complete list of all diagnostic codes and their possible values.

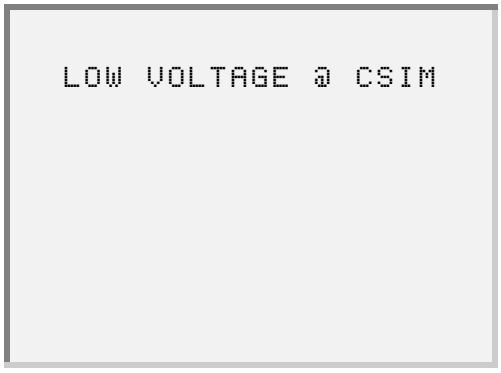
To view historic codes:

1 Be sure that the **Marine Controls Menu** is displaying, as follows.

2 Select **DIAGNOSTIC CODES**. The screen displays the **Diagnostic Codes** menu.

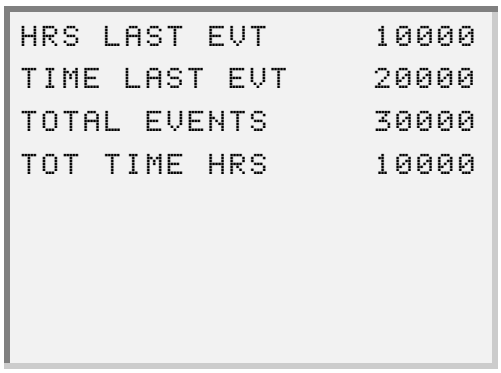


3 Select **HISTORIC CODES**. The screen displays the codes. For example:

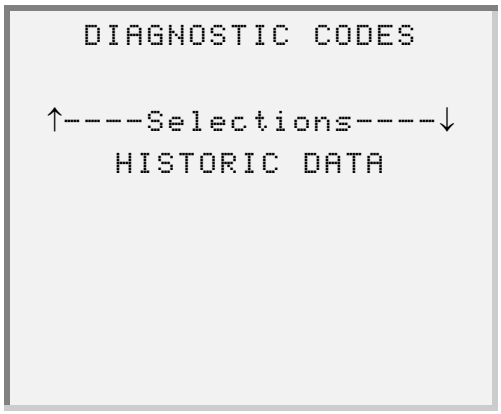


4 Press the [▲] or [▼] keys to scroll through the data, as needed.

—To view additional information for a code, press the [▲] or [▼] key to select the code then press [ENTER]. The screen displays details for the selected code. For example:



5 Press [FUNC] when finished viewing the data.



Viewing Calibrations

Use the **View Calibrations** feature to view the operating parameters that are stored in the memory of the ERIM.

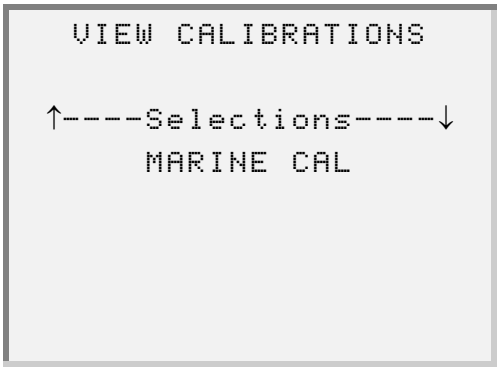
Within this feature are the following options:

- MARINE CAL (Marine Controls Calibration)—page 117
- ENGINE CAL (Engine Calibration)—page 118
- GEAR ACTUATOR CAL (Marine Gear Actuator Calibration)—page 119
- TROLL MODE CAL (Troll Calibration)—page 120

To access the View Calibrations menu:

1 Be sure that the **Marine Controls Menu** is displaying, as follows.

2 Select **VIEW CALIBRATIONS**. The screen displays the **View Calibrations** menu.

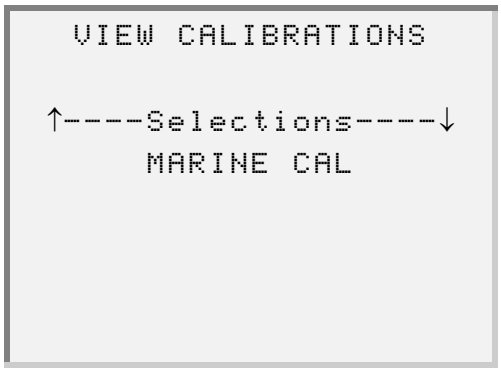


3 Press the [▲] or [▼] to scroll through the available options.

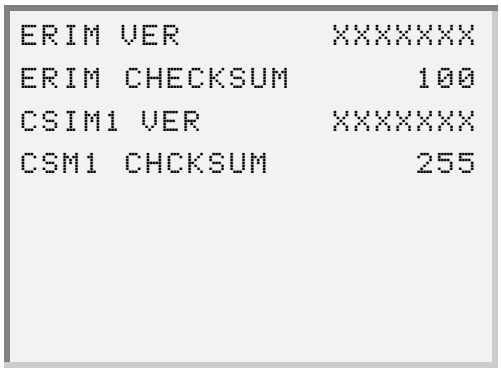
View Marine Controls Calibration

To view marine controls calibration:

1 Be sure that the **View Calibrations** menu is displaying.



2 Press [ENTER] to select **MARINE CAL**. The screen displays the calibration data. For example:



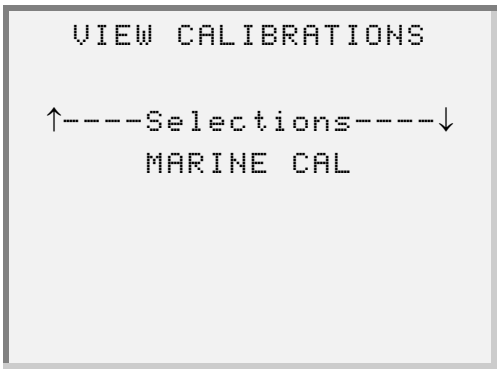
3 Press the [▲] or [▼] key to scroll through the data, as needed.

4 Press the [FUNC] key when finished viewing the data.

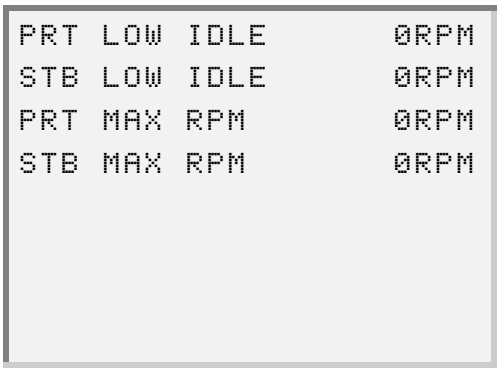
View Engine Calibration

To view engine calibration:

1 Be sure that the **View Calibrations** menu is displaying.



2 Select **ENGINE CAL**. The screen displays the calibration data. For example:



3 Press the ▲ or ▼ key to scroll through the data, as needed.

4 Press the FUNC key when finished viewing the data.

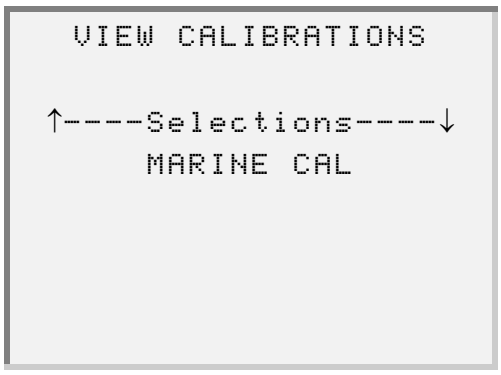
View Marine Gear Actuator Calibration

NOTE:

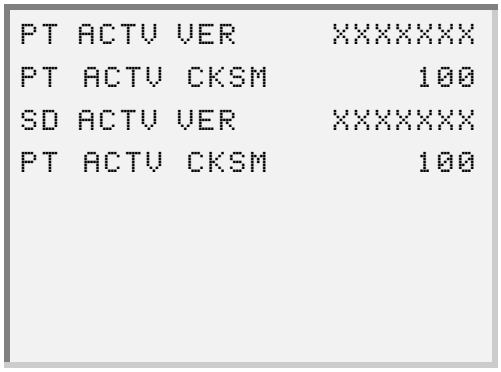
This option is not available for version 2.0 or 2.5 marine controls.

To view marine gear actuator calibration:

1 Be sure that the **View Calibrations** menu is displaying.



2 Select **GEAR ACTUATOR CAL**. The screen displays calibration data. For example:



3 Press the [▲] or [▼] key to scroll through the data, as needed.

4 Press the [FUNC] key when finished viewing the data.

View Troll Calibration

Use this option to view the Troll Mode Calibration parameters.

NOTE:

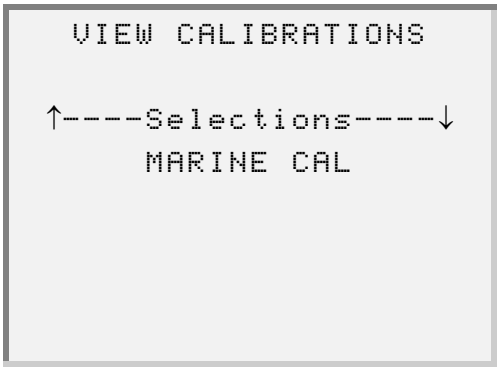
This option is not available for version 2.0 or 2.5 marine controls.

NOTE:

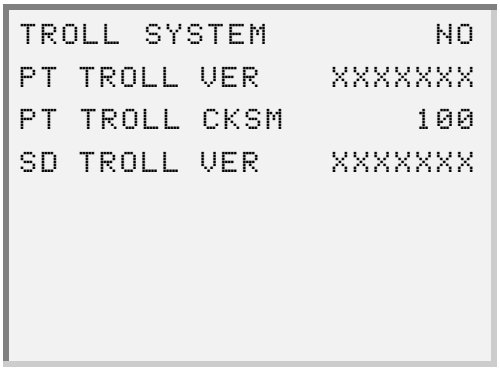
See “Troll Mode Calibration”, on page 208 for a complete list of all troll mode parameters and possible values.

To view troll mode calibration:

1 Be sure that the **View Calibrations** menu is displaying.



2 Select **TROLL MODE CAL**. The screen displays the calibration data. For example:



—If the software version is below 3.0, the screen displays the following message:

In this instance, press [ENTER]. The screen returns to the **VIEW CALIBRATIONS** menu.

3 Press the [▲] or [▼] key to scroll through the data, as needed.

4 Press the [FUNC] key when finished viewing the data.

Viewing Switch/Light Status

Use the **Switch/Light Stats** feature to view the status of the various switches and lights that are inputs or outputs to the ERIM.

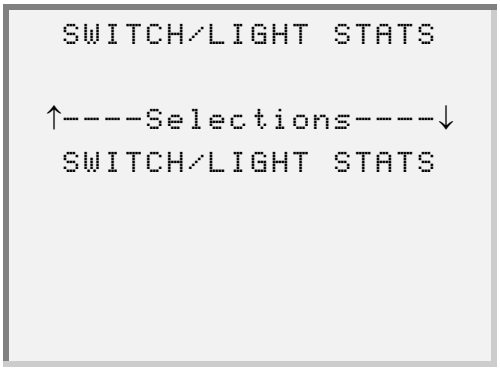
NOTE:

See “Switch and Light Status Parameters”, on page 208 for a list of all Switch/Light parameters.

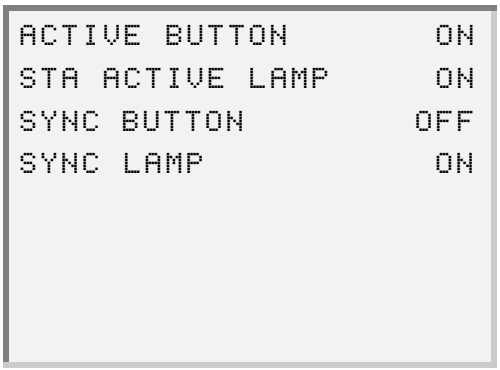
To view switch/light stats:

1 Be sure that the **Marine Controls Menu** is displaying, as follows:

2 Select the **SWITCH/LIGHT STATS** option. The screen displays the **Switch/Light Stats** menu.



3 Press [ENTER] to select **SWITCH/LIGHT STATS**. The screen displays the **Switch/Light Stats** data. For example:



4 Press the [▲] or [▼] key to scroll through the data, as needed.

5 Press the [FUNC] key when finished viewing the data.

Viewing MIDS Received

Messages are transmitted between various devices in the system using a pathway called the Serial Data Link. Because there are a great many devices in use in various applications, the Society of Automotive Engineers (SAE) and the American Trucking Association (ATA) have assigned a code number to help identify each device. These code numbers are called Message Identification numbers or MIDs. When a device is sending a message on the serial data link, part of that message is the devices MID. The Pro-Link® is able to identify these MIDs and display both the number and the name of the device, so you won't have to look them up in a chart.

Use the **MIDS Received** function to view the device that is sending out a MID.

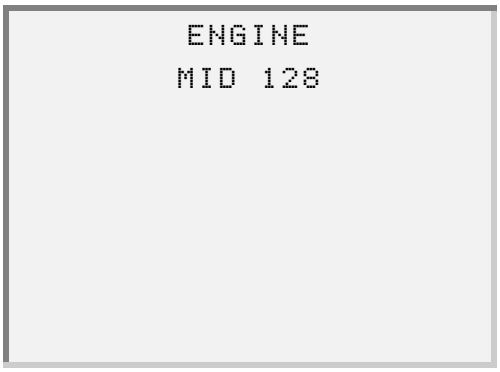
NOTE:

If more than one device is active, arrows display on the bottom line.

To view MIDS received:

1 Be sure that the **Marine Controls Menu** is displaying, as follows:

2 Select **MIDS RECEIVED**. The screen displays each device that is sending out a MID. For example:



3 Press the [▲] or [▼] key to scroll through the data, as needed.

4 Press [FUNC] to exit the screen.

Chapter 5

Using the Series 638 Application

This chapter provides instructions on accessing and using the features provided with the Detroit Diesel Series 638 Application.

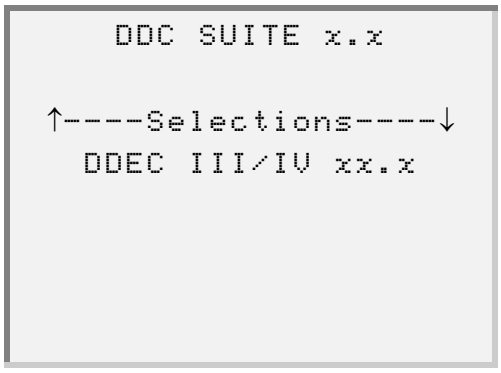
The Series 638 Application menu provides the following options:

- Data List (page 131)
- Defect Codes (page 133)
- I/O Status (page 137)

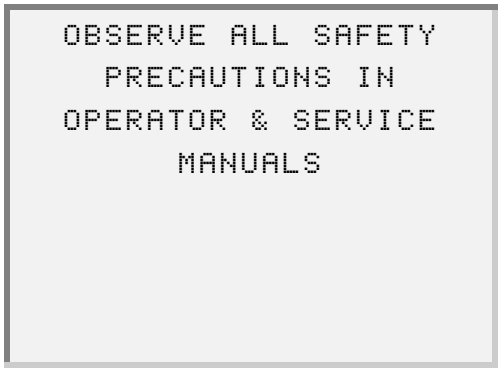
Accessing the Application

To access the Series 638 Application menu:

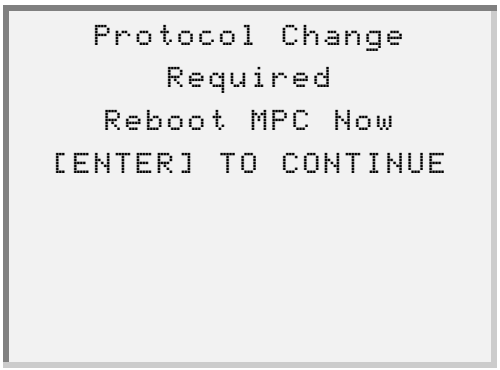
1 Be sure that the **DDC Suite x**.x menu is displaying.



2 Select **Series 638 X.X**. The screen displays the following messages:



—If you have loaded the DDEC III/IV application, the screen prompts you to re-boot the MPC.

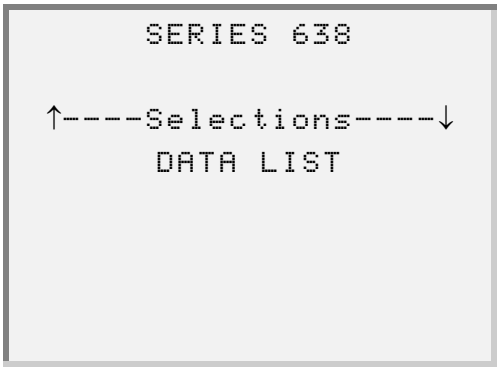


NOTE:

Refer to the *Pro-Link® User's Manual* for instructions.

Press [ENTER], then reboot the MPC.

3 Wait for communication to be established with the Series 638 system. The screen displays the Series 638 menu.



4 Press the [▲] or [▼] key to scroll through the menu options.

Viewing the Data List

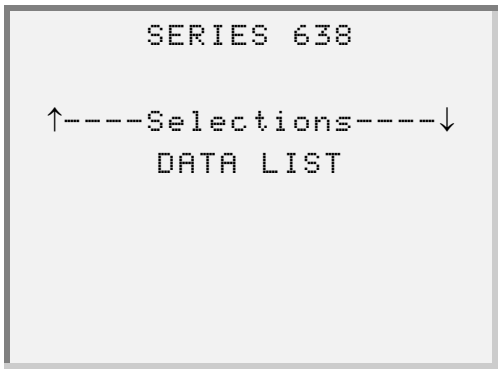
The **DATA LIST** feature provides a parameter selection list and allows you to select a specific parameter to be monitored. Once you select a parameter, the Series 638 application and Pro-Link® work together to monitor the parameter until you request to stop it (by pushing the FUNC button on the Pro-Link®).

NOTE:

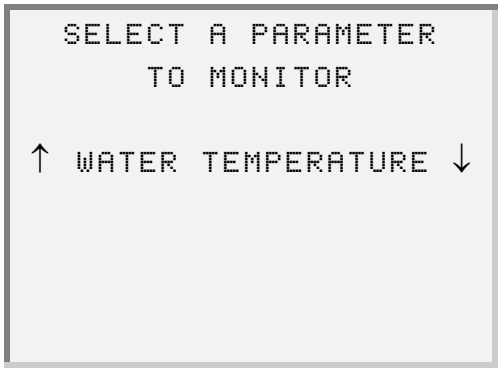
See “Data List”, on page 211 for a complete list of all data list parameters.

To monitor a data list parameter:

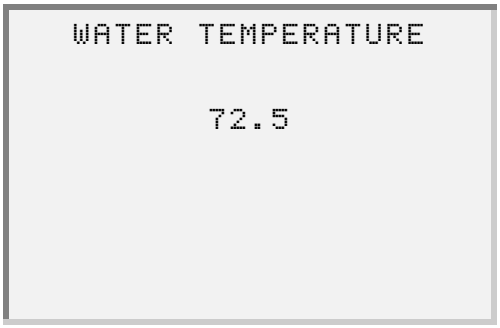
1 Be sure that the **Series 638 Application** menu is displaying.



2 Press ENTER to select **DATA LIST**. The screen prompts you to select a parameter to monitor.



3 Press the [▲] or [▼] key to scroll to and select the parameter that you want to monitor, then press [ENTER]. The screen displays the parameter information. For example:



4 Press [FUNC] when you want to stop monitoring the parameter.

Viewing/Clearing Defect Codes

Use the **DEFECT CODES** feature to view and clear defect codes detected on a failing component.

The **Defect Codes** menu provides the following options:

- View Codes (see pg. 133)
- Clear Codes (see pg. 134)

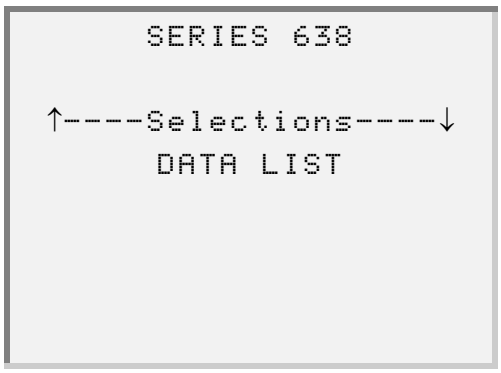
Viewing Defect Codes

NOTE:

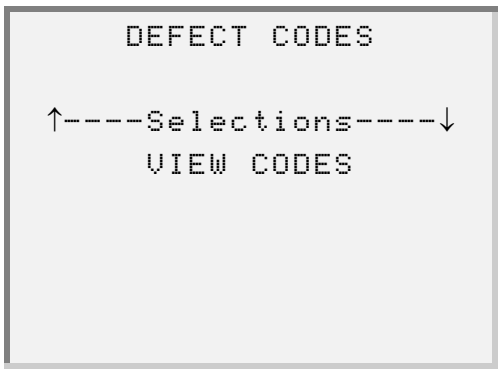
See “Defect Codes”, on page 213 for a complete listing of defect code parameters.

To view defect codes:

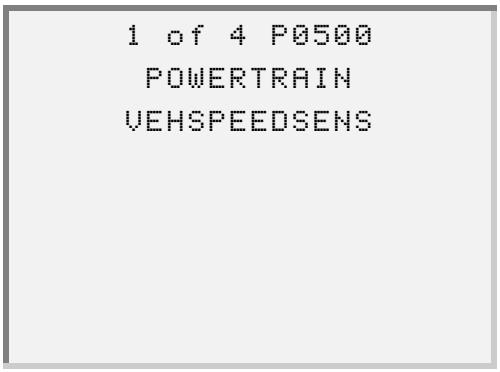
1 Be sure that the **Series 638** menu is displaying.



2 Select **DEFECT CODES**. The screen displays the **Defect Codes** menu.



3 Select **VIEW CODES**. The screen displays the defect codes information. For example:



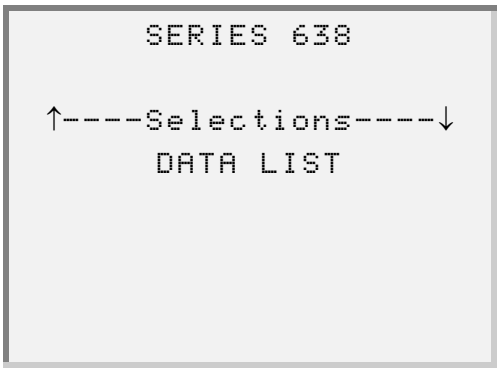
4 Press the [▲] or [▼] key to scroll through the data, as needed.

5 Press [FUNC] to exit the screen.

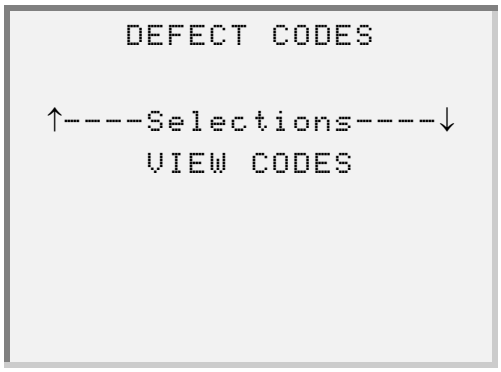
Clearing Defect Codes

To clear defect codes:

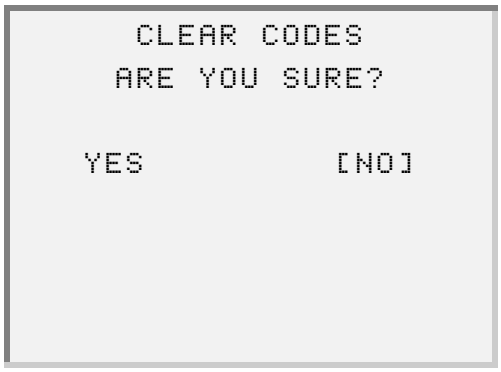
1 Be sure that the **Series 638** menu is displaying.



2 Press ENTER to select the **DEFECT CODES** option. The screen displays the **Defect Codes** menu.

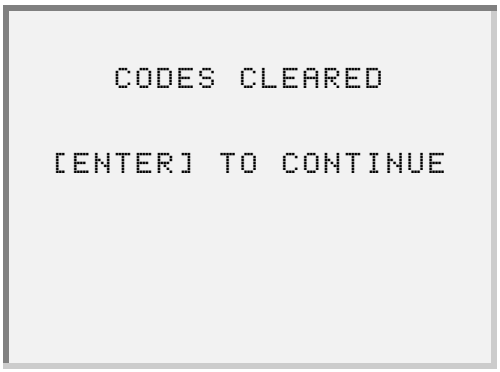


3 Select **CLEAR CODES**. The screen prompts you to confirm that you want to clear the codes.

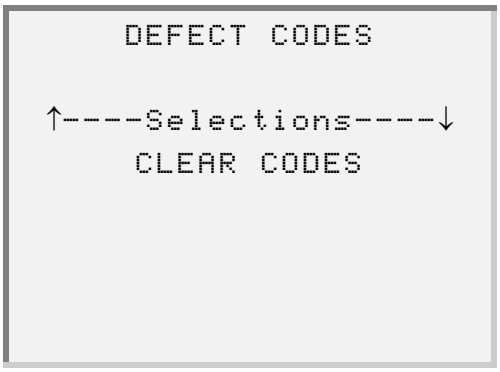


4 Select **YES**. The screen indicates that the codes are being cleared.

Once the defect codes are cleared, the screen displays the following message:



5 Press [ENTER]. The screen returns to the **Defect Codes** menu.



Viewing I/O Status

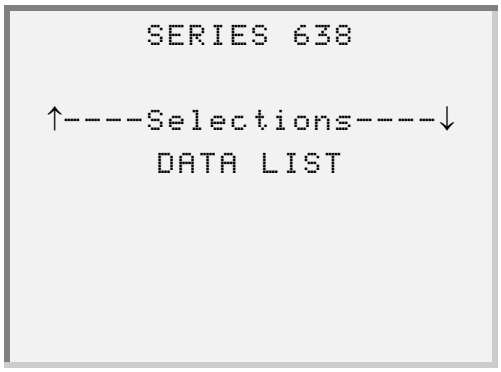
The **I/O STATUS** option lists all current Input/Output parameters and allows you to select a parameter to be monitored.

NOTE:

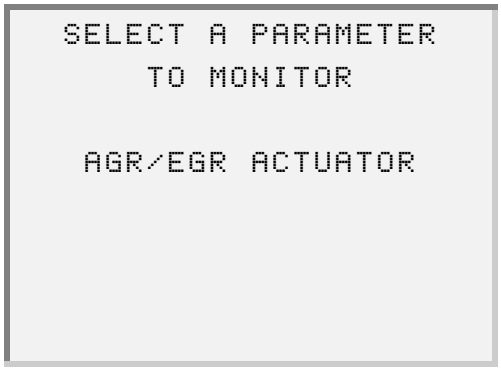
See “I/O Status List Parameters”, on page 215 for a list of all I/O Status data list parameters.

To use the I/O Status option:

1 Be sure that the **Series 638** menu is displaying.



2 Select **I/O STATUS**. The screen prompts you to select a parameter to monitor.



3 Press the [▲] or [▼] key to scroll to and select the parameter that you want to monitor, then press [ENTER]. The screen displays the parameter information. For example:

4 Press [FUNC] when you want to stop monitoring the parameter.

Appendix A

Parameter Listings

This appendix contains all parameter listings that exist for each of the vehicle system applications within the Detroit Diesel Application program.

DDEC Engine Parameters

This section provides listings of all parameters available for viewing and/or reprogramming within the DDEC Engine application.

Locating a DDEC III/IV Parameter List

The following table provides all parameter listings and corresponding page numbers:

Engine Data List

The following table lists all data list parameters and their current values for the Engine application.

Parameter	Description
ACTIVE CODES	Indicates (Yes or No) whether an active Fault Code is present.
AIR FILTR RS	Indicates the relative amount of restriction measured at the Air Inlet Filter, inches of H_2O or KPa.
AIR INLET TMP	Indicates the temperature of the air entering the engine air induction system in degrees Fahrenheit or Celsius.
AIR INLET PSI	Indicates the engine air inlet pressure in PSI or KPa.
AIR TMP TQ LIMIT	Indicates the active/inactive status of the Air Temperature Engine Torque Reduction Mode.
ALARM	Indicates the status of the optimized idle alarm mode.
ALERT MODE	Indicates the active/inactive status of the idle shutdown Driver Alert Mode.
ALT THROT CNTS (MARINE)	Throttle counts. “N/A” will be displayed if the A/D port mask for Throttle Position is disabled as indicated by DDEC Unique ID 223.
AMB AIR TMP	Indicates the temperature of the air surrounding the vehicle in degrees Fahrenheit or Celsius.
BARO PRS PSI	Indicates the atmospheric pressure in PSI or KPa.
BOI	Beginning of Injection - specifies the timing of the injection event as the number of degrees crankshaft rotation before piston TDC.
BOOST PSI OR KPA	Pressure of air measured downstream on the compressor discharge side of the turbo-charger. Indicated in PSI or KPa “FAIL” will display if a FMI 3 or FMI 4 is received.
BYP VALVE	Indicates the percent opening of the blower bypass valve.
COMP BLEED	Cylinder Boost Differential Pressure measures the difference between the Turbine Inlet Pressure and the Turbocharger Compressor Outlet Pressure.

Parameter	Description
COOL TMP	Indicates the temperature of the engine coolant in degrees Fahrenheit or Celsius.
COOLANT LEVEL	Indicates the engine coolant level, determined by the Coolant Level Sensor. Will display FULL, ADD or LOW. Some engines may be equipped with an optional Second Coolant Level Sensor.
COOLANT PSI OR KPA	Indicates the engine coolant system pressure in PSI or KPa.
CRNKCSE H20 OR KPA	Indicates the air pressure inside the engine crank-case in inches of water or KPa.
CRUISE SET MPH OR KPH	Indicates the cruise control set speed.
ECM VOLTS	Indicates the battery voltage available to the ECM.
ECON MPG	Indicates the current fuel economy at the current vehicle velocity.
EGR DPS A*	Differential pressure across the EGR flow measure-ment device.
EGR DPS B*	Differential pressure across the EGR flow measure-ment device.
*EGR Parameters with “A” suffix pertain to ECM software versions below R33.0. EGR parameters with “B” suffix pertain to ECM software versions at or above R33.0. See parameter “SOFTWARE LVL” in the “Engine and Vehicle Configuration”, on page 150	
EGR DPS CNTS	Indicates the raw analog counts of the EGR orifice pressure drop.
EGR TMP A*	Temperature of the re-circulated exhaust gas after the EGR cooler.
EGR TMP B*	Temperature of the re-circulated exhaust gas after the EGR cooler.
*EGR Parameters with “A” suffix pertain to ECM software versions below R33.0. EGR parameters with “B” suffix pertain to ECM software versions at or above R33.0. See parameter “SOFTWARE LVL” in the “Engine and Vehicle Configuration”, on page 150	
ENG BRAKE	Indicates the active/inactive status of the engine brake.
ENG BRAKE PCT	Indicates the ratio of engine brake force to maximum brake force available.

Parameter	Description
ENG GOVR	Indicates which DDEC governor is currently active.
ENG GOVR GAIN	Overall governor gain.
ENG LOAD PCT	Indicates the percent engine load calculated from engine speed and torque.
ENGINE RPM	Indicates engine RPM as determined by the timing reference sensor.
EXST BKPRS	Indicates exhaust back pressure in Hg or KPa. “FAIL” will display if FMI 3 or FMI 4 is received.
EXST BP FAULT TIMES	Exhaust back pressure fault times.
• SCLD HI	• Exhaust back pressure time while scaled high fault active, indicated in hours/minutes.
• RAMP DN	• Exhaust back pressure time while ramp down fault active, indicated in hours/minutes.
EXHST GAS AFR	Indicates the engine exhaust gas air fuel ratio.
EXST TMP A	Indicates the temperature of the engine exhaust gas in degrees Fahrenheit or Celsius. For marine engines, indicates exhaust bank A temperature. “FAIL” will be displayed if a FMI 3 or FMI 4 is received.
EXST TMP B	Indicates the temperature of the Receiver ECM #2 (MID 175) engine exhaust gas in degrees Fahrenheit or Celsius. For marine engines, indicates exhaust bank B temperature. “FAIL” will be displayed if a FMI 3 or FMI 4 is received.
EXT PUMP PSI	Indicates water pressure of an external water pump drive in PSI or KPa.
FUEL IN RES	Indicates the restriction measured at the Fuel Pump Inlet, inches of Hg or KPa.
FUEL PRS PSI	Indicates the engine fuel pressure in PSI or KPa.
FUEL TMP	Indicates the temperature of the engine fuel in degrees Fahrenheit or Celsius.
FUEL RATE GPH OR LPH	Indicates the amount of fuel consumed by the engine per unit time.

Parameter	Description
GAS VALVE	Indicates the percent opening of the natural gas metering valve.
HALF ENGINE	Indicates the active/inactive status of the Half Engine Mode.
INACTIVE CODES	Indicates (Yes or No) if an inactive Fault Code has been present.
IDLE SPD RPM	Indicates the current engine idle speed in RPM.
INJECT PRS PSI	Indicates the injection fuel rail pressure in PSI or KPa.
INJ PUMP USAGE	Indicates the injection fuel rail pump utilization.
ISD OPTION	Indicates the state of the idle shutdown feature.
INTKE AIR TMP	Indicates the temperature of the engine intake air degrees Fahrenheit or Celsius.
INTRCOOL TMP	Indicates the temperature of the engine intercooler degrees Fahrenheit or Celsius.
KNOCK CONTROL	Indicates the active/inactive status of the Knock Control Mode.
KNOCK LEVEL	A description of the relative knock intensity. The higher the numbers the higher the knock.
KNOCK VOLTS	Indicates the knock sensor voltage available to the ECM.
LOOP STATUS	Indicates the open/closed loop status of the fuel system based on the signal from an exhaust oxygen sensor.
OIL FILTR RS	Indicates the relative amount of restriction measured at the Oil Filter, in PSI or KPa.
OIL LEVEL	Indicates the engine oil level. Will display OK or ADD. While the engine is running, and for a while after shutting off the engine, OIL LEVEL will display UNKNOWN.
OIL PRS PSI	Indicates the engine oil pressure in PSI or KPa.
OIL TMP	Indicates the temperature of the engine oil in degrees Fahrenheit or Celsius.

Parameter	Description
OPTIMIZED IDLE	Indicates the enabled/disabled status of the optimized idle feature that is programmed in the DDEC calibration.
OVERRIDE	Indicates the active/inactive status of the idle shutdown override feature.
PULSEWIDTH	Number of degrees crankshaft rotation that the EUI's control valve is closed and fuel is entering the cylinder.
PWM DRIVE 1	Indicates the duty cycle of the Pulse Width Modulated (PWM) port #1.
PWM DRIVE 2	Indicates the duty cycle of the Pulse Width Modulated (PWM) port #2.
PWM DRIVE 3	Indicates the duty cycle of the Pulse Width Modulated (PWM) port #3.
PWM DRIVE 4	Indicates the duty cycle of the Pulse Width Modulated (PWM) port #6.
R1 INLET TMP	Indicates the receiver ECM #1 (MID 175) temperature of the air entering the engine air induction system in degrees Fahrenheit or Celsius.
R1 BOOST	Receiver ECM #1 (MID 175) Boost Pressure - Pressure of air measured downstream on the compressor discharge side of the turbocharger.
R1 SRS RECEIVED	Indicates that the receiver ECM #1 (MID 175) has received a signal from the Synchronous Reference Sensor (SRS) during this ignition cycle.
R1 ECM VOLTS	Indicates the receiver ECM #1 (MID 175) battery voltage available to the ECM.
R1 PULSEWIDTH	Receiver ECM #1 (MID 175) Fuel Pulse Width.
• R1 TPS CNTS (STANDARD) • R1 ALT THROT CNTS (MARINE)	Indicates the receiver ECM #1 (MID 175) Throttle Position Sensor (TPS) Counts (CTS) - A/D Counts. For marine engines, indicates the alternate throttle counts. "N/A" will be displayed if the A/D port mask for Throttle Position is disabled as indicated by DDEC Unique ID 223.

Parameter	Description
• R1 VSG CNTS (STANDARD) • R1 THROT CNTS (MARINE)	Indicates the receiver ECM #1 (MID 175) Variable Speed Governor (VSG) - A/D counts. For marine engines indicates the main throttle counts. “N/A” will be displayed if the A/D port mask for PTO position is disabled as indicated by DDEC Unique ID 223.
R1 OIL PRS	Indicates the receiver ECM#1 (MID 175) engine oil pressure in PSI or KPa.
R2 OIL PRS	Indicates the receiver ECM#2 (MID 183) engine oil pressure in PSI or KPa.
R1 INLET PSI	Receiver ECM #1 (MID 175) indicates the engine air inlet pressure in PSI or KPa.
R1 BARO PSI	Receiver ECM #1 (MID 175) Barometric Pressure - indicates the atmospheric pressure in PSI or KPa.
R1 COOL PSI	Indicates the receiver ECM #1 (MID 175) engine coolant system pressure in PSI or KPa.
R1 TURBO SPEED	Indicates the receiver ECM #1 (MID 175) Turbo blade speed RPM.
R2 COOL PRS	Indicates the receiver ECM#2 (MID 183) engine coolant system pressure in PSI or KPa.
R2 ECM VOLTS	Indicates the receiver ECM #2 (MID 183) battery voltage available to the ECM.
R2 PULSEWIDTH	Receiver ECM #2 (MID 183) Fuel Pulse Width.
R2 SRS RECEIVED	Indicates that the receiver ECM #2 (MID 183) has received a signal from the Synchronous Reference Sensor (SRS) during this ignition cycle.
• R2 TPS CNTS (STANDARD) • R2 ALT THROT CNTS (MARINE)	Indicates the receiver ECM #2 (MID 183) Throttle Position Sensor (TPS) Counts (CTS) - A/D Counts. For marine engines, indicates the alternate throttle counts. “N/A” will be displayed if the A/D port mask for Throttle Position is disabled as indicated by DDEC Unique ID 223.
R2 TURBO SPEED	Indicates the receiver ECM #2 (MID 183) Turbo blade speed RPM.

Parameter	Description
• R2 VSG CNTS (STANDARD) • R2 THROT CNTS (MARINE)	Indicates the receiver ECM #2 (MID 183) Variable Speed Governor (VSG) - A/D counts. For marine engines, indicates the main throttle counts. “N/A” will be displayed if the A/D port mask for PTO position is disabled as indicated by DDEC Unique ID 223.
REL HUMID	Indicates relative humidity. “FAIL” will display if FMI 3 or FMI 4 is received.
SEQ TURBO	Indicates the status of the Sequential Turbo Mode.
SPD ADJUST MPH	Indicates the adjusted vehicle road speed in MPH or KPH.
SRS RECEIVED	Indicates that the ECM has received a signal from the Synchronous Reference Sensor (SRS) during the ignition cycle.
SHUTDOWN	Indicates whether the engine has been shutdown by the idle shutdown feature.
START RLY	Indicates the status of the optimized idle starter relay.
SYS ACTIVE	Indicates the active status of the optimized idle system.
THROTTLE PLATE	Indicates the percent opening of the natural gas throttle plate.
TIMER	Indicates the active/inactive status of the idle shutdown timer.
TORQ LB-FT	Indicates the amount of torque available at the engine flywheel. Negative torque values will display with a minus sign (-) in front of the value.
TPS CNTS (STANDARD)	Indicates the Throttle Position Sensor (TPS) Counts (CTS) - A/D Counts. For marine engines indicates the alternate.
• TPS PCT (STANDARD) • ALT THROT PCT (MARINE)	Indicates the percent opening of the throttle position sensor (TPS). For marine engines indicates the percent opening of the alternate throttle. “FAIL” will be displayed if a FMI 3 or FMI 4 is received. “N/A” will be displayed if the A/D port mask for Throttle Position is disabled as indicated by DDEC Unique ID 223.
TRB CMP OUT	Indicates turbocharger compressor outlet temperature in degrees Fahrenheit or Celsius. “FAIL” will display if FMI 3 or FMI 4 is received.

Parameter	Description
TRB CMP IN	Indicates turbocharger compressor inlet temperature in degrees Fahrenheit or Celsius. “FAIL” will display if FMI 3 or FMI 4 is received.
TRB BYP VLV	Turbocharger Compressor Bleed Valve, ON or OFF. FAULT is displayed when the output is switched OFF if the TRB BYP DP is too high, which will prevent unwanted exhaust gas recirculation. Displays “N/A” if not configured.
T-STAT	Indicates the status of the optimized idle thermostat control mode.
%TQ LIMIT	Torque Reduction Factor - indicates the ratio of current output torque allowed (due to adverse operating conditions) to maximum torque available at current engine speed (under normal operation conditions).
TURBO SPEED	Indicates the Turbo blade speed in RPM.
VEHICLE SPD MPH	Indicates the vehicle road speed in MPH or KPH.
• VSG CNTS (STANDARD) • THROT CNTS (MARINE)	Indicates the Variable Speed Governor (VSG) - A/D counts. For marine engines, indicates the main throttle counts. “N/A” will be displayed if the A/D port mask for PTO position is disabled as indicated by DDEC Unique ID 223.
• VSG SET RPM (STANDARD) • THROT SET RPM (MARINE)	Indicates the engine set speed for the Variable Speed Governor. For marine engines indicates the throttle set speed.

Engine and Vehicle Configuration

The following table lists the engine and vehicle configuration parameters that you can view by using the **View Calibrations** feature. See “Viewing Calibrations”, on page 23 for instructions.

Parameter	Description
ECM DATE	Indicates the current date stored in the DDEC engine controller.
ECM TIME	Indicates the current time stored in the DDEC engine controller[1].
ENG MODEL #	Indicates the Detroit Diesel Corporation engine model number that is programmed in the DDEC calibration.
6N4M #	Indicates the engine rating group designation.
R1 6N4M #	Indicates the engine rating group designation for Receiver #1 ECM[2].
R2 6N4M #	Indicates the engine rating group designation for Receiver #2 ECM[3].
6N4D #	Indicates the engine rating family designation.
R1 6N4D #	Indicates the engine rating family designation for Receiver #1 ECM[5].
R2 6N4D #	Indicates the engine rating family designation for Receiver #2 ECM[3].
6N4C #	Indicates the engine application group designation.
R1 6N4C #	Indicates the engine application group designation for Receiver #1 ECM[5].
R2 6N4C #	Indicates the engine application group designation for Receiver #2 ECM[3].
UNIT#	Indicates the vehicle unit number that is programmed by the customer to identify the vehicle within their fleet electronically[4].
V	Indicates the vehicle identification number that is programmed in the DDEC calibration.
ENG S/N	Indicates the engine serial number that is programmed in the DDEC calibration.

Parameter	Description
ECM S/N	Indicates the ECM serial number that is programmed in the DDEC calibration.
R1 ECM SN	Indicates the engine serial number for Receiver #1 ECM[3].
R2 ECM SN	Indicates the engine serial number for Receiver #2 ECM[4].
SOFTWARE LVL	Indicates the DDEC ECM software version. The software level is incremented after every revision.
R1 SOFTWARE	Indicates the engine software version for Receiver #1 ECM[3].
R2 SOFTWARE	Indicates the engine software version for Receiver #2 ECM[4].
EPA CERT #	Indicates the EPA engine certification number.
R1 EPA CERT #	Indicates the engine certification number for Receiver #1 ECM[3].
R2 EPA CERT #	Indicates the engine certification number for Receiver #2 ECM[4].
ENG SERIES	Indicates the DDEC engine type.
SHARED VERS	Indicates the version number of the shared parameters.
R1 SHARED VERS	Indicates the receiver ECM #1 (MID 175) version number of the shared parameters.
R2 SHARED VERS	Indicates the receiver ECM #2 (MID 183) version number of the shared parameters.
RATING VERS	Indicates the version number of the rating parameters. For a standard rating, it is displayed XXX. For a cruise rating, it is displayed XXX/XXX.
R1 RATING VERS	Indicates the ECM #1 (MID 175) version number of the rating parameters. For a standard rating, it is displayed XXX. For a cruise rating, it is displayed XXX/XXX.
R2 RATING VERS	Indicates the ECM #2 (MID 183) version number of the rating parameters. For a standard rating, it is displayed XXX. For a cruise rating, it is displayed XXX/XXX.

Parameter	Description
ENG PWR	Indicates the rated brake horsepower of the currently active rating.
ENG RATED RPM	Indicates the rated speed of the currently active rating.
LSG DROOP RPM	Indicates the rated speed governor droop that is programmed in the DDEC calibration.
PEAK TRQ	Indicates the peak operating torque of the currently active rating.
PEAK TRQ RPM	Indicates the RPM at peak torque of the currently active rating.
IDLE SPEED	Indicates the warm engine idle speed that is programmed in the DDEC calibration.
IDLE ADJUST	Indicates the idle RPM adjustment.
TRANS	Indicates the vehicle transmission type.
DYNAMIC BRAKING	Indicates the enabled/disabled status of the engine fan dynamic braking feature.[5]
ENG BRK/SER BRK	Indicates the enabled/disabled status of the engine brake engaged by the vehicle service brake feature.
ENG BRAKE MIN MPH	Indicates the minimum vehicle speed in which the engine brake engaged by the vehicle brake in activated.
HALF ENGINE	Indicates how half engine mode will depend on temperature.
DATA PAGES	Indicates the enabled/disabled status of the data pages feature.
J1922 ABS ENABLE	Indicates the enabled/disabled status of the SAE J1922 ABS communications feature.
J1922 TRN ENABLE	Indicates the enabled/disabled status of the SAE J1922 transmission communications feature.
J1939 ENABLED	Indicates the enabled/disabled status of the SAE J1939 communications feature.
H20 GOV ENABLED	Indicates the enabled/disabled status of the fire truck water pressure governor feature.

Parameter	Description
AIR GOV ENABLED	Indicates the enabled/disabled status of the air compressor pressure governor feature.
A/C FAN TIMER	Indicates the A/C FAN on time in seconds. This value can range from 0 to 255 seconds.
FUEL ECON INCENTIVE	This feature will add a MPH delta to the cruise and road speed maximums based on average fuel economy. The feature is to operate the vehicle in such a way as to maximize MPG.
MINIMUM MPG	Indicates the minimum MPG (or Maximum L/100 K) threshold to enable the cruise and road speed adjustment feature that is programmed in the DDEC calibration.
MAX SPEED	Indicates the maximum adjustment value for cruise and road speed adjustment that is programmed in the DDEC calibration.
ECON	Fuel economy for maximum speed delta adjustment. Indicates the calculated MPG (or L/100km) for the maximum speed adjustment value. This parameter is calculated using the programmable parameters “MINIMUM MPG”, “MAX SPEED”, and the current value given by the engine controller for conversion factor (formerly the MPC displayed parameter “SCALER”). The calculation is: ECON = (MAX SPEED / conversion factor) + MINIMUM MPG
CALC TYPE	Indicates the speed adjustment calculation type that is programmed in the DDEC calibration. The speed adjustment can be calculated from short-term MPG or long-term MPG.
Low Gear TRQ Limit	
TRQ LMT FT-LB	Indicates the low gear torque limit.

Parameter	Description
THRESHOLD	Indicates the low gear torque limiting threshold.
SET SPEED	Indicates the low gear torque limiting set speed in MPH (or KPL).
IDLE METHOD	Indicates which method will be used to determine if the engine is on idle for the purposes of idle data accumulation. If VSS ENABLED = YES, VSS will be displayed.
LOAD LIMIT	If IDLE METHOD is RPM/LOAD, displays the load limit under which idle data will be accumulated. Display N/A if VSS ENABLED = YES or if IDLE METHOD = IDLEGOV.
RPM LIMIT	If IDLE METHOD is RPM/LOD, displays the wpm limit under which idle data will be accumulated. Display N/A if VSS ENABLED = YES or if IDLE METHOD = IDLEGOV.

1 If the DDEC ECM software version is 20.0 or higher, the time will be indicated in GMT (Greenwich Mean Time). *See next page for footnotes 2 - 5*.

2 These features are only available on Multi-ECM Engines, with a Receiver #1 ECM, MID 175.

3 These features are only available on Multi-ECM Engines, Receiver #2, MID 183.

4 10-digit alpha/numeric entry.

5 These features are only available on ECM with Software Level 2.0 or higher.

Idle Shutdown Configuration

The following table lists the Idle Shutdown Configuration parameters. See page 25 for instructions on using the Pro-Link® to view these parameters.

NOTE:

These features are only available on ECM with Software Level 2.0 or higher.

Parameter	Description
ENABLED	Indicates the enabled/disabled status of the engine idle shutdown feature that is programmed in the DDEC calibration. “N/A” will be displayed if function #5 (PARK BRAKE/ISD) is not configured as a vehicle input switch.
TIME (MIN)	Indicates the engine idle time in minutes that is allowable before the idle shutdown feature stops fueling the engine. “N/A” will be displayed if idle shutdown “ENABLED” = NO or N/A.
OVERRIDE	Indicates the enabled/disabled status of the engine idle shutdown override feature that is programmed in the DDEC calibration. “N/A” will be displayed if idle shutdown “ENABLED” = NO or N/A.
AUTO OVERRIDE	Indicates the enabled/disabled status of the engine idle shutdown automatic override feature that is programmed into the DDEC calibration. “N/A” will be displayed if idle shutdown “ENABLED” = NO or N/A.
ENABLED ON VSG	Indicates the enabled/disabled status of the engine idle shutdown on VSG feature that is programmed in the DDEC calibration. “N/A” will be displayed if idle shutdown “ENABLED = NO or N/A.
Override Temp Disable	
LOWER LIMIT	Indicates the lower limit of the ambient temperature range that will disable the idle shutdown override feature.[1]
UPPER LIMIT	Indicates the upper limit of the ambient temperature range that will disable the idle shutdown override feature[5].

1 These features are only available on ECM with Software Level 2.0 or higher.

VSG (Marine Throttle) Calibration

The following table lists the parameters that allow the reprogramming of the DDEC III/IV engine variable speed governor options.

Parameter	Description
• VSG DROOP RPM (STANDARD) • THROT DRP RPM (MARINE)	Indicates the variable speed governor droop in RPM that is programmed in the DDEC calibration. For marine engines, this is the amount of Throttle Droop.
• VSG MIN RPM (STANDARD) • LOW IDLE RPM (MARINE)	Indicates the minimum variable speed governor RPM that is programmed in the DDEC calibration. For marine engines, this is the low idle set point RPM.
• VSG MAX RPM (STANDARD) • THRT MAX RPM (MARINE)	Indicates the maximum variable speed governor RPM that is programmed in the DDEC calibration. For marine engines, this is the maximum Throttle RPM.
• ALT VSG MIN RPM (STANDARD) • USER IDLE RPM (MARINE)	Indicates the alternate variable speed governor minimum RPM that is programmed in the DDEC calibration. For marine engines, this is the normal user idle set point. “N/A” will be displayed if (Function #16 - ALT VSG MIN) is not configured as a vehicle input switch.

Engine Protection Configuration

The following table lists all Engine Protection configuration parameters.

NOTE:

"R1" parameters pertain only to multi-ECM engines, Receiver #1, MID 175.

Parameter	Description
OIL TMP	Indication of the type of engine protection
R1 OIL TMP	Indicates the Receiver ECM #1 (MID 175) type of engine protection based on high engine oil temperature "N/A" will be displayed if the sensor input is not configured.
COOLANT TMP	Indication of the type of engine protection based on high engine coolant temperature.
INTRCOOL TMP	Indication of the type of engine protection based on the engine intercooler coolant temperature.
OIL PRS	Indication of the type of engine protection based on low engine oil pressure.
CRNKCSE PRS	Indication of the type of engine protection based on engine crankcase pressure.
COOLANT PRS	Indication of the type of engine protection based on engine coolant pressure.
R1 COOLANT PRS	Indicates the Receiver ECM #1 (MID 175) type of engine protection based on engine Coolant Pressure. "N/A" will be displayed if the sensor input is not configured.
COOLANT LVL	Indication of the type of engine protection based on low coolant level.
OIL LEVEL	Indication of the type of engine protection based on low engine oil level.
AUX SHTDWN #1	Indication of the type of engine protection based on auxiliary engine shutdown #1.
AUX SHTDWN #2	Indication of the type of engine protection based on auxiliary engine shutdown #2.

Cruise Control Configuration

The following table lists all **Cruise Control Configuration** parameters.

Parameter	Description
VSS ENABLED	Indicates the enabled/disabled status of the vehicle speed sensor input that is programmed in the DDEC calibration.
VSS TYPE	Indicates the type of vehicle speed sensor input that is programmed in the DDEC calibration. “N/A” will be displayed if “VSS ENABLED” = NO.
VSS TEETH	Indicates the number of teeth on the vehicle speed sensor input that is programmed in the DDEC calibration. “N/A” will be displayed if “VSS ENABLED” = NO.
VSS SIGNAL (STANDARD) THRT SIGNAL (MARINE)	Indicates the type of VSS signal that the ECM is configured for. For marine engines indicates the type of throttle signal. “N/A” will be displayed if VSS ENABLED = NO.
TIRE REVS/MI	Indicates the vehicle tire size in REVS per mile that is programmed in the DDEC calibration. “N/A” will be displayed if “VSS ENABLED” = NO.
AXLE RATIO	Indicates the vehicle rear axle ratio that is programmed in the DDEC calibration. “N/A” will be displayed if “VSS ENABLED” = NO.
TOP GEAR	Indicates the vehicle final drive ratio that is programmed in the DDEC calibration. “N/A” will be displayed if “VSS ENABLED” = NO.
PULSES/MI	Indicates the pulses per mile ratio that is programmed in the DDEC Calibration. “N/A” will be displayed if “VSS ENABLED” = NO.
VEHICLE SPD LMT	Indicates the enabled/disabled status of the vehicle speed limiting feature that is programmed in the DDEC calibration. “N/A” will be displayed if “VSS ENABLED” = NO.
VEHICLE SPD	Indicates the maximum vehicle speed in MPH that is programmed in the DDEC calibration. “N/A” will be displayed if “VEHICLE SPD LMT” = NO or N/A.

Parameter	Description
VSS ANTI-TAMPER	Indicates the enabled/disabled status of the “N/A” will be displayed if “VEHICLE SPD LMT”= NO or N/A.
CRUISE CONTROL	Indicates the enabled/disabled status of the cruise control feature that is programmed in the DDEC calibration. “N/A” will be displayed if function #20 (set/coast on) has not been configured for a vehicle switch input.
MIN CRUZ	Indicates the minimum cruise control speed that is programmed in the DDEC calibration. “N/A” will be displayed if cruise control “ENABLED” = NO or N/A or “VSS ENABLED” = NO.
MAX CRUZ	Indicates the maximum cruise control speed that is programmed in the DDEC calibration.
AUTO RESUME	Indicates the enabled/disabled status of the feature that allows automatic cruise control set speed resume.
CRUZ SW VSG	Indicates the enabled/disabled status of the cruise switched VSG feature that is programmed in the DDEC calibration. “N/A” will be displayed if “VSS ENABLED” = NO and/or cruise control “ENABLED” = NO or N/A.
INIT RPM	Indicates the cruise switched VSG initial set speed that is programmed in the DDEC calibration. “N/A” will be displayed if “CRUZ SW VSG” = NO or N/A.
RPM INCR	Indicates the cruise switched VSG RPM increment that is programmed in the DDEC calibration. “N/A” will be displayed if “CRUZ SW VSG” = NO or N/A.
CRUZ/ENG BRK	Indicates the enabled/disabled status of the feature that allows the engine brake to be used while on cruise control if the vehicle exceeds the cruise set speed.
CRUZ/ENG BRK	Indicates the programmed vehicle speed above the current cruise set speed that must be reached before the engine brake will activate the medium and/or high level of retardation.

Parameter	Description
ENG BRK INC	Indicates the additional incremental speed which must be reached before the engine brake will activate the medium and/or high level of retardation.
MAX OVRSPD LMT	Indicates the vehicle speed above which a diagnostic code will be logged if the driver fuels the engine and exceeds this speed limit. A ‘0’ indicates this feature is disabled.
MAX SPD NO FUEL	Indicates the vehicle speed above which a diagnostic code will be logged if the vehicle reaches this speed without fueling the engine. A ‘0’ indicates this feature is disabled.
PASS DUR[1]	The duration of time per interval that is permitted at the higher speed. A value of zero will disable the feature.
PASS RST[1]	The period of time when the ECM resets to begin a new period.
PASS SPD[1]	The additional vehicle speed permitted above the programmed vehicle speed limit. A value of zero will disable the feature.

1 If the passing speed function is disabled in the ECU, this value cannot be changed.

Progressive Shift Configuration

The following table lists all Progressive Shift configuration parameters.

Parameter	Description
ENABLED	Indicates the enabled/disabled status of the progressive shift feature.
LG #1 OFF SPD	Indicates the lower gear #1 turn off speed.
LG #1 RPM LIMIT	Indicates the lower gear #1 RPM limit.

Parameter	Description
LG #1 MAX LIMIT	Indicates the low gear #1 maximum RPM limit.
LG #2 OFF SPD	Indicates the lower gear #2 turn off speed.
LG #2 MAX LIMIT	Indicates the low gear #2 maximum RPM limit.
HG ON SPD	Indicates the high gear turn on speed.
HG RPM LIMIT	Indicates the high gear RPM limit.

ECM Input/Output Configuration

The following table lists the ECM input and output configuration parameters.

ECM Input Switches	Description
J1_____	Indicates the functional configuration of the switch input at cavity J1.
F1_____	Indicates the functional configuration of the switch input at cavity F1.
G3_____	Indicates the functional configuration of the switch input at cavity G3.
F2_____	Indicates the functional configuration of the switch input at cavity F2.
J2_____	Indicates the functional configuration of the switch input at cavity J2.
G2_____	Indicates the functional configuration of the switch input at cavity G2.
G1_____	Indicates the functional configuration of the switch input at cavity G1.
E1_____	Indicates the functional configuration of the switch input at cavity E1.
H1_____	Indicates the functional configuration of the switch input at cavity H1.
H2_____	Indicates the functional configuration of the switch input at cavity H2.
K2_____	Indicates the functional configuration of the switch input at cavity K2.
K3_____	Indicates the functional configuration of the switch input at cavity K3.

ECM Output Settings	Description
F3_____	Indicates the functional configuration of the output at cavity F3.
A2_____	Indicates the functional configuration of the output at cavity A2.
S3_____	Indicates the functional configuration of the output at cavity S3.

ECM Output Settings	Description
T3_____	Indicates the functional configuration of the output at cavity T3.
W3_____	Indicates the functional configuration of the output at cavity W3.
X3_____	Indicates the functional configuration of the output at cavity X3.
Y3_____	Indicates the functional configuration of the output at cavity Y3.
A1_____	Indicates the functional configuration of the output at cavity A1.

PWM Functions	Description
J3	Indicates the functional configuration of the PWM output at cavity J3.
Y1	Indicates the functional configuration of the PWM output at cavity Y1.
W2	Indicates the functional configuration of the PWM output at cavity W2.
X2	Indicates the functional configuration of the PWM output at cavity X2.

Timed Input Function	Description
X1	Indicates the functional configuration of the timed input cavity X1.

Air Compressor Configuration

The following table lists all Air Compressor configuration parameters.

Parameter	Description
LOAD PSI	Indicates the delta value above the current air pressure set point that will initiate the air compressor governor to reload the system that is programmed in the DDEC calibration.
UNLOAD PSI	Indicates the delta value above the current air pressure set point that will initiate the air compressor governor to unload the system that is programmed in the DDEC calibration.
MAX RAT #1 PSI	Indicates the maximum allowable air pressure set point for engine rating #1.
MIN RAT #1 PSI	Indicates the minimum allowable air pressure set point for engine rating #1.
MAX RAT #2 PSI	Indicates the maximum allowable air pressure set point for engine rating #2.
MIN RAT #2 PSI	Indicates the minimum allowable air pressure set point for engine rating #2.
MAX RAT #3 PSI	Indicates the maximum allowable air pressure set point for engine rating #3.
MIN RAT #3 PSI	Indicates the minimum allowable air pressure set point for engine rating #3.

Function Lockout Configuration

The following table lists all Function Lockout Configuration parameters.

NOTE:

The following table lists parameters available for only software version 4.0 or higher.

Parameter	Description
IDLE SHUTDOWN	Indicates the enabled/disabled status of the lockout password protection for the reprogram idle shutdown menu that is programmed in the DDEC calibration.
• VSG CALIBRATION (STANDARD) • THROTTLE CAL (MARINE)	Indicates the enabled/disabled status of the lockout password protection for the reprogram VSG calibration menu that is programmed in the DDEC calibration. For marine engines, controls lockout of throttle calibration parameters.
ENGINE PROTECT	Indicates the enabled/disabled status of the lock password protection for the reprogram engine protection menu that is programmed in the DDEC calibration.
CRUISE CONTROL	Indicates the enabled/disabled status of the lockout password protection for the reprogram cruise control menu that is programmed in the DDEC calibration.
PROGRESS SHIFT	Indicates the enabled/disabled status of the lockout password protection for the reprogram progressive shift menu that is programmed in the DDEC calibration.
ENG/VEH OPTIONS	Indicates the enabled/disabled status of the lockout password protection for the reprogram engine/vehicle options menu that is programmed in the DDEC calibration.
ENGINE DROOP	Indicates the enabled/disabled status of the lockout password protection for the reprogram engine droop menu that is programmed in the DDEC calibration.

Parameter	Description
AIR COMPRESSOR	Indicates the enabled/disabled status of the lockout password protection for the reprogram air compressor menu that is programmed in the DDEC calibration.
TRANSMISSIONS	Indicates the enabled/disabled status of the lockout password protection for the reprogram transmission options menu that is programmed in the DDEC calibration.
MAINT ALERT SYS	Indicates the enabled/disabled status of the lockout password protection for the reprogram maintenance alert system options menu that is programmed in the DDE C calibration.

Injector Calibration

The following table lists the calibration parameters for all cylinders.

Parameter	Description
CYL# XX CAL YY XX = CYL NUMBER YY = 1 to 99	Indicates the injector calibration that is currently programmed in the ECM.
LAST UPDATE	0 to 65000 HOURS - Indicates the engine hours of the last injector calibration update.
TOOL ID #	Indicates the tool identification number used 8 characters for the last injector calibration update.
# OF CHANGES:	0 to 255 - Indicates the total number of injector calibration updates.

Total Engine Data

The following table lists all Total Engine Data parameters.

Parameter	Description
FUEL GAL	Indicates the total accumulated amount of fuel used by engine operation.
HOURS	Indicates the total accumulated time of engine operation.
ODO	Indicates the total accumulated vehicle miles traveled.
IDLE HRS	Indicates the total accumulated time of engine operation at idle.
IDLE FL	Indicates the total accumulated amount of fuel used during engine idle operation.
VSG HRS	Indicates the total accumulated time of engine operation on the variable speed governor.
VSG FL	Indicates the total accumulated amount of fuel used during variable speed governor operation.
CRUZ HRS	Indicates the total accumulated time of engine operation on cruise control.

Parameter	Description
ENG BRK HRS	Indicates the total accumulated time of engine brake/retarder operation.
DRV AVG LOAD%	Indicates the average engine load while driving over the life of the change.
REVS	Indicates the total engine revolutions in 1000s over the life of the engine.
Opt Idle Savings	
TIME HRS	Indicates the time saved on engine operation on optimized idle.
FUEL GAL	Indicates the fuel saved during optimized idle.

Engine Trip Data

The following table lists all Engine Trip Data parameters.

Parameter	Description
FUEL GAL	Indicates the total fuel consumed during a trip.
HOURS	Indicates the total accumulated time of operation of the engine during a trip.
FUEL G/H	Indicates the average fuel consumption in gallons or liters per hour during a trip. Calculated by dividing the trip fuel gallons/ liters above by the hours above.
ODO	Indicates the distance traveled during a trip.
FUEL ECON	Indicates the average miles per gallon for the distance traveled during a trip.
IDLE HRS	Indicates the accumulated time of engine operation on idle during a trip.
IDLE FL	Indicates the accumulated amount of fuel used during engine idle operation for a trip.
VSG HRS	Indicates the accumulated time of engine operation on the variable speed governor during a trip.
VSG FL	Indicates the accumulated amount of fuel used during variable speed governor operation for a trip.

Parameter	Description
CRUZ HRS	Indicates the accumulated time of engine operation on cruise control during a trip.
ENG BRK HRS	Indicates the accumulated time of engine brake/retarder operation during a trip.
DRV AVG LOAD%	Indicates the average engine load while driving during a trip.
Opt Idle Savings	
TIME HRS	Indicates the time saved on engine operation on optimized idle.
FUEL	Indicates the fuel saved during optimized idle.

Idle Shutdown Calibration

NOTE:

The Park Brake/ISD (Idle Shut-Down) function must be a switch input to the ECM to allow idle shutdown to be enabled. This is available through factory programming only.

The following table lists all Idle Shutdown Configuration parameters.

Parameter	Range	Description
ENABLED	YES, NO, or N/A	Allows the idle shutdown timers to be enabled. “N/A” will be displayed if (function #5 PARK BRAKE/ISD) has not been configured for a vehicle switch input.
TIME (MIN)	2 TO 100 MINUTES or N/A	Determines the idle time before the engine is shutdown. “N/A” will be displayed if idle shutdown “ENABLE” = NO or N/A.
OVERRIDE	YES, NO, or N/A	Allows for the disable of the idle shutdown by depressing the throttle and releasing during the Check Engine light flashes prior to engine shutdown. “N/A” will be displayed if idle shutdown “ENABLE” = NO or N/A.
ENABLED ON VSG	YES, NO, or N/A	Allows the idle shutdown function to be enabled when the engine is operating at idle or at a VSG set speed. ‘”N/A” will be displayed if idles shutdown “ENABLE” = NO or N/A.
Override Temp Disable		
LOWER LIMIT	Limit -40F° to upper limit	This feature does not allow override of idle shutdown if the ambient temperature is between the lower and upper limit. Lower ambient temperature that will disable idle shutdown.
UPPER LIMIT	Lower limit to 244F°	Upper ambient temperature that will disable idle shutdown.

VSG (Marine Throttle) Reprogrammable Calibration

The following table lists the parameters that allow reprogramming of the DDEC III/IV engine variable speed governor options.

Parameter	Range	Description
• VSG MIN RPM (STANDARD) • LOW IDLE RPM (MARINE)	“IDLE” to “VSG” “MAX SPD”	Indicates the minimum variable speed governor RPM that is programmed in the DDEC calibration. For marine engines, this is the low idle set point RPM.
• VSG MAX RPM (STANDARD) • THRT MAX RPM (MARINE)	“VSG MIN RPM” to “RATED” RPM	Indicates the maximum variable speed governor RPM that is programmed in the DDEC calibration. For marine engines this is the maximum Throttle RPM.
• ALT VSG MIN (STANDARD) • USER IDLE RPM (MARINE)	“VSG MIN RPM” to “VSG MAX RPM”	Indicates the alternate variable speed governor minimum RPM that is programmed in the DDEC calibration. For marine engine, this is the normal user idle set point.

Engine Protection Calibration

The following table lists the Engine Protection parameter values.

NOTE:

When these parameters display with a value of “N/A”, it typically indicates that the sensor(s) and/or function is not part of the engine configuration.

Parameter	Range	Description
OIL TMP	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection
R1 OIL TMP	N/A, WARN, RAMP or SHTDWN	Indicates the Receiver ECM #1 (MID 175) type of engine protection based on high engine oil temperature “N/A” will be displayed if the sensor input is not configured.
COOLANT TMP	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on high engine coolant temperature.
INTRCOOL TMP	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on the engine intercooler coolant temperature.
OIL PRS	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on low engine oil pressure.
CRNKCSE PRS	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on engine crankcase pressure.
COOLANT PRS	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on engine coolant pressure.

Parameter	Range	Description
R1 COOLANT PRS	N/A, WARN, RAMP or SHTDWN	Indicates the Receiver ECM #1 (MID 175) type of engine protection based on engine Coolant Pressure. “N/A” will be displayed if the sensor input is not configured.
COOLANT LVL	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on low coolant level.
OIL LEVEL	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on low engine oil level.
AUX SHTDWN #1	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on auxiliary engine shutdown #1.
AUX SHTDWN #2	N/A, WARN, RAMP or SHTDWN	Indication of the type of engine protection based on auxiliary engine shutdown #2.

Cruise Control Calibration

The following table lists the operating conditions necessary for the cruise control parameters to be available.

Parameter	Range	Description
VSS ENABLED	YES, NO or N/A	Allows the vehicle speed sensor to function. A VSS must be present on the vehicle for this to function. If the engine has sequential Turbo, reprogramming will not be allowed.
VSS TYPE [1,2]	TAIL, WHEEL J1939, or N/A	Allows the selection of the vehicle speed sensor type.
VSS TEETH[2]	0 to 250 or N/A	Allows the selection of the number of teeth that the VSS is to detect.
VSS SIGNAL[2] (STANDARD) THRT SIGNAL (MARINE)	Switched, Magnetic, or N/A	Indicates the type of VSS signal for. For marine engines indicates the type of throttle signal. “N/A” will be displayed if VSS ENABLED = NO.
TIRE REVS[2]	100 to 999 or N/A	Allows selection of tire revolutions per mile or kilometer.
AXLE RATIO[2]	2.00 to 19.99	Select the vehicle axle ratio.
TOP GEAR[2]	0.20 to 2.55	Select the top gear ratio.
VEHICLE SPD LMT[2]	YES, NO or N/A	This puts an upper limit on the speed of the vehicle.
VEHICLE SPD[3]	10 MPH to $\frac{\text{RATED RPM}}{\text{VSS RATIO}}$	Allows programming of the maximum vehicle speed in MPH or KPH.
VSS ANTI-TAMPER[3]	YES, NO or N/A	Allows selection of a feature that can detect if the VSS has been tampered with.
CRUISE CONTROL	YES, NO or N/A	Allows the cruise control function to be used. A Set/Coast on switch must be configured.

Parameter	Range	Description
MIN CRUZ[4]	20 MPH to "MAX CRUZ SPD" MPH or N/A	This is the lowest speed set for the cruise control.
MAX CRUZ[4]	"MIN CRUZ SPD" to "VEHICLE SPD MPH" If "VEHICLE SPD LMT" = YES, "MIN CRUZ SPD" to $\frac{\text{RATED RPM}}{\text{VSS RATIO}}$ IF VEHICLE SPD LMT = NO	This is the maximum speed at which the cruise control can be set.
AUTO RESUME[4]	YES, NO or N/A	Allows the cruise auto resume function to be enabled.
CRZ SW VSG[4]	YES, NO or N/A	Allows the cruise switched function to be enabled.
INIT RPM[5]	"VSG MIN RPM" to "VSG MAX RPM"	Select the cruise switched VSG initial RPM.
RPM INCR[5]	1 to 255 RPM	Allows the selection of the cruise switched VSG RPM increment.
CRZ/ENG BRK[4]	YES, NO or N/A	Allows the engine brake to be used while on cruise control if the vehicle exceeds the cruise set speed. Engine brakes must also be configured.
CRZ/ENG BRK MPH[6]	1 to 7 MPH or N/A	Vehicle speed above the current set speed that must be reached before the engine brake will activate the low level retardation.

Parameter	Range	Description
ENG BRK INC[6]	0 to 4 MPH or N/A	Additional incremental speed which must be reached before the engine brake will activate the medium and/or high level of retardation.
MAX OVRSPD LMT[3]	0 to 127 MPH or N/A	Vehicle speed above which a diagnostic code will be logged (PID 84 FMI 0) if the driver fuels the engine and exceeds this speed limit. Entering a value of zero will disable this diagnostic test.
MAX SPD NO FUEL[3]	0 to 127 MPH or N/A	Vehicle speed above which a diagnostic code will be logged (PID 84 FMI 11) if the vehicle reaches this speed without fueling the engine. Entering a value of zero will disable this diagnostic test.
PASS DUR[7]	0-255 min	The duration of time per interval that is permitted at the higher speed. A value of zero will disable the feature.
PASS RST[7]	1-24 hrs	The period of time when the ECM resets to begin a new period.
PASS SPD[7]	1-20 MPH	The additional vehicle speed permitted above the programmed vehicle speed limit. A value of zero will disable the feature.

1 If J1939 is configured, this value cannot be changed.

2 Requires VSS ENABLED = YES.

3 Requires VEHICLE SPD LMT = YES.

4 Requires CRUISE CONTROL = YES or VSS ENABLED = YES.

5 Requires CRUZ SW VSG = YES.

6 Requires CRUZ/ENG BRK = YES.

7 If the passing speed function is disabled in the ECU, this value cannot be changed.

Progressive Shift Calibration

The following table lists the parameters available for the **Progressive Shift** function.

NOTE:

A change in any of the parameters that would cause an indicated dependent parameter to fall out of its valid range will result in the dependent parameter being implicitly updated as well.

Parameter	Range	Description
ENABLED	YES, NO or N/A	Allows the progressive shifting function to be enabled.
LG #1OFF SPD	12 to 27 MPH or N/A	Allows the selection of Low Gear #1 turn-off speed in miles per hour or kilometers per hour.
LG #1 RPM LMT	1000 to “LG#1 MAX LMT” RPM or N/A	Allows the selection of Low Gear #1 engine RPM maximum limit.
LG #1 MAX LMT	1600 to “RATED” RPM[1] or N/A	Allows selection of Low Gear #1 turn-off RPM maximum limit.
LG #2 OFF SPD	27 to 44 MPH or N/A	Allows the selection of Low Gear #2 turn-off speed in miles per hour or kilometers per hour.
LG #2 RPM LMT	1600 to “RATED” RPM or N/A	Allows the selection of Low Gear #2 turn-off RPM maximum limit.
LG #2 MAX LMT	1400 to “RATED” RPM or N/A	Allows the selection of Low Gear #2 turn-off RPM maximum limit.
HG ON SPD	45 to 127 MPH or N/A	Select the High Gear turn-on maximum vehicle speed in miles per hour or kilometers per hour.
HG RPM LMT	1650 to “RATED” RPM or N/A	Select High Gear maximum engine RPM limit (may limit the cruise control parameter VEHICLE SPD MPH)

1 “RATED” = Engine Rated RPM. The ECM value for this parameter can be viewed under the MPC menu “ENGINE MENU/VIEW CALIBRATIONS/ENGINE CONFIG/ ENG RATED”

Engine Droop Options

The following table lists the engine droop options that may be reprogrammed.

Parameter	Range	Description
• VSG DROOP RPM (STANDARD) • THROT DRP RPM (MARINE)	0 to LSG DROOP RPM	Indicates the variable speed governor droop in RPM that is programmed in the DDEC calibration. For marine engines, this is the amount of throttle droop.
LSG DROOP RPM	0 to MAX Droop RPM	The limiting speed governor droop.

Engine and Vehicle Options

The following table lists the reprogrammable **Engine and Vehicle Options** parameters.

Parameter	Description
UNIT #	10 characters - Allows the reprogramming of the vehicle unit number identification.
V	17 characters - Allows the reprogramming of the vehicle identification number.
IDLE ADJUST	Typically - 25 to 150 RPM - Allows small adjustment of the idle RPM.
DYNAMIC BRAKING	YES, NO or N/A - Allows the Dynamic Braking feature to be enabled. Requires that the ECM is configured for engine brakes and fan controls.
ENG BRK/SER BRK	YES, NO or N/A - Allows the engine brake to be activated when the brake pedal is pressed. Requires engine brakes to be configured.
ENG BRK MIN	(0 to 40 MPH), (0 to 64 KPH), or N/A - Allows programming of the minimum brake operation RPM.
HALF ENGINE	Indicates how half engine mode will depend on temperature. Reprogramming may be disabled as part of the ECM calibration off, on, if cold.

Parameter	Description
FUEL ECON	This feature will add a MPH delta to the INCENTIVE cruise and road speed maximums based on average fuel economy. The feature is intended to provide incentive to the driver to operate the vehicle in such a way as to maximum MPG.
MINIMUM MPG[1]	Indicates the minimum MPG (or Maximum L/100 K) threshold to enable the cruise and road speed adjustment feature that is programmed in the DDEC calibration.
MAX SPEED[1]	Indicates the maximum adjustment value for cruise and road speed adjustment that is programmed in the DDEC calibration.
ECON[1]	Fuel economy for maximum speed delta adjustment. Indicates the calculated MPG (or L/100km) for the maximum speed adjustment value. This parameter is calculated using the programmable parameters “MINIMUM MPG”, “MAX SPEED”, and the current value given by the engine controller for conversion factor (formerly the MPC displayed parameter “SCALER”). The calculation is: ECON = (MAX SPEED / conversion factor) + MINIMUM MPG.
CALC TYPE	Indicates the speed adjustment calculation type that is programmed in the DDEC calibration. The speed adjustment can be calculated from short term MPG or long term MPG.
IDLE METHOD	Indicates which method will be used to determine if the engine is on idle for the purpose of idle data accumulation. Requires VSS ENABLED = NO.
LOAD LIMIT %	If IDLE METHOD is RPM/LOD, displays the load limit under which idle data will be accumulated.
RPM LIMIT	If IDLE METHOD is RPM/LOD, displays the RPM limit under which idle data will be accumulated.

1 User changes to “ECON”, “MAX SPEED” or “MINIMUM MPG” ultimately result in a re-calibration of the conversion factor programmed into the ECM. The valid range for the ECON parameter shifts with changes to either MINIMUM MPG or MAX SPEED. This range is calculated as follows:

- Minimum ECON = (MAX SPEED / max allowable conversion factor) + MINIMUM MPG
- Maximum ECON = (MAX SPEED / min allowable conversion factor) + MINIMUM MPG
- As of this printing, the valid ECM range for conversion factor is 0.1 - 20.0 mph/mpg)
- If MPH or MPG are modified such that the currently entered ECON value falls out of its updated valid range, then ECON defaults to its minimum or maximum value for the updated range.

Engine Rating Calibration

The following table lists all reprogrammable Engine Rating parameters.

Parameter	Value Range	Definition
#1 XXX @ XXXX	0 to 999 BHP, 0 to 999 KW, 0 to 9999 RPM	A standard rating is displayed as XXX @ YYYY. Where XXX = BHP and YYYY = RPM. A cruise rating is displayed as XXX/XXX @ YYYY. “N/A” will be displayed if the engine rating #1 is unavailable.
#2 XXX @ XXXX	0 to 999 BHP, 0 to 999 KW, 0 to 9999 RPM	A standard rating is displayed as XXX @ YYYY. Where XXX = BHP and YYYY = RPM. A cruise rating is displayed as XXX/XXX @ YYYY. “N/A” will be displayed if the engine rating #2 is unavailable.
#3 XXX @ XXXX	0 to 999 BHP, 0 to 999 KW, 0 to 9999 RPM	A standard rating is displayed as XXX @ YYYY. Where XXX = BHP is displayed as XXX/XXX @ YYYY. “N/A” will be displayed if the engine rating #3 is unavailable.

Parameter	Value Range	Definition
#4 XXX @ XXXX	0 to 999 BHP, 0 to 999 KW, 0 to 9999 RPM	A standard rating is displayed as XXX @ YYYY. Where XXX = BHP is displayed as XXX/XXX @ YYYY. “N/A” will be displayed if the engine rating #4 is unavailable.
USE SWITCHES	YES, NO, or N/A	Allows engine rating to be determined by switch inputs.

Air Compressor Calibration

The following table lists the reprogrammable Air Compressor parameters.

Parameter	Range	Description
LOAD PSI	0.0 to 999.9 PSI	Lower pressure offset below set point that will load the air compressor governor.
UNLOAD PSI	0.0 to 999.9 PSI	Upper pressure offset above set point that will unload the air compressor governor.
MAX RAT #1 PSI	0.0 to 999.9 PSI	Indicates the maximum point for Engine Rating #1.
MINRAT #1 PSI	0.0 to 999.9 PSI	Indicates the minimum allowable air pressure set point for Engine Rating #1.
MAXRAT #2 PSI	0.0 to 999.9 PSI	Indicates the maximum allowable air pressure set point for Engine Rating #2.
MIN RAT #2 PSI	0.0 to 999.9 PSI	Indicates the minimum allowable air pressure set point for Engine Rating #2.
MAXRAT #3 PSI	0.0 to 999.9 PSI	Indicates the maximum allowable air pressure set point for Engine Rating #3.
MINRAT #3 PSI	0.0 to 999.9 PSI	Indicates the minimum allowable air pressure set point for Engine Rating #3.

Transmission Calibration

The following table lists the reprogrammable ESS Transmission parameters.

Parameter	Range	Description
Late Chance	YES, NO or N/A	Indicates if late gear change is enabled.
Second Chance	YES, NO or N/A	Indicates if second chance shift is enabled.
Eng Brake Shift	YES, NO or N/A	Indicates if engine brake shift is enabled.
Skip Shift	YES, NO or N/A	Indicates if skip shift is enabled.

Top 2 Transmission

The following table presents the parameter available for the Top 2 Transmission type.

Parameter	Range	Description
Top 2 Cruise SW	ON, OFF, or N/A	Enables or disables the use of the cruise master switch to activate top 2.

Maintenance Alert System Calibration

The following table lists all reprogrammable parameters available on the Maintenance Alert System.

Parameter	Range	Description
FILTERS	NO, FLASH, CONTINUOUS, or BOTH	Determines the behavior of the Check Engine Light on a maintenance alert for filters. “NO” means that the CEL will not come on. “FLASH” means it will flash at ignitions on only “CONTINUOUS” means the light will stay on when there is an alert, but will not flash at ignition on. “BOTH” means the light will come on continuously when the alert occurs. and will flash at ignition on.
LEVELS	NO, FLASH, CONTINUOUS, or BOTH	Determines the behavior of the Check Engine Light (CEL) on a maintenance alert for fluid levels. “NO” means that the CEL will not come on. “FLASH” means it will flash at ignition on only. “CONTINUOUS” means the light will stay on when there is an alert, but will not flash at ignition on. “BOTH” means the light will come on continuously when the alert occurs, and will flash at ignition on.

ECM Input Switches

The following table lists all available ECM input switches.

- **GND** = Input has been connected to ground
- **OPN** = Input is open-circuit

Parameter	Range	Description
J1	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity J1. N/A will be displayed if a function number of (0=NONE) has been assigned.
F1	GND, OPN, N/A	Indicates the electrical status be displayed if a function number of (0=NONE) has been assigned.
G3	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity G3. N/A will be displayed if a function number of (0=NONE) has been assigned.
F2	GND, OPN, N/A	Indicates the electrical status be displayed if a function number of (0=NONE) has been assigned.
J2	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity J2. N/A will be displayed if a function number of (0=NONE) has been assigned.
G2	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity G2. N/A will be displayed if a function number of (0=NONE) has been assigned.
G1	GND, OPN, N/A	Indicates the electrical status be displayed if a function number of (0=NONE) has been assigned.
E1	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity E1. N/A will be displayed if a function number of (0=NONE) has been assigned.

Parameter	Range	Description
H1	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity H1. N/A will be displayed if a function number of (0=NONE) has been assigned.
H2	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity H2. N/A will be displayed if a function number of (0=NONE) has been assigned.
K2	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity K2. N/A will be displayed if a function number of (0=NONE) has been assigned.
K3	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity K3. N/A will be displayed if a function number of (0=NONE) has been assigned.

ECM Output Status

The following table lists each of the ECM output cavities.

- **GND** = ECM is connecting this output wire to ground.
- **OPN** = ECM is open-circuiting this output wire.
- **BAT** = ECM is applying battery voltage to this output wire.

NOTE:

The Pro-Link® identifies the assigned functions by cavity number and description. The status of the functions will read as GND, OPN, BAT or N/A.

Parameter	Range	Description
Check Eng Lt	GND, OPN	Indicates the electrical status of the check engine light.
Stop Eng Lt	GND, OPN	Indicates the electrical status of the stop engine light.

Parameter	Range	Description
F3	GND, OPN, N/A	Indicates the electrical status of the switch input at vehicle connector cavity F3. N/A will be displayed if a function number of (NONE=0) has been assigned.
A2	GND, OPN, N/A	Indicates the electrical status displayed if a function number of (NONE=0) has been assigned.
S3	BAT, OPN, N/A	Indicates the electrical status of the engine retarder low output at the engine connector cavity S3. N/A will be displayed if a a function number of (NONE=0) has been assigned.
T3	BAT, OPN, N/A	Indicates the electrical status cavity T3. N/A will be displayed if a function number of (NONE=0) has been assigned.
W3	GND, OPN, N/A	Indicates the electrical status of the output at the engine connector cavity W3. N/A will be displayed if a function number of (NONE=0) has been assigned.
X3	GND, OPN, N/A	Indicates the electrical status displayed if a function number of (NONE=0) has been assigned.
Y3	GND, OPN, N/A	Indicates the electrical status of the output at the engine connector cavity Y3. N/A will be displayed if a function number of (NONE=0) has been assigned.
A1	GND, OPN, N/A	Indicates the electrical status of the output at the vehicle connector cavity A1. N/A will be displayed if a function number of (NONE=0) has been assigned.

Activate ECM Output

Pro-Link® identifies the assigned functions by cavity number and description.

- **GND** - ECM is connecting this output wire to ground.
- **OPN** - ECM is open-circuiting this output wire.
- **BAT** - ECM is applying battery voltage to this output wire.
- **% GND** - indicates% of the duty cycle that the signal is at ground potential.

The following table lists the ECM output cavity functions.

NOTE:

Glow Plug is limited to 0-25% PWM.

NOTE:

On multiple ECM engines, outputs may be for each ECM, a title for each ECM is displayed above each group of outputs.

Active Outputs		
MID: 128 ECM	**Range**	**Description**
CHECK ENG LT	OPN, GND	Allows the activation of the check engine light.
STOP ENG LT	OPN, GND	Allows the activation of the stop engine light.
F3————	–	N/A
A2————	OPN, GND, N/A	Allows the activation of the output at the vehicle connector cavity A2. N/A will be displayed if an output function has not been assigned.
S3————	BAT, OPN, N/A	Allows the activation of the output at the vehicle connector cavity S3. N/A will be displayed if an output function has not been assigned.
T3————	BAT, OPN, N/A	Allows the activation of the output at the vehicle connector cavity T3. N/A will be displayed if an output function has not been assigned.

Active Outputs		
MID: 128 ECM	**Range**	**Description**
W3————	OPN, GND, N/A	Allows the activation of the output at the engine connector cavity W3. N/A will be displayed if an output function has not been assigned.
X3————	OPN, GND, N/A	Allows the activation of the output at the vehicle connector cavity X3. N/A will be displayed if an output function has not been assigned.
Y3————	OPN, GND, N/A	Allows the activation of the output at the vehicle connector cavity Y3. N/A will be displayed if an output function has not been assigned.
A1————	OPN, GND, N/A	Allows the activation of the output at the vehicle connector cavity A1. N/A will be displayed if an output function has not been assigned.
J3———— PWM #1XX%	GND	Allows activation of the PWM drive #1 output at a specified% duty cycle. N/A will be displayed if a function has not been configured.
Y1——— PWM #2XX%	GND	Allows activation of the PWM drive #2 output at a specified % duty cycle. N/A will be displayed if a function has not been configured.
W2——— PWM #3XX%	GND	Allows activation of the PWM drive #3 output at a specified % duty cycle. N/A will be displayed if a function has not been configured.
X2——— PWM #4XX%	GND	Allows activation of the PWM drive #4 output at a specified % duty cycle. N/A will be displayed if a function has not been configured.

Transmission Configuration

The following table lists all parameters that can be reprogrammed in via the Transmission Configuration feature.

Parameter	Range	Description
Trans	–	Indicates the selected transmission type.
Late Change	YES, NO or N/A	Indicates whether late gear change is enabled.
Second Chance	YES, NO or N/A	Indicates whether second chance shift is enabled.
Eng Brake Shift	YES, NO or N/A	Indicates whether engine brake shift is enabled.
Skip Shift	YES, NO or N/A	Indicates whether skip shift is enabled.

Performance Data

The following table lists the parameters available for Transmission Performance Data.

Parameter	Range	Description
Output RPM	0 to 9999 RPM	Indicates the current output shaft RPM.
Target Gear	0, L, 1-15	Indicates the desired gear.
Current Gear	0, N, 1-15	Indicates the current gear.
Shift Knob	0 to 1024	Displays the shift knob A/D counts.
System Switch	ON, OFF, N/A or Fail	Indicates the state of the ESS system switch.
Shift Intent	ON, OFF, N/A or Fail	Indicates the position of the Shift Intent Range Switch.
Brake Torque	ON, OFF, N/A or Fail	Indicates the position of the Brake Torque Buttons.
Neutral Switch	ON, or OFF	Indicates the current state of the Neutral Switch.
In Gear Switch	ON, or OFF	Indicates the state of the In Gear Switch.

Parameter	Range	Description
High Range SOL	ON, or OFF	Indicates the status of the high gear range solenoid.
Low Range SOL	ON, or OFF	Indicates the status of the low range solenoid.

Transmission Trip Data

The following table lists the reprogrammable parameters available for Transmission Trip Data.

Parameter	Range	Description
ESS Shifts	0 to 255	Indicates the number of ESS shifts completed.
Aborted Shifts	0 to 255	Indicates the number of Aborted Shifts.
Non-ESS Shifts	0 to 255	Indicates the number of non-ESS shifts completed by the driver.

Maintenance Alert System

The following table lists the parameters available for the Maintenance Alert System.

Parameter	Description
OIL LEVEL	Indicates the engine oil level displays OK or ADD. **Note:** While the engine is running, or for a few minutes after shutting down the engine, the oil level displays UNKNOWN.
COOL LEVEL	Indicates the engine coolant level, determined by the Coolant Level Sensor. Will display FULL, ADD or LOW. Some engines may be equipped with an optional Second Coolant Level Sensor.
AIR FILTER	Indicates the condition of the Air Inlet Filter. “ERROR” will be displayed if the Air Filter Restriction Sensor fails. **Note:** After replacing the filter, “PLUGGED” will be displayed until Inactive codes are cleared.
OIL FILTER	Indicates the condition of the Oil Filter. “ERROR” will be displayed if the Oil Filter Restriction Sensor fails. **Note:** After replacing the filter, “PLUGGED” will be displayed until Inactive codes are cleared.
FUEL FILTER	Indicates the condition of the Fuel Filter. “ERROR” will be displayed if the Fuel Filter Restriction Sensor fails. **Note:** After replacing the filter, “PLUGGED” will be displayed until Inactive codes are cleared.
FILTERS	Determines the behavior of the Check Engine Light (CEL) on a maintenance alert for filters. “NO” means that the CEL will not come on. “FLASH” means it will flash at ignition on only. “CONTINUOUS” means the light will stay on when there is an alert, but will not flash at ignition on. “BOTH’ means the light will come on continuously when the alert occurs, and will flash at ignition on.
LEVELS	Determines the behavior of the Check Engine Light (CEL) on a maintenance alert for fluid levels. “NO” means that the CEL will not come on. “FLASH” means it will flash at ignition on only. “CONTINUOUS” means the light will stay on when there is an alert, but will not flash at ignition on. “BOTH’ means the light will come on continuously when the alert occurs, and will flash at ignition on.

DDEC Marine Controls Parameters

This section provides listings of all parameters available for viewing and/or reprogramming within the DDEC Marine Controls application.

Locating DDEC Marine Controls Parameters

The following table lists all available DDEC Marine Controls parameter types and corresponding page numbers.

Marine Controls Data List

The following table lists all data list parameters and their current values for the DDEC Marine Controls.

Parameter	Range	Description
ACTIVE CODES	YES or NO	Indicates the presence of a condition(s) that is not normal. Only available for version 3.0 marine controls.
ACTIVE CSIM	1-6	Indicates which control station is active.
ACTIVE CSIM OK	YES or NO	Indicates whether the active CSIM is still responding properly.
BOW THRUSTER	YES or NO	Indicates the presence of a Bow Thruster. Only available for version 3.0 marine controls.
CDES SNCE PWER UP	YES or NO	Indicates that current or active codes have been stored in the ERIM memory. These codes are deleted when ignition is turned off.
CSIM ACTIVATED	YES or NO	Indicates if a control station has been activated since power-up.
CSIM LOW VOLT	YES or NO	Indicates the presence of a low voltage condition on the active CSIM.
CSIM BATTERY V	0 to 99.9	Displays the active CSIM's current battery voltage.
*ERIM MODE (*See page 201 for ERIM Mode display details.)	–	Indicates the current operating mode of the Engine Room Interface Module.
ERIM BATTERY V	0 to 99.9	Displays the ERIM's current battery voltage. Only available for version 3.0 marine controls.
EXIT SYNC MODE	YES or NO	Indicates that sync mode is being exited.
FWD DRAG DOWN	YES or NO	Indicates the current status of the reverse drag down mode.

Parameter	Range	Description
GEAR RATIO SET	YES or NO	Indicates that a new gear actuator ratio has been calculated. Only available for version 2.0 and 2.5 marine controls.
GEAR RATIO	0-999.9	Indicates the gear ratio. Only available for version 2.0 and 2.5 marine controls.
HRS IN SERV	0-99999	Indicates the total hours the ERIM has been in service with either ignition switch.
#LVR C/HEADS	DUAL or SINGLE	Indicates whether dual control head levers are used at the active station.
MASTER THROT	PORT/STBD	Indicates which throttle lever (either Port or Starboard) is master in sync mode.
NON VOL MEM	OK or BAD	Indicates whether the non-volatile memory is defective.
PORT ENGINE RPM	0-3000	Indicates the engine RPM as seen by the Port ECM.
PORT TO ECM RPM	0-2040	Indicates the requested RPM from the ERIM to the Port ECM.
STBD ENGINE RPM	0-3000	Indicates the engine RPM as seen by the Starboard ECM.
STBD TO ECM RPM	0-2040	Indicates the requested RPM from the ERIM to the Starboard ECM.
PORT IDLE RPM	0-999	Indicates the current RPM value the Port ECM is using to maintain idle speed.
STBD IDLE RPM	0-999	Indicates the current RPM value the Starboard ECM is using to maintain idle speed.
PORT COMMAND RPM	0-2040	Indicates the requested Port Engine RPM from the CSIM to the ERIM.
STBD COMMAND RPM	0-2040	Indicates the requested Starboard Engine RPM from the CSIM to the ERIM.

Parameter	Range	Description
PT GEAR ACT POS	REV, NEUT, FWD, UNKN	Indicates the current position in percentage of full travel of the Port Gear actuator. Only available for version 3.0 marine controls.
PT GEAR ACT CMD	NEUT, FWD, REV	Indicates the gear currently being commanded by the ERIM to the Port Gear actuator.
PT GEAR ACT REQ	NEUT, FWD, REV	Indicates the gear currently being selected by the Port control head through CSIM.
ST GEAR ACT POS	REV, NEUT, FWD, UNKN	Indicates the current position in percentage of full travel of the Starboard gear actuator. Only available for version 3.0
ST GEAR ACT CMD	NEUT, FWD, REV	Indicates the gear currently being commanded by the ERIM to the Starboard gear actuator.
ST GEAR ACT REQ	NEUT, FWD, REV	Indicates the gear currently being selected by the Starboard Control head through CSIM.
PORT SOL ENG	YES or NO	Indicates whether the Port engine solenoid is engaged. Only available for version 2.0 and 2.5 marine controls.
STBD SOL ENG	YES or NO	Indicates whether the Starboard engine solenoid is engaged. Only available for version 2.0 and 2.5 marine controls.
PORT NEUT STAT	YES or NO	Indicates that the Port marine gear actuator is in the neutral position. Only available for version 2.0 and 2.5 marine controls.
STBD NEUT STAT	YES or NO	Indicates that the Starboard marine gear actuator is in neutral position. Only available for version 2.0 and 2.5 marine controls.
PORT ENG RUN	YES or NO	Indicates whether the Port engine is running.

Parameter	Range	Description
STBD ENG RUN	YES or NO	Indicates whether the Starboard engine is running.
PORT THROT QUAL	YES or NO	Indicates the qualification of the active throttle lever on the Port side.
STBD THROT QUAL	YES or NO	Indicates the qualification of the active throttle lever on the Port side.
PORT SHIFT QUAL	YES or NO	Indicates the qualification of the active shift lever on the Port side.
STBD SHIFT QUAL	YES or NO	Indicates the qualification of the active shift lever on the Starboard side.
REV DRAG DOWN	YES or NO	Indicates the current status of the reverse drag down mode.
PT GEAR ACT LD	OK or OVRLD	Indicates if the Port gear actuator is overloaded. Only available for version 3.0 marine controls.
PT GEAR ACT COMS	OK or BAD	Indicates if the communications to the Port 3.0 marine controls.
ST GEAR ACT LD	OK or OVRLD	Indicates if the Starboard gear actuator is overloaded. Only available for version 3.0 marine controls.
ST GEAR ACT COMS	OK or BAD	Indicates whether the communications to the Starboard Gear Actuator are valid. Only available for version 3.0 marine controls.
PORT GEAR ACT V	0.0 to 99.9	Indicates voltage sensed at the Starboard Gear Actuator. Only available for version 3.0 marine controls.
STBD GEAR ACT V	0.0 to 99.9	Indicates voltage sensed at the Starboard Gear Actuator. Only available for version 3.0 marine controls.
PORT PRESS SW	ON or OFF	Indicates whether the Port gear pressure switch is closed. Only available for version 2.0 and 2.5 marine controls. **Note**: This will indicate “OFF” if no pressure switch is installed.

Parameter	Range	Description
PORT TROLL ENG	YES/NO	Indicates that the Port trolling actuator is engaged.
PORT SHAFT RPM	0-3000	Indicates the actual Port shaft RPM. Only on trolling applications.
PT SHAFT CMD RPM	0-3000	Indicates the requested Port shaft RPM from the CSIM. Only available for version 2.0 and 2.5 marine controls.
STBD PRESS SW	ON or OFF	Indicates whether the Starboard gear pressure switch is closed. Only available for version 2.0 and 2.5 marine controls. **Note**: This will indicate “OFF” if no pressure switch is installed.
STBD SHAFT RPM	0-3000	Indicates the actual Starboard shaft RPM. Only on trolling applications.
STBD TROLL ENG	YES/NO	Indicates that the Starboard trolling actuator is engaged.
TRANSFER CSIM	YES or NO	Indicates that a transfer of control station is in progress.
TROLL ENG RPM	0-9999	Indicates the current engine RPM being commanded while in troll mode.
SET TRL ENG SPD	YES or NO	Indicates that the ERIM is in the mode of setting a new troll engine speed.
ST SHAFT CMD RPM	0-3000	Indicates the requested Port shaft RPM from the CSIM. Only available for version 2.0 and 2.5 marine controls.
PORT TROLL POS%	0.0 to 100	The actual position of the Port troll actuator. Only available for version 3.0 marine controls.
PORT TROLL CMD%	0 to 100	Indicates percent troll commanded by the CSIM on the Port side. Only available for version 3.0 marine controls.

Parameter	Range	Description
STBD TROLL POS%	0.0 to 100	The actual position of the Starboard troll actuator. Only available for version 3.0 marine controls.
STBD TROLL CMD%	0.0 to 100	Indicates the percent troll commanded by the CSIM on the Starboard side. Only version 3.0 marine controls.
PORT TRL LOAD	OK or HIGH	Indicates whether the Port troll actuator is overloaded. Only available for version 3.0 marine controls.
PORT TRL COM OK	YES or NO	Indicates whether the communications to the Port Troll Actuator are valid. Only available for version 3.0 marine controls.
STBD TRL LOAD	OK or HIGH	Indicates whether the Starboard troll actuator is overloaded. Only available for version 3.0 marine controls.
STBD TRL COM OK	YES or NO	Indicates whether the communications to the Starboard Troll Actuator are valid. Only available for version 3.0 marine controls.
PORT TROL V	0.0 to 99.9	Voltage sensed at the Port Troll Actuator. Only available for version 3.0 marine controls.
STBD TROL V	0.0 to 99.9	Voltage sensed at the Starboard Troll Actuator. Only available for version 3.0 marine controls.

ERIM Mode Information

The following is a description for each ERIM Mode display.

Display	Description
ERIM MODE POWER UP	Power Up Mode - Performing initial power-up diagnostics.
ERIM MODE DRY RUN	Dry Run Mode - Ignition ON; Engine not running.
ERIM MODE NON SYNC	Dual Throttle Mode - Engines being controlled by separate throttles.
ERIM MODE SYNC	Sync Mode - Engines synced to a single throttle.
ERIM MODE SET IDLE	Set User Idle Mode - Allows user to set the normal idle RPM.
ERIM MODE STA TRANS	Station Transfer Mode - Transferring control from one station to another.
ERIM MODE TROLL	Troll Mode - Transmission in trolling position.
ERIM MODE PWR DN	Power Down Mode - Performing diagnostics during power off cycles.
ERIM MODE DUAL RST	Dual ERIM Reset Mode.
ERIM MODE UNDEFINED	ERIM Mode not defined.

Marine Controls Historic Codes

The following table lists the parameters available for Historic Codes.

Parameter	Description
Marine Controls version 2.0 and 2.5	
PORT PRESS SWITCH	Port Pressure Switch is not closed when it should be.
STBD PRESS SWITCH	Starboard Pressure Switch is not closed when it should be.
PORT GR SOLENOID	Port Gear Actuator solenoid is not energized when it should be.
STBD GR SOLENOID	Starboard Gear Actuator solenoid is not energized when it should be.
LOW CSIM VOLTS	Active CSIM voltage low.
PORT TROLL NOT ENG	Port transmission not fully engaged, still in troll mode.
STBD TROLL NOT ENG	Starboard transmission not fully engaged, still in troll mode.
Marine Controls version 3.0	
NO ERROR CODES	–
LOW VOLTAGE @CSIM	Voltage supply at CSIM is low.
ACTUATOR LOW VOLTS	Voltage supply at actuator is low.
ACTIVE CSIM COM LOSS	Active CSIM is not responding.
MSTR CSIM COMM LOSS	Master CSIM is not responding.
CSIM 2 COMM LOSS	CSIM #2 is not responding.
CSIM 3 COMM LOSS	CSIM #3 is not responding.
CSIM 4 COMM LOSS	CSIM #4 is not responding.
CSIM 5 COMM LOSS	CSIM #5 is not responding.
CSIM 6 COMM LOSS	CSIM #6 is not responding.

Parameter	Description
AUX COMM-LINK LOSS	Loss of auxiliary communications link.
ERIM EEPROM ALERT	ERIM EEPROM write error.
ERIM M1 ALERT	Port microprocessor error.
ERIM M2 ALERT	Starboard microprocessor error.
ERIM NOT DDEC3 ALERT	ERIM is not of upgraded software.
ERIM DIAG ALERT	Internal error detected in system.
EXIT SYNC QUAL ALERT	Occurs when operator exits sync mode and does not qualify follower throttle.
BACKUP PANEL ACTIVE	System is being controlled by the back up throttle.
PORT J1708 COMM LOSS	Loss of all communications on the port link.
PORT ENGINE STOPPED	Port engine not running.
PORT POT OUT OF RANGE	Port throttle potentiometer out of range.
PORT THRT QUAL ALERT	Unexplained loss of throttle qualification on Port throttle.
PORT GEAR QUAL ALERT	Unexplained loss of qualification on Port gear.
Port GEAR COMM loss	Port gear not responding.
PORT GEAR LOW VOLTS	Low voltage supply at Port gear.
PORT GEAR HI LOAD	Loading on Port gear actuator is higher than normal.
PORT GEAR NOT @ NEU POS	Port gear not in neutral when commanded to be in neutral
PORT GEAR NOT @ NEU POS	Port gear not in neutral when commanded to be in neutral.
PORT GEAR NOT @ REV POS	Port gear not in reverse when commanded to be in reverse.

Parameter	Description
PORT TROLL COMM LOSS	Port Troll actuator not responding.
PORT TROLL LOW VOLTS	Low voltage supply at Port troll actuator.
PORT TROLL HI LOAD	Loading on port troll actuator is higher than normal.
PORT TROLL NOT @ EGD POS	Port troll actuator not in the engaged position when commanded to engage.
PORT TROLL NOT @ CMD POS	Port troll actuator not in the commanded position.
PORT ENG TACH LOSS	Loss of port engine speed signal.
PORT CMD RPM RANGE	Commanded port RPM out of range.
PORT LCP ACTIVE	Local control panel controlling the Port engine.
PORT GEAR DIAG ALERT	Port gear actuator diagnostics failed.
PORT TROLL DIAG ALERT	Port troll actuator diagnostics failed.
STBD J1708 COMM LOSS	Loss of all communications on the Starboard link.
STBD ENGINE STOPPED	Starboard engine not running.
STBD POT OUT OF RANGE	Starboard throttle potentiometer out of range.
STBD THRT QUAL ALERT	Unexplained loss of throttle qualification on Starboard throttle.
STBD GEAR QUAL ALERT	Unexplained loss of qualification on Starboard gear.
STBD GEAR COMM LOSS	Starboard gear not responding.
STBD GEAR LOW VOLTS	Low voltage supply at Starboard gear.
STBD GEAR HI LOAD	Loading on Starboard gear actuator is higher than normal.

Parameter	Description
STBD GEAR NOT @ FWD POS	Starboard gear not in forward when commanded to be in forward.
STBD GEAR NOT @ NEU POS	Starboard gear not in neutral when commanded to be in neutral.
STBD GEAR NOT @ REV POS	Starboard gear not in reverse when commanded to be in reverse.
STBD TROLL COMM LOSS	Starboard troll actuator not responding.
STBD TROLL LOW VOLTS	Low voltage supply at Starboard troll actuator.
STBD TROLL HI LOAD	Loading on Starboard troll actuator is higher than normal.
STBD TROLL NOT @ EGD POS	Starboard troll actuator not in the engaged position when commanded to engage.
STBD TROLL NOT @ CMD POS	Starboard troll actuator not in the commanded position.
STBD ENG TACH LOSS	Loss of Starboard engine RPM signal.
STBD CMD RPM RANGE	Commanded Starboard engine RPM out of range.
STBD LCP ACTIVE	Local Control Panel controlling the Starboard engine.
STBD GEAR DIAG ALERT	Starboard gear actuator diagnostics failed.
STBD TROLL DIAG ALERT	Starboard troll actuator diagnostics failed.

Marine Controls Calibration

The following table lists all parameters available for Marine Controls Calibration.

Parameter	Description
ERIM VER	Current ROM version on the ERIM.
ERIM CHECKSUM	Checksum of the current ERIM ROM version.
CSIM1 VER	Current ROM version running on CSIM 1.
CSIM1 CHECKSUM	Checksum of the current CSIM 1 ROM version.
CSIM2 VER	Current ROM version running on CSIM 2.
CSIM2 CHECKSUM	Checksum of the current CSIM 2 ROM version.
CSIM3 VER	Current ROM version running on CSIM 3.
CSIM3 CHECKSUM	Checksum of the current CSIM 3 ROM version.
CSIM4 VER	Current ROM version running on CSIM 4.
CSIM4 CHECKSUM	Checksum of the current CSIM 4 ROM version.
CSIM5 VER	Current ROM version running on CSIM 5.
CSIM5 CHECKSUM	Checksum of the current CSIM 5 ROM version.
CSIM6 VER	Current ROM version running on CSIM 6.
CSIM6 CHECKSUM	Checksum of the current CSIM 6 ROM version.

Engine Calibration Parameters

The following table lists all Engine Calibration parameters.

Parameter	Description
PORT LOW IDLE RPM	Indicates the “Low Idle” RPM set point for the Port engine.
STBD LOW IDLE RPM	Indicates the “Low Idle” RPM set point for the Starboard engine.
PORT MAX RPM	Indicates the maximum RPM set point for the Port engine.
STBD MAX RPM	Indicates the maximum RPM set point for the Starboard engine.
PORT USER IDLE RPM	Indicates the “User Idle” RPM set point for the Port engine.
STBD USER IDLE RPM	Indicates the “User Idle” RPM set point for the Starboard engine.

Marine Gear Actuator Calibration

The following table lists all Marine Gear Actuator calibration parameters.

Parameter	Description
PT ACTU VER	Current ROM version running on the Port Gear Actuator.
PT ACTU CKSM	Checksum of the Port Gear Actuator ROM version.
SD ACTU VER	Current ROM version running on the Starboard Gear Actuator.
SD ACTU CKSM	Checksum of the Starboard Gear Actuator ROM version.

Troll Mode Calibration

The following table lists all Troll Mode calibration parameters.

Parameter	Description
TROLL SYSTEM	Indicates the presence of a trolling system on the boat.
PT TROLL VER	Current Port Troll ROM version running on the CSIM.
PT TROLL CKSM	Checksum of the Port Troll ROM version.
SD TROLL VER	Current Starboard Troll ROM version running on the CSIM.
SD TROLL CKSM	Checksum of the Starboard Troll ROM version.

Switch and Light Status Parameters

The following table lists all Switch and Light Status parameters. See “Switch/Light Status”, on page 201 for instructions on viewing these parameters using the Pro-Link® ..

Parameter	Description
ACTIVE BUTTON	Indicates whether the active CSIM’s station active button is being depressed.
STA ACTIVE LAMP	Indicates whether ERIM is commanding CSIM to illuminate the station active lamp.
SYNC BUTTON	Indicates whether the active CSIM’s sync button is being depressed.
SYNC LAMP	Indicates whether ERIM is commanding CSIM to illuminate the sync lamp.
LOW IDLE BUTTON	Indicates whether the active CSIM’s low idle button is being depressed.
LOW IDLE LAMP	Indicates whether ERIM is commanding CSIM to illuminate the low idle lamp.
TROLL BUTTON	Indicates whether the active CSIM’S troll button is being depressed.
TROLL LAMP	Indicates whether ERIM is commanding CSIM to illuminate the troll lamp.

Parameter	Description
OVERLOAD OVERIDE	Indicates whether the active CSIM's engine overload override button is being depressed. Only available for version 3.0 marine controls.
STA TRANSFER L/O	Indicates whether the active CSIM's station transfer lockout button is being depressed. Only available for version 3.0 marine controls.
LOW BATT RELAY	Indicates if the CSIM has deactivated the alarm relay allowing the low voltage alarm to turn on.
SYSTEM ALARM	Indicates if a command is being sent to flash the station active lamp for a code indication.
CSIM ACTIVE RLY	Indicates if the CSIM has energized the CSIM active relay. Only available for version 3.0 marine controls.

Series 638 Parameters

The following parameter listings are available for the Series 638 engine type.

Data List

The following table lists all data list parameters for the Series 638 engine.

Parameter	Units	Description
Water Temperature	F	Indicates water temperature
Inlet Air Temperature	F	Indicates inlet air temperature
Fuel Temperature	F	Indicates fuel temperature
Veh Spd Actual	km/h	Indicates the current vehicle speed actual value
Cruise Set Spd	km/h	Indicates the current cruise set speed
Low Idle Set Point	1/min	Indicates the low idle set point
Rotational Spd	1/min	Indicates the rotational speed as read by the flywheel sensor
Secondary Spd	1/min	Indicates the secondary speed as read by the #1 injector
Position Govnr	mV	Indicates actual fuel quantity
Req Fuel Qty	V	Indicates the requested fuel quantity
Accel Pedal	%	Indicates the value of the accelerator pedal sensor
Boost Prs	hPa	Indicates the boost pressure/intake manifold pressure
Atmospheric Prs	hPa	Indicates the atmospheric pressure
Battery Voltage	V	Indicates the battery voltage
Current Inj Qty	mg/Hub	Indicates the current injection quantity
Demand Qty Driver	mg/Hub	Indicates the Demand Quantity Driver
Max Inj Qty	mg/Hub	Indicates the maximum injection quantity.
Supply Accel Pedal	V	Indicates the supply-accelerator pedal sensor.

Parameter	Units	Description
Supply Boost Prs	V	Indicates the supply boost/intake manifold pressure.
ECM Voltage	V	Indicates the ECM voltage
Calculated PreGlow	ms	Indicates the calculated pre-glow period
Timing Adv Act	Deg	Indicates the timing advance actual value
Timing Adv Req	Deg	Indicates the timing advance requested value

Defect Codes

The following table lists all Defect Code parameters.

Defect Code	Description	Screen Display
P0100	Mass or volumes of airflow	Mass/Vol Airflow
P0105	Absolute pressure in manifold/	BarometricPrs
P0110	Temperature of intake air	TempIntake Air
P0115	Temperature of the engine coolant	TempEngCoolant
P0120	Throttle Position	ThrotPstn
P0180	Fuel Temperature Sensor	FuelTempSens
P0400	EGR	EGR
P0500	Vehicle speed sensor	VehSpeedSens
P0725	Engine speed sensor	EngSpeedSens
P1105	Atmospheric pressure sensor	AtmPressSens
P1110	Air temperature sensor	AirTempSens
P1120	Boost pressure/throttle position	BoostPr/ThrotPos
P1201	Needle movement sensor	NeedleMovSens
P1220	Fuel quantity actuator	FuelQuantAct
P1225	Control-sleeve sensor	ContrSleeveSens
P1230	Timing governing	TimingGvring
P1235	External fuel quantity access	ExtrnlFuelQuntAcc
P1240	Car Are Network (CAN)	CAN
P1400	I_EPW	I_EPW
P1410	Reversing valve 1/throttle position	REVV1
P1415	Reversing valve 2	REVV2
P1420	Register resonant charging 1	RegistResCharg1
P1425	Register resonant charging 2	RegistResCharg2
P1430	Reserved	–
P1435	reserved	–
P1515	Accel.pedal sensor	AccelPedalSens

Defect Code	Description	Screen Display
P1520	Vehicle speed governor analog Controls	VehSpeedGAC
P1600	Battery voltage	BatteryVolt
P1605	Terminal 15	Terminal 15
P1610	Regulator	Regulator
P1615	Microcontroller	Microcontroller
P1620	U_REF (2.5V)	U_REF
P1625	Main relay	MainRelay
P1630	Solenoid valve controller	SolndValveContr
P1635	Glow relay controller	GlowRelayContr
P1640	Glow aux. Relay	GlowAuxRelay
P1645	Glow display	GlowDisplay
P1650	Diagnostic lamp	DiagLamp
P1655	AC control output 0	ACcntrloutput
P1660	Redundant emer. stop	RdndntEmerStop
P1665	Cruise control status indicator lamp	CrseContrStatLmp
P1670	Smart Relay	SmartRelay
P1675	Smart Relay	SmartRelay
P1680	EEPROM plausibility	EEPROM Plaus.
P1685	Vehicle theft alarm	VehTheftAlarm
P1690	Fan control	FanControl
P1695	AC compressor pressure	ACComprsPrs
P1703	Brake Signal	BrakeSignal
P1725	Inductive aux. Speed sensor	IndSpeedSens
P1730	Transmission control 1	TransControl1
P1735	Transmission control 2	TransControl2
P1740	Clutch signal	ClutchSignal

I/O Status List Parameters

The following table lists all I/O Status List parameters.

Parameter	Description
Timing ADV	Indicates the timing Advance Actuator,% activated
AGR/EGR	Indicates the AGR/EGR,% activated
A/Trans Relay	Indicates the ON/OFF state of the A/Transmission Relay
Glow Plug Relay	Indicates the ON/OFF state of the Glow Plug Relay
Glow Time Phases **16** - Pre Glow **48** - Careless time (Glow Plug on, Glow Plug lamp off) **80** - Not Pre Glow **112** - Glow during crank **176** - After Glow **255** - No Glow	Indicates the value of Glow Time Phases
A/C Control	Indicates the ON/OFF state of the A/C Control
Glow Plug Aux Relay	Indicates the ON/OFF state of the Glow Plug Aux Relay
Glow Plug Display	Indicates the ON/OFF state of the Glow Plug Display
Elect Shut Off	Indicates the ON/OFF state of the Electric Shut-Off
Diag Lamp	Indicates the ON/OFF state of the Diagnostic Lamp
Aux Output #1	Indicates the ON/OFF state of the Auxiliary
Cruise Lamp	Indicates the ON/OFF state of the Cruise Lamp
Fan Control #1	Indicates the ON/OFF state of the Fan Control #1
Aux Output #2	Indicates the ON/OFF state of the Auxiliary Output #2

Appendix B

Warranty & Service

This appendix provides warranty and service information.

Exclusive Warranty

Detroit Diesel Application is warranted for a period of one (1) year from the date of purchase to be free of defects in materials and workmanship and to be merchantable and fit for its intended purpose.

All warranties are null and void if, after shipment, the product is altered or modified for any reason by anyone other than NEXIQ Technologies, or is mis-used or abused. No warranty, express or implied, lasts beyond one (1) year from the date of purchase. There are no oral warranties of any kind.

Exclusive Remedy

The sole remedy for breach of warranty or any other obligation (including and arising out of statute or regulation, strict liability, negligence or the law of torts) is repair or replacement of defective parts by NEXIQ Technologies or, at the option of NEXIQ Technologies, refund of the purchase price. This is the exclusive remedy. ALL LIABILITY OF NEXIQ Technologies FOR CONSEQUENTIAL OR OTHER DAMAGES IS EXCLUDED AND DISCLAIMED. In no event shall the Buyer be entitled to damages for lost profits, down time, attorney fees, or business, economic, or commercial loss or damage of any kind. Action on any claim must be commenced within one (1) year after the cause of action has accrued.

Return Materials Authorization (RMA)

Warranty service is obtained by returning the product (shipping charges prepaid), along with proof of price and date of purchase to the following address:

NEXIQ/NNT Technologies
2329 East Walton Blvd.
Auburn Hills, MI 48326
Attention: Product Service/Repair Department

During the warranty period, NEXIQ Technologies will, at its option, repair or replace the product which proves to be defective or, refund the purchase price.

Customers MUST obtain a RMA number before repair items are sent in for service. This is for warranty and non-warranty repairs as well as rework services.

To obtain a RMA number, please call **(800) 639-6774** (**Local/International: 248-232-6610**) and then enter **option 3**. This option transfers your call to the Product Service department where either the Production Associate or a Technician will troubleshoot the issues the customer is experiencing. If there is an issue that cannot be handled during the phone conversation, the customer will be given a RMA number to return the unit. You will be asked by the NEXIQ/NNT associate for your company name, address, phone number and main contact source. Your issue will be documented under the RMA number given and linked to your company's information.

NOTE:

It is required that the RMA number be written on the outside of the box in large, bold print.

Return the unit(s) to the NEXIQ/NNT Location at:

NEXIQ/NNT Technologies
2329 East Walton Blvd.
Auburn Hills, MI 48326
Attention: Product Service/Repair Department

In addition, we request that you include a business card or your name and phone number INSIDE the box so we can contact you if there are any repair costs. Any package sent in for the Product Service department that does not have a RMA number on the outside of the box WILL BE REFUSED and returned to the sender, unopened.

If necessary, payment information will be obtained for NEXIQ/NNT to cover the cost of services while on the phone and a copy should be returned with the items coming in for repair/rework. Payment needs to include shipping and handling charges. (This is for non-warranty and rework charges).

The customer is responsible for shipping and handling charges on non-warranty repairs and non-warranty rework. With all warranty repairs, NEXIQ/NNT is responsible for the shipping costs of the return to customer.

Return of Goods Policy

Thank you for your NEXIQ/NNT purchase. Please inspect your order for accuracy and for damage during the shipping process. If you did not receive your entire order or your order has not arrived in excellent condition, please contact the Customer Service Department at
(800) 639-6774 (**Local/International: 248-232-6610**)**, option 1** within 30 working days of receipt. If NEXIQ/NNT receives the request for return AFTER 30 DAYS, a 15% restocking fee will be issued. Upon inspection and approval of the returned products, credit will be issued. Any damaged or missing parts will be deducted from the final credit total. NO RETURNS ARE ACCEPTED WITHOUT AN RGA (RETURN GOODS AUTHORIZATION) NUMBER. Customers are responsible for return shipping charges.

Return Goods Authorization (RGA) Procedure

RGA numbers are issued for any item that needs to be returned due to an incorrect shipment or credit adjustment.

Customers MUST obtain a RGA number BEFORE returned items can be returned to NEXIQ/NNT. Any package sent into NEXIQ/NNT that does not have a RGA number on the outside of the box WILL be refused and returned to the sender, unopened.

To obtain a RGA number, please call **(800) 639-6774** (**Local/International: 248-232-6610**) and then enter **option 1**. This option transfers your call to the Customer Service department. Please be prepared to provide the following information:

- Company Name and Contact Name
- Company Address
- Phone Number
- Where the unit was originally purchased
- Purchase order number
- Packing Slip Number

NOTE:

NEXIQ/NNT will accept the return of any product, HOWEVER, if the unit is damaged or items are missing, deductions will be made to the final credit amount. ANY ITEM THAT IS OBSOLETE OR DETERMINED TO HAVE NO VALUE WILL NOT RECEIVE CREDIT.

Once authorization for the return is given, it is required to have the RGA number put on the outside of the box in big bold letters and numbers.

Return the unit(s) to NEXIQ/NNT Location at:

NEXIQ/NNT Technologies
2329 East Walton
Auburn Hills, MI 48326
Attention: Returns/Quality Control Department

NOTE:

The customer is responsible for return shipping and handling to NEXIQ/NNT.

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