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Other Languages:	NONE	**Author:**	Matthew Carrigan
Viewed:	344		

Title: Vehicle Programming Information Associated with Engine: N9/N10 (2014-2017)

Applies To: N9/N10 (2014-2017)

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

01/29/2026 - Added IK2600300 N9/N10 & N13 Baud Rate Information Associated With Vehicle Programming
01/02/2026 - Added NavKal error 95 info
09/19/2025 - Added NavKal Error 8 to Baud Rate section
07/09/2025 - Fixed broken links
06/16/2025 - Added VPRC Link

DESCRIPTION

This document aims to enable technicians to:

1. Accurately identify N-series medium duty engine control systems.
2. Understand the programming intricacies related to these systems.
3. Autonomously execute programming tasks without needing technical support.

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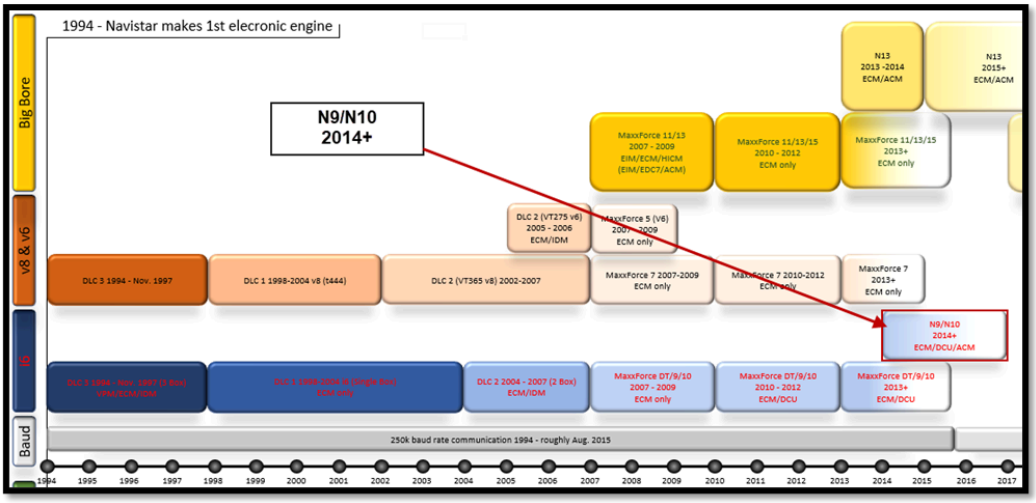
Timeline



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Software/Hardware Integrations

- Navistar Engine Diagnostics (NED): Supported. Used for diagnostics & parameter changes.
- NavKal: Supported. Used for flashing the entire ECM.
- HeRo: Supported.
- DLB: Supported.
- 360 Write Up: Supported.
- DLC Fleet Tool: Supported.
- The programming station works with this engine type.

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How N9/N10 Modules Work

Baud Rate: From the beginning of N9/N10 engines (2014) until roughly August 2015 build dates, N9/N10 engines communicated at a 250k baud rate. In August 2015, International introduced N9/N10 powered trucks that communicated at a 500k baud rate. You can tell which baud rate you vehicle communicates at by looking at your 9-pin data link connector. A black connecter indicates 250k baud rate. A green data link connector indicates 500k baud rate. The same N9/N10 ECM can communicate at either 250k or 500k - just not both baud rates at the same time. The only way to switch an N9/N10 ECM from a 250k baud rate communication to 500k communicaation (or visa versa) is to isolate the ECM as the only module on the data link (the programming station works well for this), then program with NavKal as a blank module to a VIN that has the desried baud rate

ECM: Engine Control Module. The ECM holds both the caibration and the parameters. The N9/N10 ECM's are dealer programmable usign NavKal. Both the calibration and paramter can be changed/programmed
DCU: Doser Control Unit. The DCU contains a calibration and is dealer programmable using NavKal.

- **250k DCU's** are dealer programmable through NavKal
- **500k DCU's** are not programmable. Do **NOT** Attempt to Reprogram Them
- There are different DCU part numbers for 250k DCU's vs 500k DCU's. See "N9/N10 Module Parts Information" section below for part numbers.

ACM: Aftertreament Control Module. The ACM contains a calibration and parameters and is dealer programmable through NavKal. The ECM must be present on the data link in order to program the ACM. There are different ACM part numbers. See "N9/N10 Module Parts Information" section below for part numbers.
Functional info: This type of ECM/DCU/ACM communicates on the 1939 (CAN) data link. Only the 1939 data link is used for communicating with NED. The 1939 data link is used for the entire NavKal process

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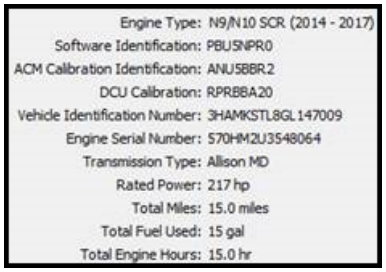
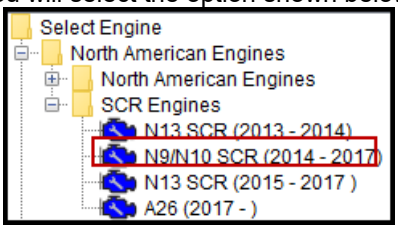
Connecting To A N9/N10 Engine



When NED connects to a N9/N10, you should see data similar to the screenshot above (further description is below)

Engine Type	N9/N10 SCR (2014-2017)
Software Identification	Will show an 8 digit ECM calibration name
ACM Calibration Identification	Will show an 8 digit ACM calibration name
DCU Calibration	Will show an 8 digit DCU calibration
Vehicle Identification Number	Will show the full 17 digit VIN
Engine Serial Number	Will shows the full 14 digit ESN
Transmission Type	Should correctly reflect the installed transmission (unless the vehicle has an Eaton automated manual transmission - then it is normal for NED to show an Allison transmission)
Rated Power	Should correctly show the rated horsepower
Total Miles	Should show correct total vehicle distance NavKal shows total miles from the ECM parameter for total miles NED shows total miles from the instrument cluster
Total Fuel Used	Should show correct total fuel used
Total Engine Hours (not shown in screenshot above)	Should show correct total engine hours

When connecting with NED or NavKal to an N9/N10 engine, if you have to manually select the engine type, you will select the option shown below.



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Source Addresses

- The ECM broadcasts source address 0 (zero).
- The DCU broadcasts source address 61 (sixty one).
- The ACM broadcasts source address 85 (eighty five).
- The ECM, DCU, and ACM source addresses are broadcast only on the 1939 data link.
- These source addresses can be seen in the sniffer in either NED or NavKal.
- If you are using a Nexiq Communication cable, you could check the Nexiq Device Tester to see if source addresses 0,61, & 85 shows on the 1939 data link.

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N9/N10 Module Parts Information

- If you need engine identification information, please see IK2600242.
- SID numbers are important to consider when replacing an i6 ECM of this era. See TR2600003 for more information on ECM SID numbers.
- Look up ECM part number by VIN. The correct ECM should have "SID914" on label. It is very common to use an ECM with the wrong SID number for this specific engine type - however, even if it programs, it will lose some parameters (ESN, ESRC...) after the programming is complete
- There are different ACM part numbers depending on the baud rate (250k vs 500k)

Baud Rate	ACM Part Number	DCU Part Number
250k	3988097c2	7094050c1
500k	4063287c1	7098582c1

- Both ACM part numbers can be programmed to either 250k or 500k baud rate
- The difference in ACM part numbers indicates the baud rate the ACM will be programmed to when you get it from the Parts dept.

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Switching Baud Rates:

Switching the baud rate of N9/N10 modules is a larger topic that required its own article. Please see IK2600300 for comprehensive baud rate information associated with N9/N10 engines.

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N9/N10 Horsepower Quotes

Horsepower increases are supported for N9/N10 engines. Follow the process outlined in IK2600069 to submit a case file for a horsepower quote. If the engine you're considering is already rated at the highest possible rating, then no increases are available. These are a few different ratings that are highest in their class. See the chart below for those highest ratings. There is no need to submit a case requesting a horsepower quote for an engine that is already at one of these ratings - as there are no increases available.

Baud Rate	Rating	Engine	Torque Range	Horsepower	Torque
250k		N9	Standard	315	950
250k		N9	High	330	950
250k		N10	Standard	310	1050
250k		N10	High	350	1150
500k	12NWD	N9	Standard	315	950
500k	12NWG	N9	High	330	950
500k	12NWE	N10	Standard	310	1050
500k	12NWJ	N10	High	350	1150

International does not support changes from standard torque ratings (and visa versa). So, if you have an N9 engine with rating 12NWD, it is not possible to increase to a higher rating. If you submit a case file with this type of request, it will receive the responce that there is no increases available.

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N9/N10 Engine Swaps

See IK2600047 for information about engine swaps. Programming changes may be needed in order to accommodate an engine swap. There are some instances where International CANNOT support and engine swap. If you have any doubts about whether your engine swap will be supported by International, please start a case file with the Vehicle Programming group and we will let you know if International will support the swap. It is advisable to do this BEFORE swapping the engine. The potential negative outcome would be that you install and engine that International cannot support – then we would not be able to provide you with the correct programming.

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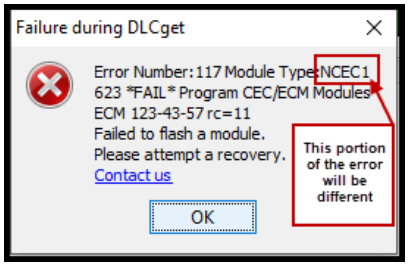
Common Programming Issues With N9/N10 Systems

- NavKal Error 117 Module Type: ...623..



    - This error can be caused by communication from other modules interfering with NavKal's communication on the data link
        - Fix - either pull transmission/ABS fuses, or use programming station.
- NavKal **Error 8** indicates that NavKal expected to see a module on the data link, but couldn't detect it. For N9/N10 that can be caused by a replacement module having a different baud rate than the rest of the vehicle.
    - Fix - IK2600252 provides troubleshooting steps and direction.
- NavKal **Error 84 or 89** indicates that you are using an ECM that has a wrong SID number
    - Possible Symptom: ECM loses VIN or ESN upon key cycle after NavKal programming is completed.
        - Fix - Use ECM that says "SID914" on the label. See TR2600003 for more information on the ECM SID numbers.
- NavKal **Error 95** indicates that one of the NavKal calibration files downloaded onto your computer is corrupt.

    - Fix - See IK2600291 for detailed instructions.
- NavKal newly installed module not detected. It is possible that the newly installed module has a different baud rate than the old module
    - For an explanation of how N9/N10 baud rate works, see section titled "How N9/N10 modules work" above.
    - For information on module part numbers by baud rate see section titled "N9/N10 Modules Parts Information" above.
    - For information on switching the module's baud rate see the section titled "Switching Baud Rates" above.
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Other Resources

Master Service Information Site

RC2600001 - Vehicle Programming Resource Center

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