



TECH TIP

DX3 NOX SENSOR MONITOR

GROUP: 0-GENERAL

TECH TIP NO: TT-22-025

DATE: 11-22-22

SUBJECT VEHICLES: 11MY-21MY Conventional Trucks equipped with a J08 engine or Cab Over Engine (COE) equipped with a J05 engine.

OVERVIEW:

The purpose of this procedure is to provide instructions in how to properly record NOx sensors using DX3.

Note: This technical tip is provided as technical information and is not authorization for a warrantable repair.

REPAIR PROCEDURE:

Note: Be sure to change Unit Settings in DX3. Click **Settings** (gear in the upper right) > **Unit Setting** and then mirror the settings below, click **OK**. Log out of DX3, then log back in to hold new settings for future DX3 connections and data monitoring.

[B1014]

Unit Setting

Distance	Mile(mile)	▼
Speed	Mile per hour(mph)	▼
Acceleration	Mph/sec(mph/sec)	▼
Capacity	US Gallon(gal)	▼
Fuel consumption rate	Mile per US Gallon(mpg)	▼
Fuel consumption rat...	Mileage per Liter(km/L)	▼
Temperature	Fahrenheit(° F)	▼
Horsepower	Horsepower(hp)	▼
Torque	Foot pounds (lb-ft)	▼
Pressure	Pound per Square Inch(PSI)	▼
Pressure (Mp)	Pound per Square Inch(PSI)	▼

OK Cancel

Note: Exhaust temperatures **MUST** be at ambient temperature prior to performing this test.

1. Connect DX3 and allow **Read Out** to complete. Click **Customization**, in System select **Engine CAN**, and scroll to locate **DPF Soot Amount Piling Up**. Set the soot level to **3.5g/L** for a manual regen, and click **Write**, follow DX3 to complete writing of soot level

Note: Key must be ON with the Engine OFF to write or change any value. Ignition must then be turned off for 60 seconds to finalize writing of value, and turned back on.

Customization

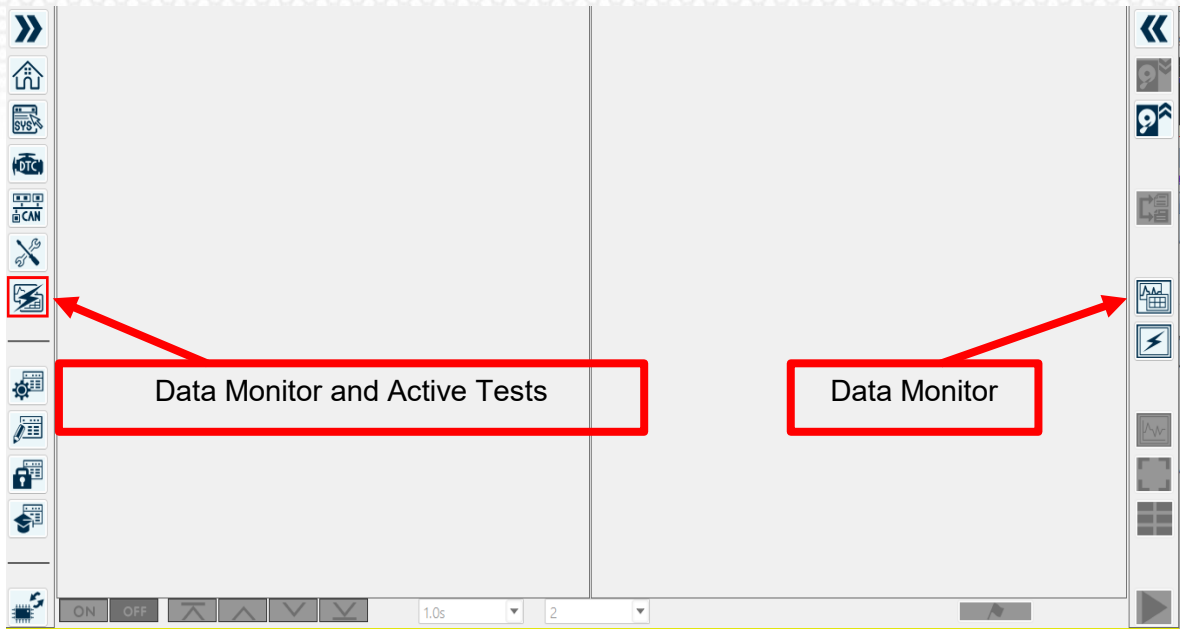
System: 01 Engine Serial(K line)

No.	Items	Initial value	Set value	Unit	Write to ECU
439	Idle Shutdown Active Minimum Coolant Temperature	-40	-40	°F	
440	Idle Shutdown Active Minimum Ambient Temperature	-40	-40		
449	Setting of economy running intensity	Low	Low		
451	Setting start idle up mode changeover	Always	Always		
453	Setting of actuation time for hill start gear change assi...	0.0	0.0	Seconds	
456	Long idling control RPM	0	0	rpm	
474	Customized Backup (data 2 byte 6 digits) 1	0	0		
534	DPF Soot Amount Piling Up	0.000	3.5	g/L	
543	PM deposit volume 1 (A09C)	0.000	0.000	g/L	
544	PM deposit volume 2	0.000	0.000	g/L	
580	Total idle fuel injection	0.0	0.0	gal	
581	Trip idle injection quantity	0.0	0.0	gal	
582	Total fuel injection quantity	0.0	0.0	gal	

Signal description

Write Customization generation is desired.

2. Select “**Data Monitor and Active Tests**” then select “**Data Monitor**”.

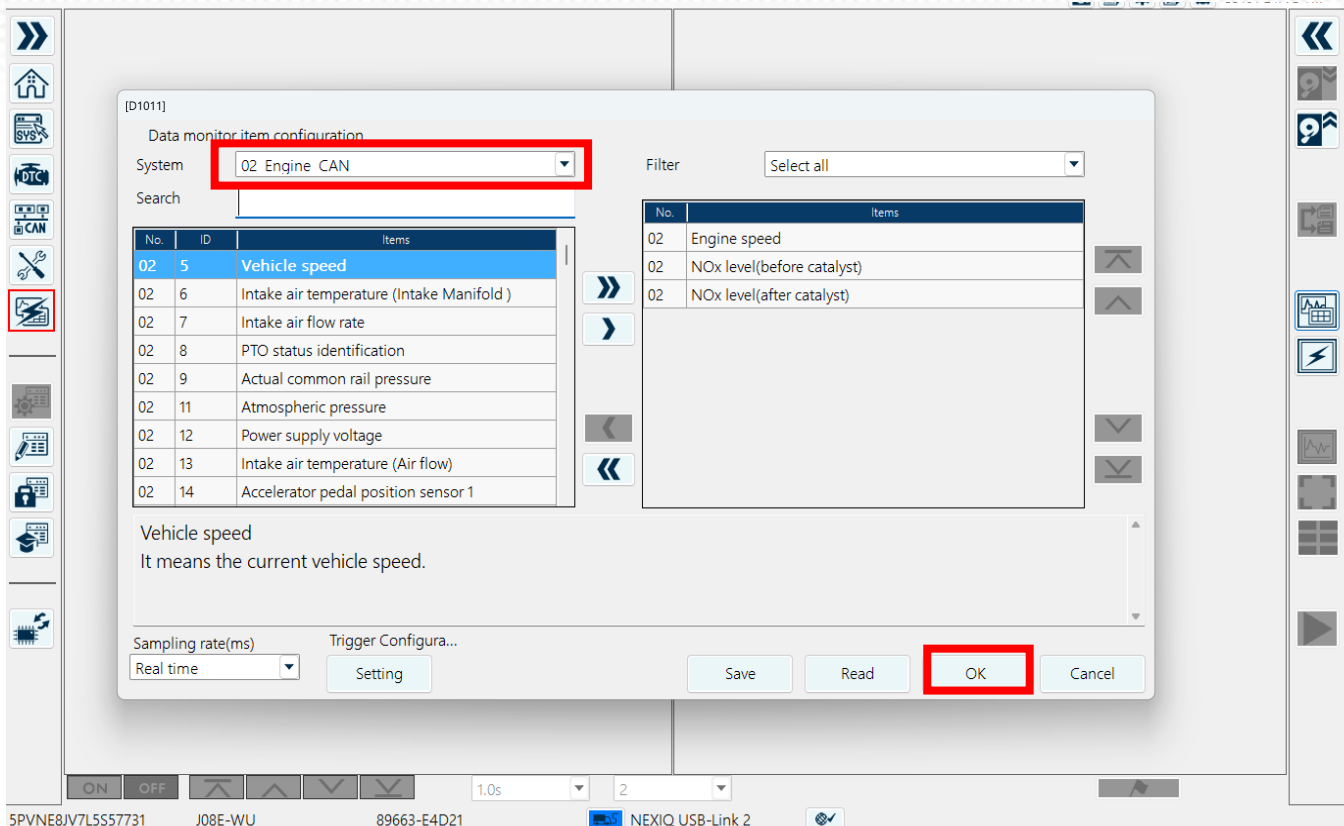


3. In the Data Monitor Item Configuration menu, select **Engine CAN** and the following parameters, then click **OK**.

Engine Speed

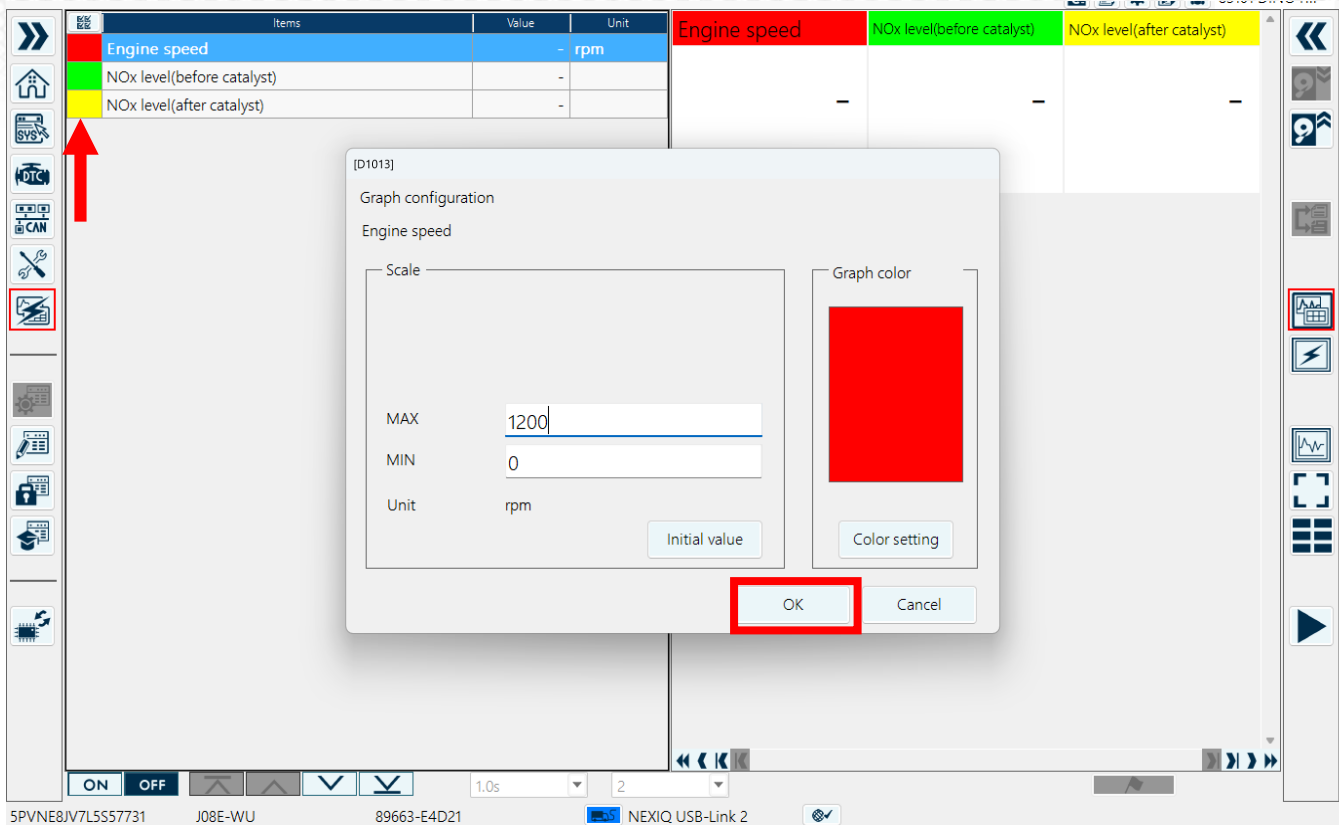
NOx Level (Before Catalyst)

NOx Level (After Catalyst)



IMPORTANT – MIN/MAX Values must be adjusted prior to performing this recording.

4. Adjust MIN/MAX Values. Click the colored box next to each parameter one at a time to set values as shown below, click **OK** to accept each value.



Engine Speed Max 1200 / Min 0

NOx Level (Before Catalyst) Max 3 / MIN -1

NOx Level (After Catalyst) Max 3 / MIN -1

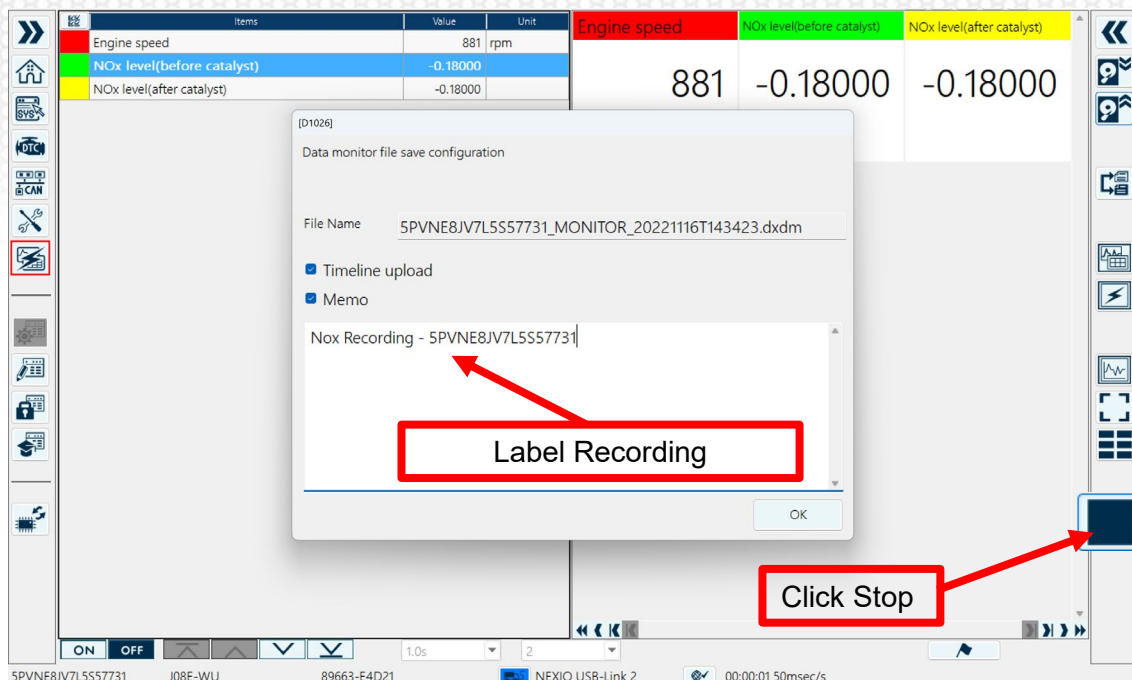
5. Start the truck, start the DX recording and then press the manual regen switch on the dash to start manual regen. Record until manual regen has completed.

The screenshot displays a diagnostic software interface. On the left, a table lists items to be recorded:

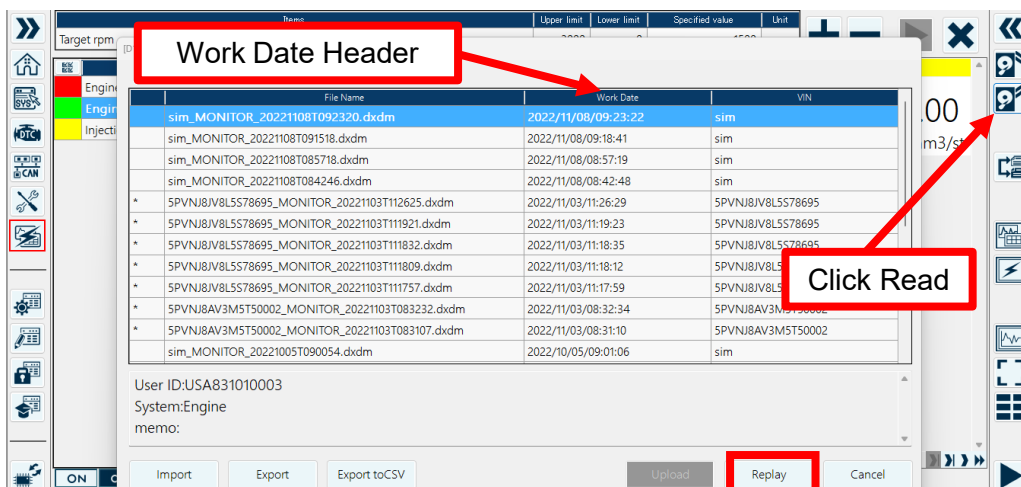
Items	Value	Unit
Engine speed	-	rpm
NOx level(before catalyst)	-	-
NOx level(after catalyst)	-	-

A red box highlights the 'Start Recording, record until regen completes.' instruction. A red arrow points from this box to a play button icon on the right side of the interface. The right side of the interface shows three columns for data recording: 'Engine speed' (red header), 'NOx level(before catalyst)' (green header), and 'NOx level(after catalyst)' (yellow header). The values in these columns are currently dashes. The bottom status bar shows '5PVNE8JV7L5S57731', 'J08E-WU', '89663-E4D21', and 'NEXIQ USB-Link 2'.

6. Click the **Stop** in the lower right of DX3 to stop the recording. In the save box, **label the recording**, be sure to include the test name and VIN or TechAssist Case number and click **OK**.



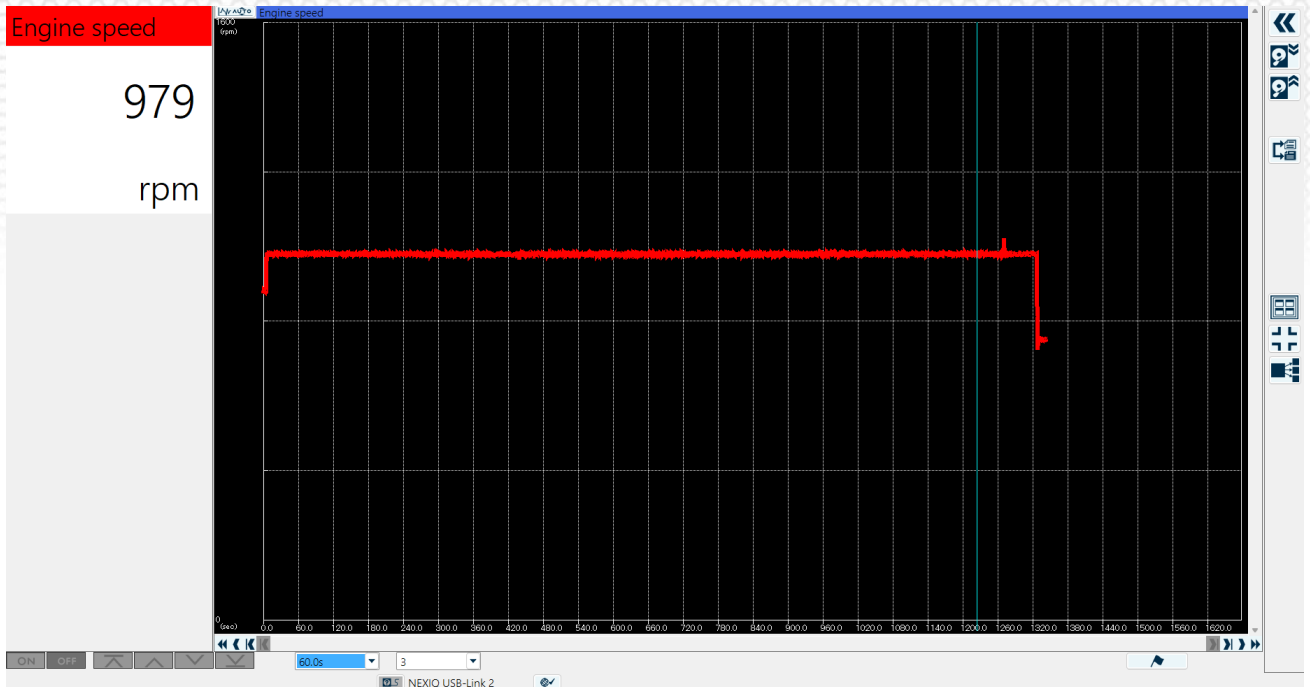
7. Click **Read**, click on the **Work Date** header a couple times to sort recordings by work date, highlight the recording and click **Replay**.



8. Graph data to review. Graph both NOx Sensors in the same graph.



9. Graph engine RPMs separately.



Note: Please review our DX3 training course as needed for any graphing questions.

Note: If you are not able to determine judgment, please follow **TechTip #22-019 Sending DX3 Files to TechAssist**. Create a TechAssist case outlining the customers concern, diagnosis performed and related DTC's, then attach file(s) for review.