



TECH TIP

DX3 INJECTION QUANTITY TEST

GROUP: 22-FUEL SYSTEM

TECH TIP NO: TT-22-022

DATE: 11-22-2022

SUBJECT VEHICLES: 11MY-21MY Conventional Trucks equipped with a J08 engine or 13MY-20MY Cab Over Engine (COE) trucks equipped with a J05 engine.

OVERVIEW:

The purpose of this procedure is to provide instructions in performing an injection quantity test on 2011 and newer Conventional or COE series trucks with 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

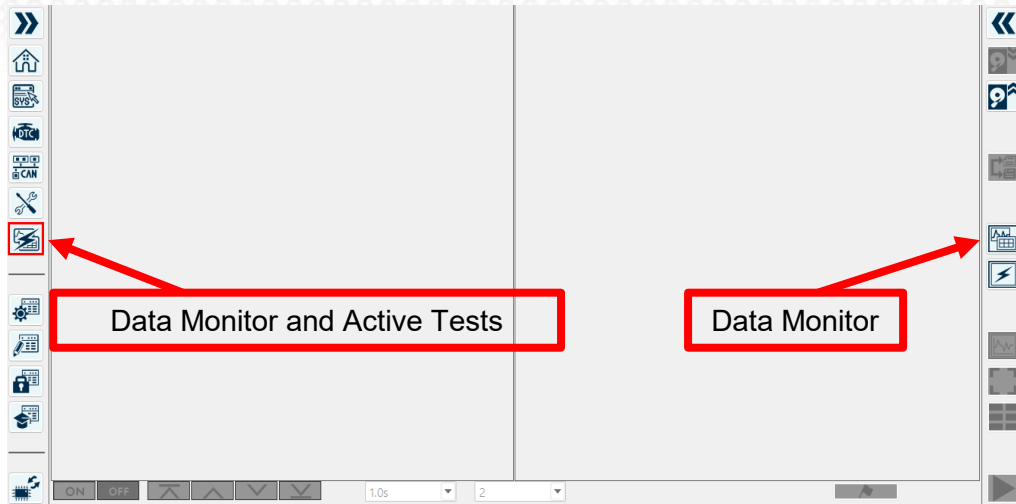
Distance	Mile(mile)	▼
Speed	Mile per hour(mph)	▼
Acceleration	Mph/sec(mph/sec)	▼
Capacity	US Gallon(gal)	▼
Fuel consumption rate	Mile per US Gallon(mpg)	▼
Fuel consumption rat...	Mileage per Liter(km/L)	▼
Temperature	Fahrenheit(° F)	▼
Horsepower	Horsepower(hp)	▼
Torque	Foot pounds (lb-ft)	▼
Pressure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

OK Cancel

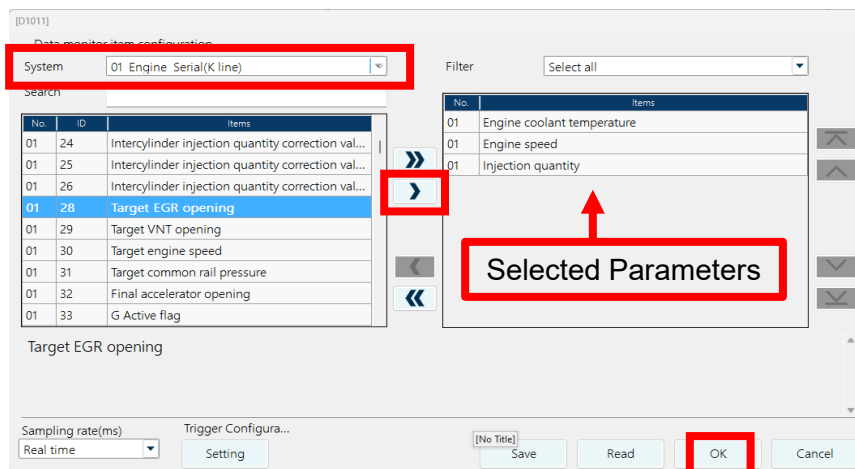


1. Bring the engine to full operating temperature of 175°F to 185°F (79-85 °C) by way of a short road test. **Failure to do so will affect injection quantity judgment.**

2. Connect DX3 and select **“Data Monitor and Active Tests”** then select **“Data Monitor”**.



3. In the Data Monitor Item Configuration menu, select **Engine CAN** for the System and then the following parameters; **Engine Coolant Temperature, Engine Speed and Injection Quantity Monitor**. Move each parameter to the box on the right using the **arrow**, then click **OK**.



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.

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

Engine Coolant Temperature **Max 210F* / Min 64***

Engine Speed **Max 1512 rpm / Min 1488 rpms**

Injection Quantity **Max 20 / Min 0**

The screenshot shows a diagnostic tool interface with a table of parameters and a graph configuration dialog. The table has columns for Items, Value, and Unit. The parameters listed are Engine coolant temperature (°F), Engine speed (rpm), and Injection quantity (mm3/st). The dialog box is titled 'Graph configuration' and is for 'Engine coolant temperature'. It has two sections: 'Scale' and 'Graph color'. The 'Scale' section has input fields for MAX (210), MIN (64), and Unit (°F). The 'Graph color' section has a red color swatch. A red box highlights the text 'Type in set values provided above, click OK' in the Scale section. The OK button is also highlighted with a red box. A red arrow points to the 'Engine coolant temperature' row in the table.

Items	Value	Unit
Engine coolant temperature	-	°F
Engine speed	-	rpm
Injection quantity	-	mm3/st

Graph configuration
Engine coolant temperature

Scale

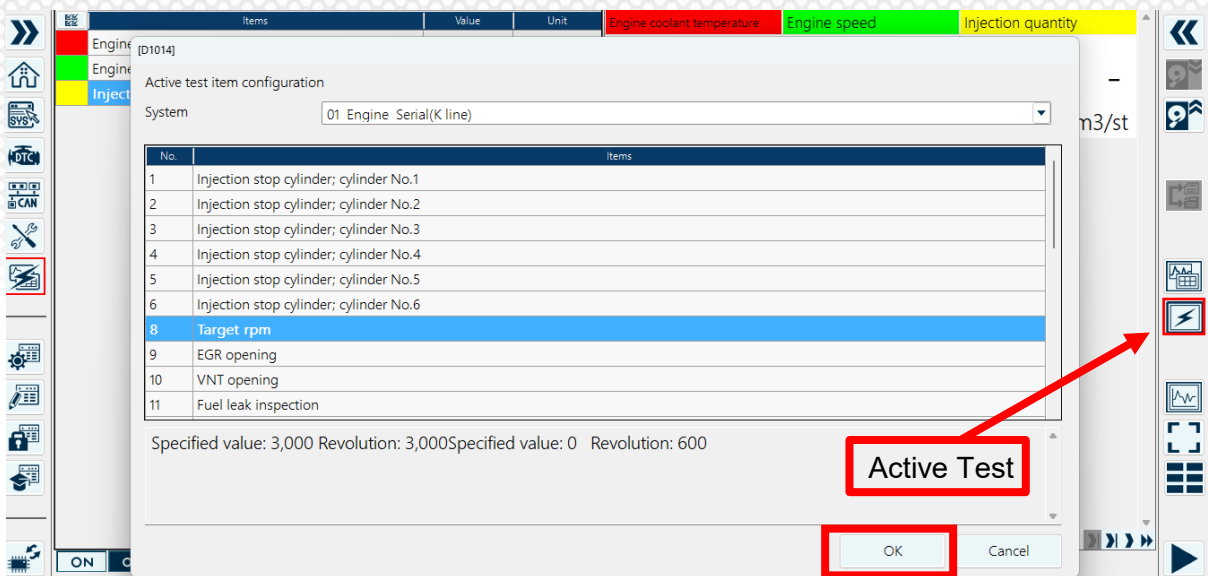
MAX 210
MIN 64
Unit °F

Graph color

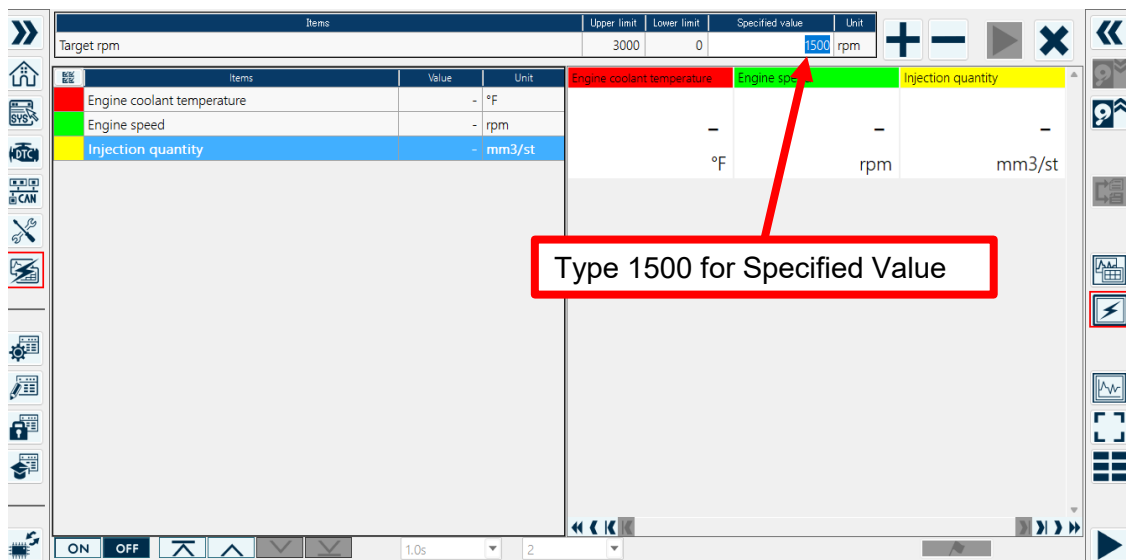
Initial value Color setting

OK Cancel

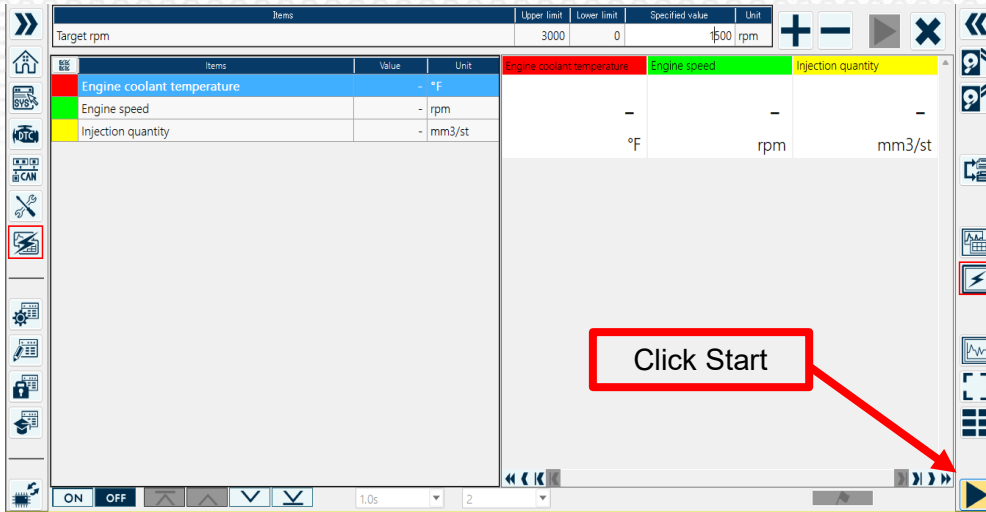
5. Once parameters are selected and set, click the **Active Test** icon and then select **Target RPM**, Click **OK**.



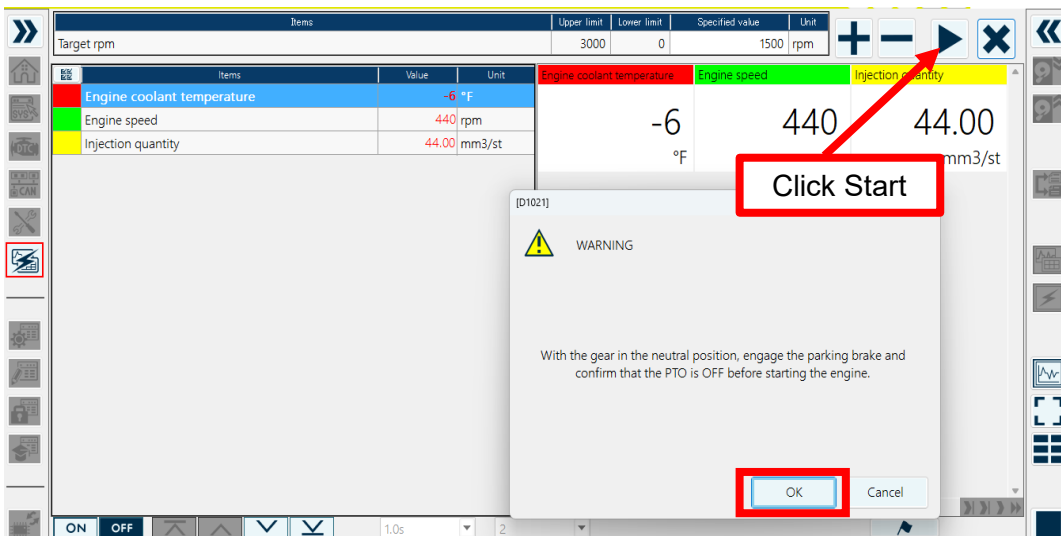
6. Set Target RPM to 1500 RPM. Click in the box and type **1500**.



7. Again, make sure the engine is at **Normal Operating Temperature**. Start the engine, **turn off ALL Accessories** (A/C, Lights, Wipers, Exhaust brake, etc.) and start recording, click **Start**, allow to idle for **1 minute** while recording.



8. After allowing to idle for one (1) minute, Click **Start** on **Target RPM**, review and follow the Warning, then click **OK**.



9. Record for nine (9) minutes at 1500 RPMs, then on **Target RPM**, click **Stop**, allowing the truck to return to idle. **Continue recording for 1 minute at idle.**

Items	Upper limit	Lower limit	Specified value	Unit				
Target rpm	3000	0	1500	rpm	+	-	■	×

Click Stop

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

	Upper limit	Lower limit	Specified value	Unit				
	3000	0	1500	rpm	+	-	▶	×

[D1026]
Data monitor file save configuration

File Name

Timeline upload
 Memo

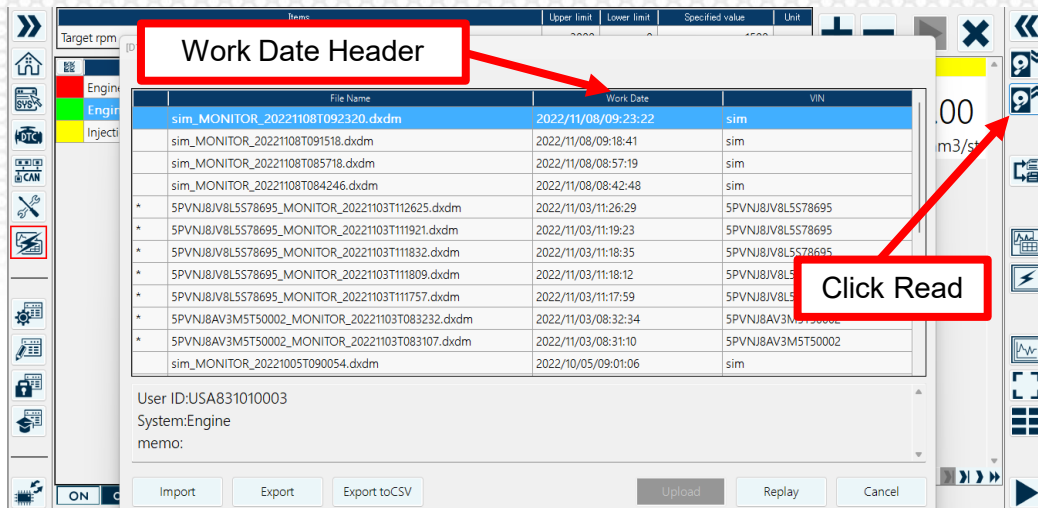
OK

Label Recording

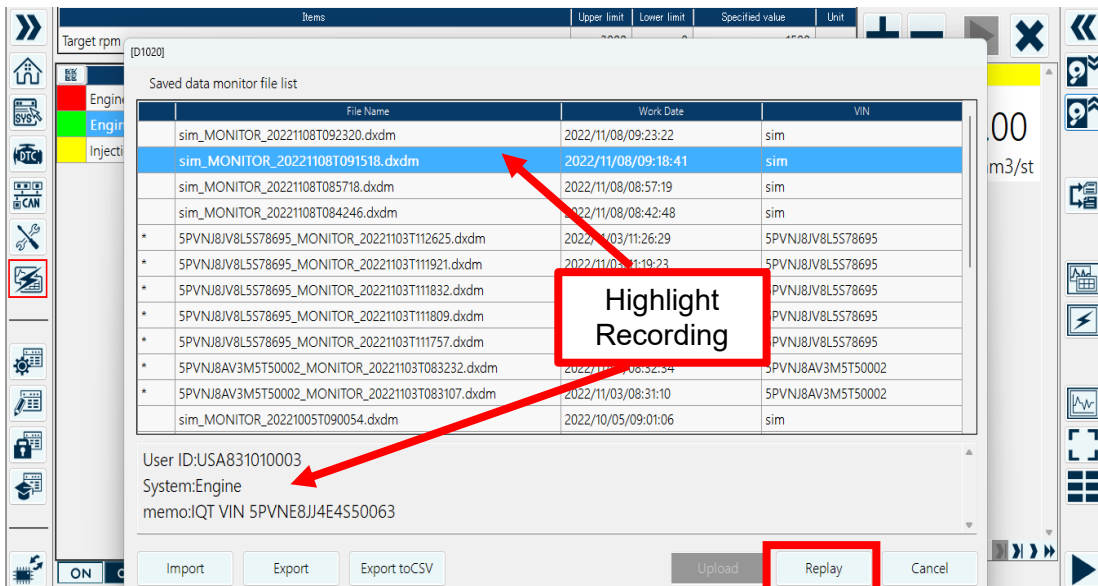
Click Stop



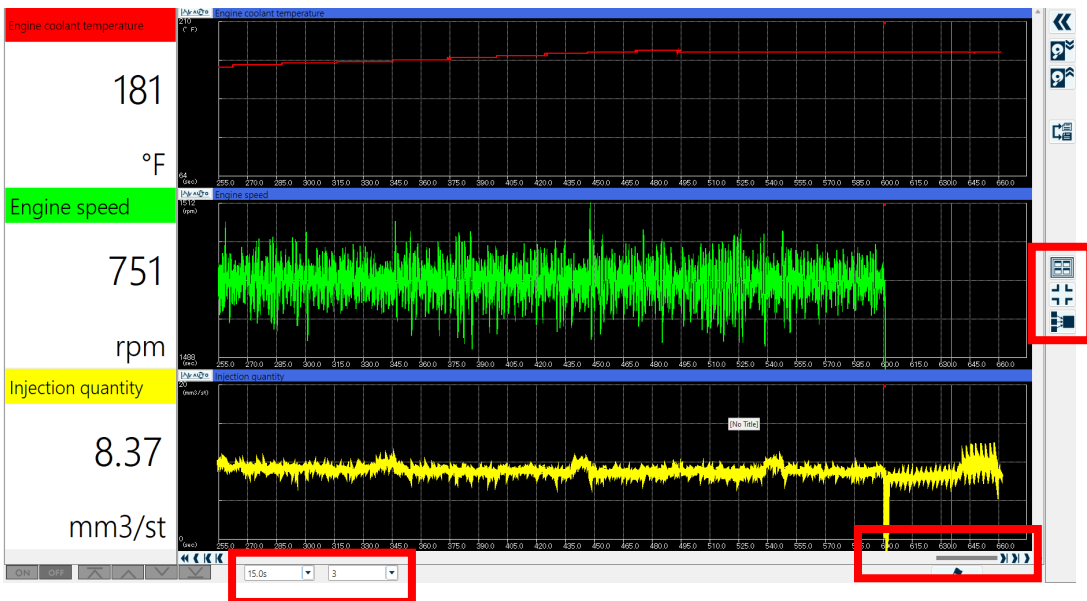
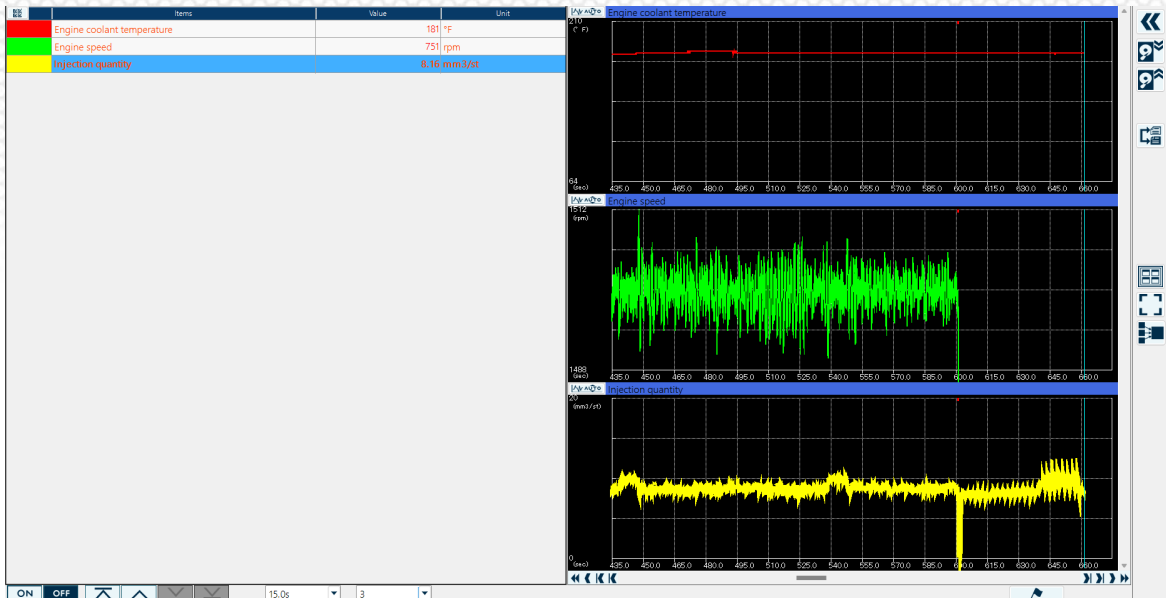
11. Click **Read**, click on the **Work Date** header a couple times to sort recordings by work date.



12. Locate recording, highlight it, and click **Replay**.



13. Select the number of parameters (3), the graph style, use the slide bar and time setting to read the recorded data.



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 customer's concern, diagnosis performed and related DTC's, then attach file(s) for review.

