Emission monitors are internal self-tests which the power control module (PCM) performs in order to verify specific emissions systems, such as the EGR, oxygen sensors, and catalyst are functioning properly. If any one monitor is incomplete your truck will not pass the smog test. In order to make the monitors ready for the smog check you'll need to drive your Dodge Ram Diesel truck through what is known as a Drive Cycle.

Usually driving 200-300 miles over the course of a few days and in both city and highway traffic conditions is enough to get the drive cycle complete. Due to individual vehicle owner driving patterns however, sometimes the criteria required to get a particular monitor to initiate and/or become ready is not met. In such instances, it is required that a specific drive cycle pattern which is designed for the Dodge Ram Diesel truck be followed. We outline the pattern below.

How to Complete a Dodge Ram Diesel Truck Drive Cycle

Performing the driving pattern below will allow your Dodge Ram Diesel truck to make ready all I/M emission monitors in preparation for a smog inspection. Follow the drive cycle carefully. Take extra caution when performing the drive cycle on public roadways. If you feel you will be unable to follow the drive cycle safely, please seek assistance from an smog check repair station or Dodge dealership. They may be able to perform the drive cycle utilizing a dynamometer, and specialized scan tools. Perform the drive cycle at your own risk. Prior to beginning the drive cycle ensure your vehicle has between 15% to 85% fuel in the gas tank, and that the engine is cold. It is best to start the driving cycle in the morning (after a cold soak).

The information below will allow you to complete each emission monitor individually.

A. Misfire Monitor

Ensure the following conditions are met before running the monitor:

• Fuel level above 1/4 tank.
• Battery condition fair or above.
• Idle-up or PTO not engaged (if equipped).
• Final Aftertreatment Operating Mode should be normal.
• Engine must be warmed up, i.e. coolant temp over 140ºF.

To run the monitor:

Start the engine and allow it to idle for at least two (2) minutes. Your truck must not be moving. Do not depress the accelerator pedal. This completes the Misfire Monitor drive cycle. - END

B. Fuel System Monitor

The following conditions must be met:

• Fuel level above 1/4 tank.
• Battery condition fair or above, i.e. 11v-14v.
• Idle-up or PTO not engaged (if equipped).
• Final Aftertreatment Operating Mode should be at Normal.
• Engine must be warmed up, i.e. coolant temp over 140ºF.
• Ensure grid heater is off.

To run the monitor:

Let your truck idle for a minimum of two (2) minutes with the above conditions met. Drive the truck at highway speeds. Perform a "zero fueling event" by decelerating for ten (10) seconds with your foot off of the accelerator pedal and without applying the brakes. Repeat this action 10-15 times. This completes the Fuel System Monitor drive cycle. - END

C. Secondary Air System Monitor (Boost System)

The following conditions must be met:

• Engine must be running for ten (10) minutes and coolant temperature must be over 140ºF.
• VGT compressor inlet air temperature must be below 122°F.
• Mass airflow volume must be above 2 kg/min. Vehicle must be off-idle.
• Ambient air temperature must be above 20°F.
• Final Aftertreatment Operating Mode should be at Normal.

To run the monitor:

Drive your Dodge Ram Diesel truck on the highway. Perform a "boost event" by suddenly depressing the accelerator pedal to provide turbocharger boost to the system. Repeat this action 15-20 times. This completes the Secondary Air Injection Monitor drive cycle. - END

D. EGR System Monitor

The following conditions must be met:

• Engine must be warmed up, i.e. coolant temp over 140ºF.
• Final Aftertreatment Operating Mode should be at Normal.

To run the monitor:

Drive your truck on the highway for 20-25 minutes. No further specific requirement. This completes the EGR System Monitor drive cycle. - END

E. Oxygen Sensor Monitor (Exhaust Gas Sensor)

The following conditions must be met:

• Engine must be running for two (2) minutes.
• Coolant temperature must be over 180°F for more than one (1) minute.
• Final Aftertreatment Operating Mode should be at Normal.

To run the monitor:

Drive your Dodge diesel truck on the highway with the Final Aftertreatment Operating Mode at Normal mode. Perform a "zero fueling event" by decelerating for ten (10) seconds with your foot off of the accelerator pedal. When accelerating, gradually depress the accelerator pedal. Do not make any rapid movement. Repeat this action 15-20 times. At the end of the drive, and while the truck is in Park with the Parking Brake engaged, increase the engine speed to 1200-1300 RPMs for 2-3 minutes. Repeat this action 2-4 times. If after performing these directions the Oxygen Sensor Monitor does not go into ready or complete status, turn off the truck and allow a ten (10) minute power down of the PCM before repeating these directions. This completes the Oxygen Sensor Monitor drive cycle. - END

F. Catalyst Monitor (NMHC System)

The following conditions must be met:

• Engine must be warmed up, i.e. coolant temperature must be over 140ºF.
• Final Aftertreatment Operating Mode should be at DeSoot.

To run the monitor:

Drive the truck on the highway for 12-15 minutes at steady speed. After the 12-15 minutes of highway driving, exit the highway and proceed to a location where the truck can be safely parked. Come to a complete stop and allow the engine to idle for five (5) minutes. Repeat this action if the truck is still in DeSoot mode. This completes the Catalyst Monitor drive cycle. - END

G. Heated Catalyst Monitoring (Particulate Matter "PM" Filter System)

The following conditions must be met:

• Engine must be warmed up, i.e. coolant temperature must be over 140ºF.
• Exhaust gas temperature for sensor 3 must be reading above 150°F.
• Inlet air pressure reading at idle must be above 11 psi.
• Soot filter delta pressure reading must be below 29 psi.

To run the monitor:

This monitor requires a minimum of two DeSoots cycles to complete running the PCM diagnostics procedure. Drive your Dodge Ram on the highway until the truck goes into DeSoot mode. Continue

driving on the highway for forty-five (45) minutes or until a second DeSoot initiates. Once the second DeSoot mode completes, drive the truck for another fifteen (15) minutes. The truck does not need to enter DeSoot modes during the same driving cycle. A helpful tip is to first drive your truck in city traffic conditions, e.g. stop and go style, to help produce more soot and enable the Final Aftertreatment Operating mode to enter DeSoot the quickest. This completes the Heated Catalyst Monitor drive cycle. - END

H. Oxygen Sensor Heater Monitor (NOx Aftertreatment System)

The following conditions must be met:

• Engine must be warmed up, i.e. coolant temperature must be over 140ºF.
• Exhaust gas temperature for sensor 3 must be reading above 150°F.

To run the monitor:

Drive your Dodge Ram on the highway until the truck goes into and completes a DeSoot mode. Once the DeSoot mode completes, the PCM will trigger several DeNox and DeSox events. This will usually take place within 5 minutes of completing the DeSoot. Continue driving the truck on the highway at a steady speed until 10-15 DeNox events occur. This completes the Oxygen Sensor Heater Monitor drive cycle. - END

I. Comprehensive Component Monitor (CCM)

To run the monitor:

This monitor almost never fails and runs immediately at engine start successfully. In case of failure, completely power down the truck and perform a restart.

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