



Driver Tips For Fire And Emergency Vehicles.

For EPA 2013 Cummins On-Highway Heavy-Duty
And MidRange Engines With Aftertreatment.



This guide covers engine, aftertreatment and emissions-related indicator lamps* found on your vehicle's instrument panel and explains what they mean and the actions drivers need to take when the lamps illuminate. Important information about fuel, oil, Diesel Exhaust Fluid (DEF) and operating tips is also included.

The information in this tips card is specific to Cummins-powered fire and emergency vehicles. If you need information regarding other on-highway applications, please reference Bulletin 4971518.

General Engine Indicator Lamps.



Check Engine Lamp Or Amber Warning Lamp

The Check Engine Lamp (which may also be referred to as the Amber Warning Lamp) illuminates when the engine needs to be serviced at the first available opportunity.



Stop Engine Lamp

The red Stop Engine Lamp indicates, when illuminated, that the vehicle needs to be stopped as soon as it is safe to do so.

On-Board Diagnostics.

Starting in 2013, all on-highway engines include On-Board Diagnostics as a part of the emissions regulation requirement. On-Board Diagnostics monitors all emissions-related engine systems during operation. If the system detects any emissions-related malfunctions, it will alert the operator to these detected malfunctions through a dash lamp known as the Malfunction Indicator Lamp (MIL).



Malfunction Indicator Lamp (MIL)

The MIL illuminates when the On-Board Diagnostics system detects a malfunction related to the emissions control system. The illuminated MIL indicates that the engine and aftertreatment system should be diagnosed and serviced at your next available opportunity. The MIL can be illuminated along with any of the engine indicator lamps.



If the MIL is illuminated with the red Stop Engine Lamp, the vehicle should be stopped as soon as it is safe to do so. It should then be taken to an authorized Cummins location for repair.

*Lamps shown are for illustrative purposes only. Be sure to reference your vehicle manufacturer's Owners Manual for specific lamps and details.

Diesel Exhaust Fluid For Selective Catalytic Reduction (SCR) Aftertreatment.

Every vehicle with a U.S. Environmental Protection Agency (EPA) 2010 or newer engine has an on-frame storage tank for Diesel Exhaust Fluid (DEF) and a dash lamp that indicates low DEF levels. Refilling this tank with DEF is critical in order for your vehicle to comply with EPA emissions regulations.

Diesel Exhaust Fluid (DEF) Lamp



Illuminated

An illuminated DEF Lamp is an indication that the DEF level is low. This can be corrected by refilling the DEF tank with Diesel Exhaust Fluid.



Flashing

A flashing DEF Lamp indicates that the DEF level has fallen below a critical level. This can be corrected by refilling the DEF tank.



Flashing DEF Lamp With Check Engine Lamp/ Amber Warning Lamp

A flashing DEF Lamp combined with an illuminated Check Engine Lamp/Amber Warning Lamp indicates that the DEF level is critically low. This can be corrected by refilling the DEF tank.

Emissions Derate Exemptions.

Cummins EPA 2013 and newer diesel engines for fire and emergency vehicles should not experience any emissions-related vehicle speed or engine torque derates. To determine if there are calibration updates applicable to your engine, contact Cummins Care at 1-800-DIESELS™ (1-800-343-7357) with your Engine Serial Number (ESN). Visit cumminsengines.com/fire-and-emergency for more details and information on engines built prior to 2013.

Diesel Particulate Filter (DPF).

The DPF is an integral component of the aftertreatment system on vehicles equipped with EPA 2007 and newer engines, excluding some EPA 2007 ISM engines. It captures Particulate Matter (PM) in a wall-flow ceramic filter. The exhaust system periodically undergoes regeneration, raising temperatures to oxidize captured PM and clean the system. Lamps alert the driver when a regeneration is needed.



High Exhaust System Temperature (HEST) Lamp

The HEST Lamp illuminates to indicate that high exhaust temperatures may exist due to aftertreatment regeneration. This is normal, and does not signify the need for any kind of vehicle service or engine service. When this lamp is illuminated, ensure that the exhaust pipe outlet is not directed at any combustible surface or material. Reference your Cummins Owners Manual for complete instructions.



Aftertreatment Diesel Particulate Filter (DPF) Lamp

Illuminated

The Aftertreatment DPF Lamp indicates, when illuminated or flashing, that the Aftertreatment DPF requires regeneration. This is accomplished by the following:

1. If the vehicle is equipped with a Regeneration Inhibit Switch, ensure that the switch is not in the Inhibit position.
2. Perform a DPF regeneration by one of the following methods:
 - a. Change to a more challenging duty cycle – such as highway driving – for at least 20 minutes to increase exhaust temperatures.
OR
 - b. Perform a parked regeneration.



Flashing

If a regeneration is not performed in a timely manner after the DPF Lamp is illuminated, the DPF Lamp will begin to flash. This indicates a higher level of PM in the DPF.



Flashing With Check Engine Lamp/Amber Warning Lamp

A flashing DPF Lamp combined with an illuminated Check Engine Lamp/ Amber Warning Lamp indicates that the aftertreatment DPF needs regeneration immediately. A parked regeneration is required.



Stop Engine Lamp

If a parked regeneration is not performed, the red Stop Engine Lamp will illuminate. As soon as it is safe to do so, the vehicle should be stopped. It should then be taken to an authorized Cummins location for repair.

Note: Cummins engines calibrated for emergency vehicle use are programmed to not reduce power or speed due to soot load. However, excessive soot load may impact engine performance.

Regeneration Inhibit Switch

The purpose of this switch is to prevent or disable active aftertreatment DPF regeneration. Reference the vehicle Owners Manual for complete operation and use of this switch. Unnecessary or excessive use of the Regeneration Inhibit Switch will result in a loss of fuel economy, or an increased need for parked regeneration.

How To Perform A Parked (Stationary) Regeneration.

If the vehicle has a Manual Regeneration Switch and the DPF Lamp is illuminated or flashing:

- Park vehicle in an appropriate location, set parking brake and place transmission in Park (if provided) or Neutral, and allow up to one hour for the regeneration.
- Set up a safe exhaust area. Confirm that nothing is on or near the exhaust system surfaces.
- Ensure that your fast-idle and power take-off (PTO) switches are off before starting regeneration.
- Push the Manual Regeneration Switch to begin a parked regeneration. Note: Engine speed will increase, and there may be a noticeable change to the sound of the turbocharger during the regeneration process. Once the DPF is regenerated, the engine will automatically return to the normal idle speed.
- Monitor the vehicle and surrounding area during regeneration. If any unsafe condition occurs, shut off the engine immediately. To stop a parked regeneration, depress the brake or throttle pedal.
- Once regeneration is complete, exhaust gas and exhaust surface temperatures will remain elevated for three to five minutes.

Reference your Cummins Owners Manual and vehicle Owners Manual for complete operating instructions.

Fuel, Oil And DEF.

- Use only Ultra-Low Sulfur Diesel (ULSD) fuel.
- CJ-4 (low ash) is the recommended oil.
- Be sure to check the DEF gauge at every refueling. Cummins recommends topping off the DEF tank when refueling. DEF meeting ISO 22241-1 must be used.
- Please read your vehicle manufacturer's Owners Manual to familiarize yourself with the location and capacity of the DEF tank.
- Put only DEF in the DEF tank, which has a blue cap.



Items Driver Will Notice.

- Under certain conditions (cold or very dry), condensation in the form of water vapor can be seen coming from the vehicle tailpipe. This is normal. It will clear within a few minutes of normal vehicle operation.
- If the engine is left at idle for significant periods of time without reaching the minimum exhaust operating temperatures, the engine will automatically increase the engine idle speed for several minutes to maintain the condition of the particulate filter. This can be interrupted by pressing the service brake.
- After prolonged idle, you may notice momentary white vapor and an odor. This is normal.
- When the High Exhaust System Temperature Lamp is illuminated, you may notice an odor. This is normal. If the odor is excessive and you also notice white vapor, have the exhaust system inspected for leaks.

Cummins Care.

Our authorized service technicians are fully trained to promptly handle any type of service issue. Call Cummins Care at 1-800-DIESELS™ (1-800-343-7357), and representatives will be available to answer product questions and provide assistance during a repair or service event.



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