QUICK REFERENCE GUIDE

Truck maintenance and operation

L9 (EPA 2024)

For ease of identification, important characteristics of this engine are:

- Single camshaft
- XPI fuel system
- Single module DPF and SCR aftertreatment system
- ECM 2450 (this control module incorporates DEF dosing control)
- Variable geometry turbocharger (VGT)
- Exhaust gas recirculation system (EGR)

MAINTENANCE INTERVALS

Duty cycle (mpg)		Fuel consumption			
Oil drain intervals (ODI)*		Extreme (< 2.9 mpg) (< 1.2 km/liter)	Severe (3 - 4.9 mpg) (1.3 – 2.1 km/liter)	Normal (5 - 7.9 mpg) (2.1 – 3.3 km/liter)	Light (> 8 mpg) (> 3.4 km/liter)
Oil capacity: ≥ 29 quarts	**Miles**	6,000	15,000	30,000	50,000
	Kilometers	9,600	24,000	48,000	80,000
	Hours	1,200	1500		
	Months	18			
Oil capacity: < 29 quarts	**Miles**	5,000	12,500	25,000	40,000
	Kilometers	8,000	20,000	40,000	64,000
	Hours	1,000	1,200		
	Months	18			
Fuel filter:		50,000 miles (80,000 km) / 1,500 hours / 18 months			
Crankcase ventilation:		Maintenance free			
Overhead adjustment:		150,000 miles (240,000 km) / 4,500 hours			
DPF clean:		200,000 miles (320,000 km) / 6,500 hours			
DEF filter:		300,000 miles (480,000 km) / 6,750 hours			

*Requires the use of LF14009 Oil Filter. Consult the relevant procedures in the Owners or Maintenance and Operation manuals.

Maintenance information

CAUTION

- Never crack a high pressure fuel line with the engine running. With the engine stopped, relieve pressure only at the fuel pump inlet line fitting on the side of the rail.
- When changing the engine mounted fuel filter, never pre-fill by pouring fuel in the center hole (clean side).
- Recommended procedure is to install filter dry and cycle the key switch on 3–4 times and allow the priming pump to fill the filter.
- If you have to pre-fill the filter, use the smaller outside holes (dirty side) and let the fuel flow through the filter media to provide clean, filtered fuel to the clean side.
- Synthetic or semi-synthetic oils may be beneficial for extreme arctic or extreme heat conditions but DO NOT EXTEND oil drain intervals with synthetic or semi-synthetic oils.
- 10W-30 and 15W-40 oils meeting Cummins specifications may be used in these engines.
- Check the oil pressure indicators, temperature indicators, warning lights, and other gauges daily to make sure they are operational.
- Check the oil pressure, coolant temperatures, DEF level and other engine parameters daily via the OEM instrument panel or gauge cluster to make sure they are operational. Check the instrument panel regularly for any alarm messages. Take appropriate action to rectify the alarm condition or contact your nearest Cummins distributor.

Electronic features

For best fuel economy and performance, take advantage of the following electronic engine features, setting the parameters to meet your needs:

- Road Speed Governor
- Cruise Control
- Idle Control
- Gear Down Protection

For guidance in parameter settings: https://www.cummins.com/parts-and-service/digital-products-and-services/powerspec.

DPF cleaning or change intervals

Cummins Inc. recommends aftertreatment DPFs that require ash cleaning to be returned to a Cummins authorized repair location for replacement. Unauthorized cleaning methods are not to be used to clean the aftertreatment DPF.

The Aftertreatment Diesel Oxidation Catalyst and Aftertreatment Diesel Particulate Filter Reuse Guidelines, Bulletin 4021600, can be used to determine if the aftertreatment DPF is suitable for use.

Lubricating oil systems

SPECIFICATIONS

Oil pressure	
Low idle (min allowed)	69 kPa (10 psi)
At rated speed (min allowed)	207 kPa (30 psi)
Oil capacity (standard pan)	
Pan only	18.9 – 22.7 liters (20 – 24 qt)
Total system	21.74 – 25.54 liters (27 qt)
Oil capacity (high capacity)	
Pan only	24.6 – 28.4 liters (26 – 30 qt)
Total system	27.44 – 31.24 liters (33 qt)
Oil filter capacity	2.84 liters (3 qt)

Cooling system

SPECIFICATIONS

Coolant capacity
15.6 liters (16.5 qt)

Normal coolant temperature range
175 - 203°F (79 - 95°C)

Maximum top tank temperature
225°F (107°C)

Minimum recommended pressure cap range
90 kPa (13 psi)

Fuel system

SPECIFICATIONS

Maximum pressure drop across fuel filter
80 kPa (11.7 psi)

Maximum fuel return line pressure
34 kPa (4.9 psi)

Cooling system information

Cummins recommends using either a 50/50 mixture of good quality water and fully formulated antifreeze, or fully formulated coolant when filling the cooling system. The fully formulated antifreeze or coolant must meet Cummins Engineering Standard (CES)14603 specifications.

Most coolants which meet American Society of Testing and Materials (ASTM) D6210 also meet CES14603.

However, some OAT coolants such as Shell™ Rotell ELC, Chevron™, Texaco™, and Delo ELC and their private label counterparts meet ASTM D6210, but do not meet the elastomer compatibility test of CES14603. These coolants are acceptable for use, assuming the OEM added silicate at initial fill. Refer to bulletin 3666132, Cummins® Coolant Requirements and Maintenance, Section 3, Extended Service Interval, for more details.

Diesel exhaust fluid

It is unlawful to tamper with or remove any component of the aftertreatment system. It is also unlawful to use a Diesel Exhaust Fluid (DEF) that does not meet the specifications provided or to operate the vehicle/equipment with no DEF. Cummins is not responsible for failures or damage resulting from what Cummins determines to be abuse or neglect.

In compliance with the regulatory agencies (EPA and CARB), the Cummins engine system incorporates on board diagnostics and electronic controls to monitor and ensure that tail pipe emissions requirements are met. A DEF lamp will notify the driver when the DEF tank level is running low and/or the quality of the DEF in the tank is not meeting specifications. Failure to promptly refill or replace DEF in the tank will trigger an inducement sequence, limiting engine torque and, eventually, vehicle speed to 5 mph.

For further details and discussion of DEF for Cummins engines, refer to Diesel Exhaust Fluid Specifications for Cummins Selective Catalytic Reduction Systems, bulletin 4021566.

For engines using SCR operating in the United States and Canada, it is also strongly recommended that the DEF used be certified by the American Petroleum Institute (API). This would be indicated by a symbol on the container/dispensing system.

To ensure the correct DEF is used, Cummins recommends the use of Fleetguard® Diesel Exhaust Fluid. Fleetguard® carries different quantity options from small to bulk containers.

For complete maintenance recommendations and guidelines, refer to EPA 2024 L9 CM2450 Owner's Manual, Bulletin 5613075 and EPA 2024 L9 CM2450 Operation and Maintenance Manual, Bulletin 5613076.

Cummins Inc.
Box 3005
Columbus, IN 47202-3005
U.S.A.

cummins.com

Bulletin 6553664 Produced in U.S.A. 11/24