



102-002 Maintenance Schedule

General Information

Automotive Applications

Perform maintenance at whichever interval occurs first. At each scheduled maintenance interval, perform all previous maintenance checks that are due for scheduled maintenance.

Maintenance Procedures at Daily Interval⁽¹⁾

- Air Cleaner Restriction - Check
- Air Intake Piping - Check
- Air Tanks and Reservoirs - Drain
- Coolant Level - Check
- Charge Air Piping - Check
- Crankcase Breather Tube - Check
- Drive Belts - Check
- Fan, Cooling - Check
- Fuel-Water Separator - Drain
- Lubricating Oil Level - Check
- Aftertreatment Exhaust Piping - Check
- Diesel Exhaust Fluid (DEF) Level - Check

Maintenance Procedures at 40,000 Kilometers [25,000 Miles], 800 Hours, or 6 Months^{(1) (3)}

- Pressure Fuel Filter - Change
- Fuel Filter Suction - Check
- Lubricating Oil and Filters - Change
- Radiator Pressure Cap - Check
- Supplemental Coolant Additive (SCA) and Antifreeze Concentration - Check
- Charge Air Cooler - Check

Maintenance Procedures at 80,000 Kilometers [50,000 Miles], 1500 Hours, or 1 Year⁽²⁾

- Air Compressor Discharge Lines - Check
- Air Compressor Air Cleaner Element - Check
- Air Leaks, Air Intake and Exhaust Systems - Check
- Cooling Fan Belt Tensioner - Check

- Coolant Filter - Change (The use of coolant filter is optional when using coolant meeting Cummins® coolant requirements.)
- Engine Wiring Harness - Check

Maintenance Procedures at 200,000 Kilometers [125,000 Miles] or 3000 Hours⁽⁵⁾

- Crankcase Breather Element - Change

Maintenance Procedures at 200,000 Kilometers [125,000 Miles], 3000 Hours, or 2 Years

- Radiator Hoses - Check
- Cold Starting Aid - Check
- Radiator Shutter Assembly - Check
- Vibration Damper, Viscous - Check
- Engine Mounting Bolts - Check
- Engine Steam Cleaning - Clean

Maintenance Procedures at 241,000 Kilometers [150,000 Miles] or 4500 Hours

- Aftertreatment Fuel Injector - Clean

Maintenance Procedures at 320,000 Kilometers [200,000 Miles] or 4500 Hours⁽⁴⁾

- Aftertreatment Diesel Particulate Filter (DPF) - Clean
- Aftertreatment Diesel Exhaust Fluid Dosing Unit Filter - Change

Maintenance Procedures at 400,000 Kilometers [250,000 Miles], 6000 Hours, or 2 Years

- Cooling System - Flush

Maintenance Procedures at 800,000 Kilometers [500,000 Miles], 10,000 Hours, or 5 Years⁽⁶⁾

- Engine Brake Assembly - Test
- Fan Hub, Belt Driven - Check
- Overhead Set - Adjust

1. The lubricating oil and lubricating oil filter intervals are based on Cummins® Engineering Standard (CES) 20081 and a normal duty cycle. Oil change intervals can be adjusted based on fuel consumption. See the Oil Drain Intervals Table for Severe Duty and Light Duty drain intervals in this section.
2. Follow the manufacturer's recommended maintenance procedures for the starter, alternator, generator, batteries, electrical components, engine brakes, exhaust brake, charge air cooler, air compressor, air conditioner compressor, and fan clutch.
3. Test the SCA concentration level every 6 months unless the concentration is over three units; then check at every oil drain interval until the concentration is below three units. Use the following procedure for coolant condemnation limits. [Refer to Procedure 018-004 in Section V.](#)
4. The aftertreatment diesel particulate filter intervals can be adjusted, based on the type of engine oil that is used. See the Aftertreatment Cleaning Intervals table for cleaning

intervals. Cummins Inc. recommends exchanging the DPF with a new or ReCon® aftertreatment DPF at the recommended maintenance interval.

5. **Only** if equipped with a crankcase breather filter element. Maintenance free crankcase breather inserts are unaffected by normal engine blowby limits and have no maintenance requirement. For crankcase breather filter elements, maintenance The crankcase breather element intervals can be adjusted based on engine blowby. See the Crankcase Breather Filter Element Change Intervals table below.
6. The components of the engine brake that are subjected to wear during normal operation of the engine are available as a kit through Cummins® Inc. Distributors/Dealers. It is recommended to do this maintenance at 800,000 km [500,000 mi], 10,000 hours, or 5 years.

All EPA 07, EPA 10, EPA Tier 4 Interim/European Union Stage IIIB 2011(174 -751 hp) engine systems equipped with exhaust aftertreatment **must** operate on ultra-low sulfur diesel (ULSD) with a maximum sulfur content of 15 ppm in the United States and 10 ppm in the European Union. Failure to do so can permanently damage engine and aftertreatment systems within a short period of time. This damage could cause the engine to become inoperable and affect the warranty coverage on the engine system.

Aftertreatment Cleaning Intervals		
Oil Classification	Kilometers/miles	Hours
CES20081	320,000 [200,000]	4500
CES20078	241,000 [150,000]	4500

Crankcase Breather Filter Element Change Intervals	
Engine Blowby	Interval
Less than 305 mm-H ₂ O [12 in-H ₂ O]	200,000 km [125,000 mi] or 3,000 hr
Greater than or equal to 305 mm-H ₂ O [12 in-H ₂ O]	120,000 km [75,000 mi] or 1,500 hr

Oil Drain Intervals

Select the oil drain interval based on oil classification for Recreational Vehicle, Refuse, Mixer, Dump, Delivery, Logging, Fire Truck, or Crane vehicle applications.

Oil Classification	Kilometers	Miles	Hours	Months
CES 20081 and CES 20078 ⁽¹⁾⁽²⁾	24,000	15,000	400	6

If the application is **not** one of the above, select the oil drain interval Extreme Severe Duty, Severe Duty, Normal Duty, or Light Duty, based on how you use the engine. See Oil Drain Intervals by severity km [mi] located in this section.

- Follow oil drain interval Extreme Severe Duty if the vehicle operates under either of the conditions listed in interval Extreme Severe Duty.
- Follow oil drain interval Severe Duty if the vehicle operates under either of the conditions listed in interval Severe Duty
- Follow oil drain interval Normal Duty if the vehicle operates under either of the conditions listed in interval Normal Duty and does **not** meet any of the conditions listed in interval Severe Duty
- Follow oil drain interval Light Duty if the vehicle operates under both of the conditions listed in interval Light Duty and does **not** meet any of the conditions listed in interval Severe Duty or interval Normal Duty.

Oil Classification	Extreme Severe Duty	Severe Duty	Normal Duty	Light Duty
	≤ 1.27 km/liter [3.0 mpg]	1.27 to 2.3 km/liter [3.0 to 5.5 mpg]	2.3 to 2.8 km/liter [5.5 to 6.5 mpg]	≥ 2.8 km/liter [6.5 mpg]
CES 20081 ⁽¹⁾ (2)	7,000 km [4,500 mi]	24,000 km [15,000 mi]	40,000 km [25,000 mi]	56,000 km [35,000 mi]
CES 20078 ⁽¹⁾ (2)	10,000 km [6,000 mi]	32,000 km [20,000 mi]	48,000 km [30,000 mi]	64,000 km [40,000 mi]

- The use of Centinel™ or any type of oil blending is prohibited. The use of a high quality filter is mandatory.
- Engines **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel.
- For Normal and Light duty cycles **only** (outlined in the above table): If Valvoline Premium Blue™ or Valvoline Premium Blue Extreme™ is being used; the oil drain intervals listed in the above chart can be increased by 8,050 km [5,000 miles]. All other oil brands **must** follow the oil drain intervals listed above.

NOTE: Extending the oil and filter change interval beyond the recommendation will decrease engine life due to factors such as corrosion, deposits, and wear.

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