



102-002 Maintenance Schedule

General Information

Automotive With CM871

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 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
- Centinel™ Oil Level - Check
- Aftertreatment Exhaust Piping - Check

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

- Fuel Filter (Spin-On Type) - Change
- 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 Cleaner Restriction - Check
- Air Compressor Discharge Lines - Check
- Air Compressor Air Cleaner Element - Check
- Air Leaks, Air Intake and Exhaust Systems - Check
- Cooling Fan Belt Tensioner - Inspect for Reuse

- 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 400,000 Kilometers [250,000 Miles], 6000 Hours, or 2 Years

- Cooling System - Flush

Maintenance Procedures at 480,000 Kilometers [300,000 Miles] or 6750 Hours (4)

- Aftertreatment Diesel Particulate Filter - Clean

Maintenance Procedures at 800,000 Kilometers [500,000 Miles], 10000 Hours, or 5 Years (6)

- Engine Brake Assembly - Test
- Fan Hub, Belt Driven - Inspect for Reuse
- Overhead Set - Adjust

1. The lubricating oil and lubricating oil filter intervals are based on Cummins® Engineering Standard 20,081 and a normal duty cycle. Oil change intervals can be adjusted based on fuel consumption and whether or **not** the oil meets Cummins® Engineering Standard 20,081. 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. 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.
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.

- 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 low emission' 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.

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 3000 hr
Greater than or equal to 305 mm H ₂ O [12 in H ₂ O]	120,000 km [75,000 mi] or 1500 hr

Use the following procedure to replace the crankcase breather element. [Refer to Procedure 003-019 in Section A.](#)

Automotive with CM870/CM871E

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

Section 3 - Maintenance Procedures at Daily Interval (1)

- 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
- Centinel™ Oil Level - Check

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

- Fuel Filter (Spin-On Type) - Change
- 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 km [50,000 mi], 1500 Hours, or 1 Year (2)

- Air Cleaner Restriction - Check
- Air Compressor Discharge Lines - Check
- Air Compressor Air Cleaner Element - Check
- Air Leaks, Air Intake and Exhaust Systems - Check
- Cooling Fan Belt Tensioner - Inspect for Reuse
- Coolant Filter - change
- Engine Wiring Harness - Check

Maintenance Procedures at 200,000 km [125,000 mi], 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 400,000 km [250,000 mi], 6000 Hours, or 2 Years

- Turbocharger Air Shutoff Valve Filter - Change
- Cooling System - Flush

Maintenance Procedures at 800,000 km [500,000 mi], 10,000 Hours, or 5 Years(4)

- Engine Brake Assembly - Test
- Fan Hub, Belt Driven - Inspect for Reuse
- Overhead Set - Adjust

1. The lubricating oil and lubricating oil filter intervals are based on Cummins® Engineering Standard 20,078 and a normal duty cycle. Oil change intervals can be adjusted based on fuel consumption and whether or **not** the oil meets Cummins® Engineering Standard 20,078. 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. For coolant condemnation limits, [Refer to Procedure 018-004 in Section V](#).
4. 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.

Automotive with CM570

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

Section 3 - Maintenance Procedures at Daily Interval (1)

- 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
- Centinel™ Oil Level - Check

Maintenance Procedures at 32,000 Kilometers [20,000 Miles], 625 Hours, or 6 Months (1) (3)

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

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

- Air Cleaner Restriction - Check
- Air Compressor Discharge Lines - Check
- Air Compressor Air Cleaner Element - Check
- Air Leaks, Air Intake and Exhaust Systems - Check
- Cooling Fan Belt Tensioner - Inspect for Reuse
- Coolant Filter - Change
- Engine Wiring Harness - Check

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

- Cooling System - Flush

Maintenance Procedures at 800,000 Kilometers [500,000 Miles], 10000 Hours, or 5 Years (4)

- Engine Brake Assembly - Test
- Fan Hub, Belt Driven - Inspect for Reuse
- Overhead Set - Adjust

1. The lubricating oil and lubricating filter intervals are based on Cummins® Engineering Standard 20,078. Oil change intervals can be adjusted based on fuel consumption and

- whether or **not** the oil meets Cummins® Engineering Standard 20,078. See the Maximum Oil Drain Tables for Normal Duty and Light Duty drain intervals located in this section.
- 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.
 - 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. For coolant condemnation limits, [Refer to Procedure 018-004 in Section V](#).
 - 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.

Oil Drain Intervals

Automotive With CM871

Select 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 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 ³	Light Duty ³
	<1.27 km/liter [3 mpg]	< 2.3 km/liter [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)	7,200 km [4,500 mi]	24,000 km [15,000 mi]	40,000 km [25,000 mi]	56,000 km [35,000 mi]

Oil Classification	Extreme Severe Duty	Severe Duty	Normal Duty ³	Light Duty ³
	<1.27 km/liter [3 mpg]	< 2.3 km/liter [5.5 mpg]	<2.3 to 2.8 km/liter [5.5 to 6.5 mpg]	> 2.8 km/liter [6.5 mpg]
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]

1. The use of Centinel™ or any type of oil blending is prohibited. The use of a high quality filter is mandatory. Refer to Procedure 018-024 in Section V for Cummins® and Fleetguard® filter part numbers.
2. Engines **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel.
3. 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.

Automotive with CM870/CM871E

Select 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 20076	11,000	7000	300	6
CES 20078, CES 20081 ²	24,000	15,000	400	6

If the application is **not** one of the above, select the oil drain interval 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 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 ³	Light Duty ³
	<1.27 km/liter [3 mpg]	< 2.3 km/liter [5.5 mpg]	2.3 to 2.8 km/liter [5.5 to 6.5 mpg]	> 2.8 km/liter [6.5 mpg]
CES 20078 ⁽¹⁾ , CES 20081 ²	7,200 km [4500 mi]	24,000 km [15,000 mi]	40,000 km [25,000 mi]	56,000 km [35,000 mi]
CES 20076	10,000 km [6000 mi]	16,000 km [10,000 mi]	32,000 km [20,000 mi]	48,000 km [30,000 mi]

- Oil Classification
1. If the engine is equipped with Centinel™, lubricating oil with American Petroleum Institute (API) grade CI-4 or oil that conforms to CES 20,078 is required to maintain engine performance and durability. Oil drain intervals using Centinel™ will be 500,000 miles with oil filter change at 75,000 miles. The use of a high-quality filter is mandatory. Refer to Procedure 018-024 in Section V for a Cummins®/Fleetguard® oil filter part number.
 2. When used with ultra-low sulfur diesel fuel (15 ppm sulfur). If sulfur content of the fuel is greater than 15 ppm, the oil change intervals **must** be reduced by 20 percent.
 3. 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.

Automotive with CM570

Select 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 20071	17,500	11,000	500	6
CES 20076 and CES 20078, CES 20081 ¹	22,500	14,000	600	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 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.

1. When used with ultra-low sulfur diesel fuel (15 ppm sulfur). If the sulfur content of the fuel is greater than 15 ppm, the oil change intervals **must** be reduced by 20 percent.

Oil Classification	Extreme Severe Duty	Severe Duty	Normal Duty ³	Light Duty ³
	<1.27 km/liter [3 mpg]	< 2.3 km/liter [5.5 mpg]	2.3 to 2.8 km/liter [5.5 to 6.5 mpg]	> 2.8 km/liter [6.5 mpg]
CES 20071	7,200 km [4,500 mi]	40,000 km [25,000 mi]	56,000 km [35,000 mi]	80,000 km [50,000 mi]
CES 20076, CES 20078, CES 20081 ¹	10,000 km [6,000 mi]	48,500 km [30,000 mi]	72,500 km [45,000 mi]	96,500 km [60,000 mi]

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

NOTE: If the sulfur content of the fuel is greater than 0.50 percent, the oil change intervals must be reduced by an additional 20 percent.

1. When used with ultra-low sulfur diesel fuel (15 ppm sulfur), if the sulfur content of the fuel is greater than 15 ppm, the oil change intervals **must** be reduced by 20 percent.
2. 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.

All Others Without EGR

Select an 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 20071	11,500	7000	300	6
CES 20076 and CES 20078, CES 20081 ¹	14,500	9000	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 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.

1. When used with ultra-low sulfur diesel fuel (15 ppm sulfur), if the sulfur content of the fuel is greater than 15 ppm, the oil change intervals **must** be reduced by 20 percent.

Oil Classification	Extreme Severe Duty	Severe Duty	Normal Duty ³	Light Duty ³
	<1.27 km/liter [3 mpg]	< 2.3 km/liter [5.5 mpg]	2.3 to 2.8 km/liter [5.5 to 6.5 mpg]	> 2.8 km/liter [6.5 mpg]
CES 20071	7,000 km [4,500 mi]	24,000 km [15,000 mi]	56,500 km [35,000 mi]	72,500 km [45,000 mi]

Oil Classification	Extreme Severe Duty	Severe Duty	Normal Duty ³	Light Duty ³
	<1.27 km/liter [3 mpg]	< 2.3 km/liter [5.5 mpg]	2.3 to 2.8 km/liter [5.5 to 6.5 mpg]	> 2.8 km/liter [6.5 mpg]
CES 20076, CES 20078, CES 20081 ¹	10,000 km [6,000 mi]	32,000 km [30,000 mi]	64,500 km [40,000 mi]	80,500 km [50,000 mi]

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

NOTE: If the sulfur content of the fuel is greater than 0.50 percent, the oil change intervals must be reduced by an additional 20 percent.

1. When used with ultra-low sulfur diesel fuel (15 ppm sulfur). If the sulfur content of the fuel is greater than 15 ppm, the oil change intervals **must** be reduced by 20 percent.
2. 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.

Select aftertreatment filter cleaning intervals based on oil classification that is being used.

Aftertreatment Cleaning Intervals			
Oil Classification	Kilometers	Miles	Hours
CES20081	480,000	300,000	6750
CES20078	360,000	225,000	6750

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