



102-002 Maintenance Schedule

General Information

Automotive with CM876

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

- Fuel-Water Separator - Drain
- Lubricating Oil Level - Check
- Coolant Level - Check
- Fan, Cooling - Check
- Drive Belts - Check
- Air Intake Piping - Check
- Crankcase Breather Tube - Check
- Air Tanks and Reservoirs - Drain
- Aftertreatment Exhaust Piping - Check
- Charge Air Piping - Check

Maintenance Procedures at 24,000 Kilometers [15,000 Miles], 300 Hours, or 6 Months⁽¹⁾, ⁽³⁾

- Fuel Filter (Spin-On) - Change
- Lubricating Oil and Filters - Change⁽¹⁾
- Lubricating Oil Filter (Spin-On) - Change
- Radiator Pressure Cap - Check
- Coolant Filter - Change (The use of coolant filter is optional when using coolant meeting Cummins® coolant requirements.)
- Supplemental Coolant Additive (SCA) and Antifreeze Concentration - Check⁽²⁾
- Charge Air Cooler - Check

Maintenance Procedures at 192,000 Kilometers [120,000 Miles], 3000 Hours, or 2 Years⁽²⁾ ⁽⁵⁾

- Belt Tensioner, Automatic - Check
- Overhead Set - Measure
- Engine Brakes - Check (if equipped)

- Exhaust Gas Recirculation (EGR) System Hoses - Check

Maintenance Procedures at 240,000 Kilometers [150,000 Miles] or 4000 Hours

- Crankcase Breather Element - Change

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

- Aftertreatment Fuel Injector - Clean

Maintenance Procedures at 385,000 Kilometers [240,000 Miles], 6000 Hours, or 3 Years⁽²⁾

- Cooling System - Flush
- Vibration Damper, Viscous - Check
- Engine Mounting Bolts - Check

Maintenance Procedures at 480,000 Kilometers [300,000 Miles] or 6,750 Hours⁽³⁾

- Aftertreatment Diesel Particulate Filter - Clean
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 upon 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. Test the SCA concentration level every 6 months unless concentration is over 3 units; then check at every oil drain interval until the concentration is below 3 units. [Refer to Procedure 018-004 in Section V for coolant condemnation limits.](#)
 3. 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.
 4. The crankcase breather filter intervals can be adjusted based on engine blowby. See the Crankcase Breather Filter Change Intervals Table below.
 5. The components of the engine brake that are subject 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.

Automotive with CM876

Crankcase Breather Filter Change Intervals (Engines with CM876)	
Engine Blowby	Interval
Less than 305 mm H ₂ O [12 in H ₂ O]	240,000 km [150,000 mi], or 4,000 hours

Crankcase Breather Filter Change Intervals (Engines with CM876)	
Engine Blowby	Interval
Greater than or equal to 305 mm H ₂ O [12 in H ₂ O]	160,000 km [100,000 mi], or 3,000 hours

Use the following procedure to replace the crankcase breather filter. [Refer to Procedure 003-019 in Section 6.](#)

Automotive with CM875, CM870 and CM570

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

- Fuel-Water Separator - Drain
- Lubricating Oil Level - Check
- Centinel™ - General Information - Check
- Coolant Level - Check
- Fan, Cooling - Check
- Drive Belt - Check
- Air Intake Piping - Check
- Charge Air Piping - Check
- Air Tanks and Reservoirs - Drain
- Crankcase Breather Tube - Check

Maintenance Procedures at 24,000 Kilometers [15,000 Miles], 300 Hours, or 6 Months

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

Maintenance Procedures at 192,000 Kilometers [120,000 Miles], 3000 Hours, or 2 Years⁽⁵⁾

- Belt Tensioner, Automatic - Check
- Overhead Set - Measure
- Engine Brakes - Check
- Exhaust Gas Recirculation (EGR) System Hoses - Check

Maintenance Procedures at 385,000 Kilometers [240,000 Miles], 6000 Hours, or 3 Years

- Vibration Damper, Viscous - Check
- Cooling System - Flush
- Air Compressor Discharge Lines - Check

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

- Turbocharger Air Shutoff Valve Filter - Change

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.

Maintenance Procedures at Daily Interval

- Fuel-Water Separator - Drain
- Lubricating Oil Level - (Centinel™ make-up tank oil level, if equipped) - Check
- Fan, Cooling - Check
- Crankcase Breather Tube - Check
- Air Tanks and Reservoirs - Drain
- Air Cleaner Restriction (if equipped) - Check
- Charge Air Piping - Check
- Engine and Accessories - Check

Maintenance Procedures at 24,000 Kilometers [15,000 Miles], 300 Hours, or 6 Months⁽⁴⁾

- Fuel Filter (Spin-On) - Change
- Lubricating Oil and Filters - Change
- Radiator Pressure Cap - Check
- Coolant Filter - Change
- Supplemental Coolant Additive (SCA) and Antifreeze Concentration - Check⁽³⁾

Maintenance Procedures at 192,000 Kilometers [120,000 Miles], 3000 Hours, or 2 Years⁽²⁾ (5)

- Belt Tensioner, Automatic (if equipped) - Check
- Overhead Set - Measure
- Engine Brakes (if equipped) - Check

Maintenance Procedures at 385,000 Kilometers [240,000 Miles], 6000 Hours, or 3 Years⁽²⁾

- Cooling System - Flush
 - Air Compressor Discharge Lines - Check
1. Follow the manufacturer's recommended maintenance procedures for the starter, alternator, generator, batteries, electrical components, engine brake, exhaust brake, charger air cooler, air compressor, air conditioner compressor, and fan clutch.
 2. The lubricating oil and lubricating oil filter interval can be adjusted based on fuel consumption, gross vehicle weight, and idle time. Reference the Maximum Oil Drain Intervals Tables 2 and 3.
 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.
 4. In this column 15,000 miles is for the severe duty cycle with CH-4 oil.
 5. 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.

Transit Bus

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

- Fuel-Water Separator - Drain
- Lubricating Oil Level - (Centinel™ make-up tank oil level, if equipped) - Check
- Fan, Cooling - Check
- Crankcase Breather Tube - Check
- Air Tanks and Reservoirs - Drain
- Air Cleaner Restriction (if equipped) - Check
- Charge Air Piping - Check
- Engine and Accessories - Check

Maintenance Procedures at 9600 Kilometers [6,000 Miles], 500 Hours, or 3 Months⁽⁴⁾

- Fuel Filter (Spin-On) - Change
- Lubricating Oil and Filters - Change
- Lubricating Oil Filter (Spin-On) - Change
- Radiator Pressure Cap - Check
- Coolant Filter - Change
- Supplemental Coolant Additive (SCA) and Antifreeze Concentration Level - Check⁽³⁾

Maintenance Procedures at 80,000 Kilometers [50,000 Miles], 3000 Hours, or 2 Years^{(2) (5)}

- Belt Tensioner, Automatic (if equipped) - Check
- Overhead Set - Measure
- Engine Brakes (if equipped) - Check

Maintenance Procedures at 4000 Hours⁶

- Crankcase Breather Element (if equipped) - Change

Maintenance Procedures at 161,000 Kilometers [100,000 Miles], 6000 Hours, or 3 Years⁽²⁾

- Cooling System - Flush
- Air Compressor Discharge Lines - Check

Maintenance Procedures at 480,000 Kilometers [300,000 Miles], 6750 Hours⁽⁶⁾

- Aftertreatment Diesel Particulate Filter (if equipped) - Clean
1. Follow the manufacturer's recommended maintenance procedures for the starter, alternator, generator, batteries, electrical components, engine brake, exhaust brake, charge air cooler, air compressor, air conditioner compressor, and fan clutch.
 2. The lubricating oil and lubricating oil filter interval can be adjusted based on a vehicle average mph. Reference Table 3, Maximum Oil Drain Intervals.
 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.
 4. In this column 6,000 miles is for an average mph of 12 to 14 with CH-4 oil.

5. 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.
6. To obtain the mileage interval for the maintenance item, multiply the average vehicle speed by the time interval of the maintenance item. For example, if the average speed is 15 mph, the interval for a 4,000 hour maintenance item would be 4,000 hours x 15 mph = 60,000 miles.

ISM Euro 2

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⁾

- Fuel-Water Separator - Drain
- Lubricating Oil Level - Check
- Coolant Level - Check
- Fan, Cooling - Check
- Crankcase Breather Tube - Check
- Air Tanks and Reservoirs - Drain
- Air Cleaner Restriction Indicator (if equipped) - Check
- Charge-Air Piping - Check
- Engine and Accessories - Check

Maintenance Procedures at 32,000 Kilometers [20,000 Miles], 250 Hours, or 6 Months⁽²⁾

- Fuel Filter (Spin-On) - Change⁽⁴⁾
- Lubricating Oil and Filters - Change⁽²⁾
- Radiator Pressure Cap - Check
- Coolant Filter - Change⁽⁴⁾
- Air Compressor Air Cleaner Element (if equipped) - Change
- Supplemental Coolant Additive (SCA) and Antifreeze Concentration Level - Check⁽³⁾
- Wiring Harness on engine - Check

Maintenance Procedures at 96,000 Kilometers [60,000 Miles], 1500 Hours, or 1 Year⁵

- Belt Tensioner, Automatic (if equipped) - Check
- Overhead Set - Measure
- Engine Brakes (if equipped) - Check
- Engine Steam Cleaning - Clean
- Engine Mounting Nuts - Check
- Radiator Hoses - Check
- Shutterstats and Thermic Fans (if equipped) - Check
- Turbocharger Mounting Nuts - Check
- Water Pump - Check

Maintenance Procedures at 385,000 Kilometers [240,000 Miles], 6000 Hours, or 3 Years

- Air Compressor - Check
 - Cooling System - Flush
 - Vibration Damper, Viscous- Check
 - Fan Hub - Check
 - Turbocharger - Check
1. Follow the manufacturer's recommended maintenance procedures for the starter, alternator, generator, batteries, electrical components, engine brake, exhaust brake, charger-air cooler, air compressor, air conditioner compressor, and fan clutch.
 2. The lubricating oil and lubricating oil filter interval can be adjusted based on oil type, fuel consumption and gross vehicle weight. Reference the Maximum Oil Drain Intervals Table 8 and 9.
 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.
 4. The fuel filter and coolant filter interval can be adjusted to align with the lubricating oil and lubricating oil filter interval.
 5. 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.

ISM Euro 3

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⁾

- Fuel-Water Separator - Drain
- Lubricating Oil Level - Check
- Fan, Cooling - Check
- Crankcase Breather Tube - Check
- Air Tanks and Reservoirs - Drain
- Air Cleaner Restriction Indicator (if equipped) - Check
- Charge Air Piping - Check
- Engine and Accessories - Check

Maintenance Procedures at 32,000 Kilometers [20,000 Miles], 250 Hours, or 6 Months⁽²⁾

- Fuel Filter (Spin-On) - Change⁽⁴⁾
- Lubricating Oil and Filter- Change⁽²⁾
- Radiator Pressure Cap - Check
- Coolant Filter - Change⁽⁴⁾
- Supplemental Coolant Additive (SCA) and Antifreeze Concentration Level - Check ⁽³⁾

Maintenance Procedures at 96,000 Kilometers [60,000 Miles], 1500 Hours, or 1 Year⁵

- Belt Tensioner, Automatic (if equipped) - Check
- Engine Brakes (if equipped) - Check
- Overhead Set - Measure

Maintenance Procedures at 385,000 Kilometers [240,000 Miles], 6000 Hours, or 3 Years

- Cooling System - Check
 - Air Compressor Discharge Lines - Check
1. Follow the manufacturer's recommended maintenance procedures for the starter, alternator, generator, batteries, electrical components, engine brake, exhaust brake, charger-air cooler, air compressor, air conditioner compressor, and fan clutch.
 2. The lubricating oil and lubricating oil filter interval can be adjusted based on oil type, fuel consumption, gross vehicle weight for automotive applications and vehicles idle time/average mph for bus applications. Reference the Maximum Oil Drain Intervals Table 6 and 7.
 3. Test the SCA concentration level every 6 months unless concentration is over three units; then check at every oil drain interval until concentration is below three units.
 4. The fuel filter and coolant filter interval can be adjusted to align with the lubricating oil and lubricating oil filter interval.
 5. 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 CM876

Is your vehicle one of those below?

- Linehaul truck
- Coach bus
- Equipment that accumulates 8,000 miles a month or more.

If yes, select the correct oil drain interval from Table 1, based upon engine duty-cycle and oil type used.

Maximum Oil Drain Intervals

- Follow oil drain interval "severe" if your vehicle operates under either of the conditions listed in interval "severe".
- Follow oil drain interval "Normal", if your vehicle operates under either of the conditions listed in interval "normal" and does **not** meet any of the conditions listed in interval "severe".
- Follow oil drain interval "light", if your vehicle operates under both of the conditions listed in interval "light" and does **not** meet any of the conditions listed in interval "severe" or interval "normal".

Table 1: Engines With CM876 Oil Drain Interval by Severity of Service

Table 1: Engine Oil Drain Interval by Severity of Service			
Oil Classification	Severe < 3.0 km/liter [7.0 mpg] or > 3.0 km/liter [7.0 mpg]	Normal 2.6 km/liter [6.0 mpg] to 3.0 km/liter [7.0 mpg]	Light > 3.0 km/liter [7.0 mpg]
CES 20081 ⁽¹⁾	24,000 km [15,000 mi]	40,000 km [25,000 mi]	56,500 km [35,000 mi]
CES 20078 ⁽¹⁾	32,000 km [20,000 mi]	48,500 km [30,000 mi]	64,000 km [40,000 mi]

Notes:

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 the Cummins®/Fleetguard® oil filter part number.

If no, reference Table 2 for the correct oil drain interval for RV, Refuse, Mixer, Dump, Delivery, Logging, Fire Truck or Crane vehicle applications. Reference Table 3, for maximum oil drain intervals by average mph for transit bus.

Table 2: Non-Linehaul Engines with CM876 Oil Drain Interval				
Oil Classification	Kilometers	Miles	Hours	Months
CES 20081 ¹	24,000	15,000	400	6*
CES 20078 ¹	32,000	20,000	500	6*

NOTE: * The RV interval is 12 months.

Table 3: Maximum Oil Drain Intervals by Average mph for Transit Bus			
Average km/h [mph]	CES 20081 Engine Oil (1)	CES 20078 Engine Oil (1)	Acceptable Oil Filter ^{2, 3}
26 to 29 [16 to 18]	15,000 [9500]	15,000 [9500]	LF9001
23 to 26 [14 to 16]	13,500 [8500]	13,500 [8500]	LF9001
19 to 23 [12 to 14]	11,000 [7000]	11,000 [7000]	LF9001
16 to 19 [10 to 12]	9500 [6000]	9500 [6000]	LF9001
12 to 16 [8 to 10]	8000 [5000]	8000 [5000]	LF9001
10 to 12 [6 to 8]	5500 [3500]	5500 [3500]	LF9001
6 to 10 [4 to 6]	4000 [2500]	4000 [2500]	LF9001

Table 3: Maximum Oil Drain Intervals by Average mph for Transit Bus**Notes:**

1. Valvoline™ Premium Blue™ and Premium Blue Extreme™ meets CES 20078 and CES 20081 standards.
2. Cummins Inc. requires a lubricating oil filter be used that meets Cummins® Source Approved Method 10,765.
3. Lubricating oil filter LF9001, Part Number 3406809, meet Cummins® Source Approved Method 10,765.

Automotive with CM875, CM870 and CM570

Is your vehicle one of those below?

- Linehaul Truck
- Coach Bus
- Equipment that accumulates 8,000 miles a month or more.

If YES, select the correct oil drain interval from Table 1 based on engine duty cycle and oil type used.

Maximum Oil Drain Intervals

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

Table 1: EGR Engines Oil Drain Interval by Severity of Service

Oil Classification	Severe < 2.6 km/liter [6.0 mpg] > 80,000 lb GVW	Normal 2.6 km/liter [6.0 mpg] to 3.0 km/liter [7.0 mpg] 70,000 to 80,000 lb GVW	Light > 3.0 km/liter [7.0 mpg] < 70,000 lb GVW
CES 20078 and CES 20081 ^{1,2,3}	24,000 km [15,000 mi]	40,000 km [25,000 mi]	56,500 km [35,000 mi]
CES 20076	16,000 km [10,000 mi]	32,00 km [20,000 mi]	48,500 km [30,000 mi]

Table 1: EGR Engines Oil Drain Interval by Severity of Service			
Oil Classification	Severe < 2.6 km/liter [6.0 mpg] > 80,000 lb GVW	Normal 2.6 km/liter [6.0 mpg] to 3.0 km/liter [7.0 mpg] 70,000 to 80,000 lb GVW	Light > 3.0 km/liter [7.0 mpg] < 70,000 lb GVW

Notes:

1. API CI-4 can be used as an alternative to CES 20078.
2. If the engine is equipped with Centinel™, lubricating oil with API grade CI-4 or oil that conforms to CES 20078 is required to maintain engine performance and durability. Oil drain intervals using Centinel™ will be 500,000 miles with oil filter change 75,000 miles. The use of high quality Fleetguard® filter is mandatory. Refer to Procedure 018-024 in Section V for the Cummins®/Fleetguard® oil filter part number.
3. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

If NO, reference Table 2 for the correct oil drain interval for RV, Refuse, Mixer, Dump, Delivery, Logging, Fire Truck or Crane vehicle applications. Reference Table 3, for Maximum Oil Drain Intervals by Average mph for Transit Bus.

Table 2: Non-Linehaul EGR Engines Oil Drain Interval				
Oil Classification	Kilometers	Miles	Hours	Months
CES 20078 AND ces 20081 ^{1,2}	24,000	15,000	400	6*
CES 20076	8,000	5000	200	6*

1. API CI-4 can be used as an alternative to CES 20078.
2. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

NOTE: * The RV interval is 12 months.

Table 3: Maximum Oil Drain Intervals by Average mph for Transit Bus				
	CG-4 Engine Oil	CH-4 or CES 20071 Engine Oil	CES 20078(1), CES 20081(4), and CES 20076(1) Engine Oil	Acceptable Oil Filter(2)
Average km/h [mph]	km [mi]	km [mi]	km [mi]	
26 to 29 [16 to 18]	6,500 [4000]	13,000 [8000]	15,000 [9,500]	LF9001(3)
23 to 26 [14 to 16]	5,500 [3,500]	11,000 [7000]	13,500 [8,500]	LF9001(3)
19 to 23 [12 to 14]	5,000 [3,000]	9,500 [6,000]	11,000 [7,000]	LF9001(3)

Table 3: Maximum Oil Drain Intervals by Average mph for Transit Bus

	CG-4 Engine Oil	CH-4 or CES 20071 Engine Oil	CES 20078(1), CES 20081(4), and CES 20076(1) Engine Oil	Acceptable Oil Filter(2)
Average km/h [mph]	km [mi]	km [mi]	km [mi]	
16 to 19 [10 to 12]	4,000 [2,500]	8,000 [5,000]	9,500 [6,000]	LF9001(3)
12 to 16 [8 to 10]	3,000 [2,000]	6,500 [4,000]	8,000 [5,000]	LF9001(3)
10 to 12 [6 to 8]	2,400 [1,500]	5,000 [3,000]	5,500 [3,500]	LF9001(3)
6 to 10 [4 to 6]	1,500 [1,000]	3,000 [2,000]	4,000 [2,500]	LF9001(3)

Notes:

1. Valvoline™ Premium Blue™ and Premium Blue Extreme™ meets CES 20078 standards.
2. Cummins Inc. requires a lubricating oil filter be used that meets Cummins® Source Approved Method 10,765.
3. Lubricating oil filter LF9001, Part Number 3406809, meet Cummins® Source Approved Method 10,765.
4. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

Automotive with CM570

Is your vehicle one of those below?

- Linehaul Truck
- Coach Bus
- Equipment that accumulates 8,000 miles a month or more.

If YES, select the correct oil drain interval from Table 1 or 2 based on fuel sulfur content and engine turbocharger, engine duty cycle, and oil type used.

Maximum Oil Drain Intervals

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

If NO, reference Table 3 or 4.

Table 1: Non-Wastegate Turbocharged Engines Oil Drain Interval by Severity of Service km [mi]

Oil Class	Severe	Normal	Light	Acceptable Oil Filters ⁽⁴⁾
Fuel burned-km/liter [mpg] gross vehicle weight	< 2.6 [6.0] 80,000 lb	2.6 [6.0] to 3.0 [7.0] 70,000 to 80,000 lb	> 3.0 [7.0] < 70,000 lb	
API CG-4	12,000 [7500]	24,000 [15000]	32,000 [20,000]	LF9001 ⁽⁵⁾
CES 20071/CH-4 ⁽¹⁾	24,000 [15,000]	48,500 [30,000]	64,500 [40,000]	LF9001 ⁽⁵⁾
CES 20076 ⁽²⁾ ⁽³⁾ , CES 20078 and CES 20081 ⁽⁶⁾	32,000 [20,000]	56,500 [35,000]	72,500 [45,000]	LF9001 ⁽⁵⁾

Notes:

1. API CH-4 can be used as an alternative to CES 20071.
2. If the engine is equipped with Centinel™, lubricating oil with API grade CES 20076 is required to maintain engine performance and durability. Oil drain intervals using Centinel™ will be 525,000 miles with oil filter change at 75,000 miles. The use of a high-quality filter is mandatory. Procedure [Refer to Procedure Refer to 018-024 in Section V for the Cummins®/Fleetguard® oil filter part number.](#)
3. Valvoline™ Premium Blue™ and Premium Blue Extreme™ meets CES 20078 standards.
4. Cummins Inc. requires a lubricating oil filter be used that meets Cummins® Source Approval Method 10,765.
5. Lubricating oil filter LF9001, Part Number 3406809, and LF9031, Part Number 4906633, meet Cummins® Source Approved Method 10,765.
6. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If the sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

Table 2: Wastegate Turbocharged Engines Oil Drain Interval by Severity of Service km [mi]

Oil Class	Severe	Normal	Light	Acceptable Oil Filters ⁽⁴⁾
Fuel burned-km/liter [mpg] gross vehicle weight	< 2.6 [6.0] > 80,000 lb	2.6 [6.0] to 3.0 [7.0] 70,000 to 80,000 lb	> 3.0 [7.0] < 70,000 lb	
API CG-4	8,000 [5000]	13,000 [8000]	19500 [12,000]	LF9001 ⁽⁵⁾
CES 20071/CH-4 ⁽¹⁾	16,000 [10,000]	24,000 [15,000]	40,000 [25,000]	LF9001 ⁽⁵⁾
CES 20076 ⁽²⁾ ⁽³⁾ and CES 20078 and CES 20081 ⁶	20,000 [12,500]	32,000 [20,000]	48,500 [30,000]	LF9001 ⁽⁵⁾

Table 2: Wastegate Turbocharged Engines Oil Drain Interval by Severity of Service km [mi]

Oil Class	Severe	Normal	Light	Acceptable Oil Filters ⁽⁴⁾
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Notes:

1. API CH-4 can be used as an alternative to CES 20071.
2. If the engine is equipped with Centinel™, lubricating oil with API grade CES 20076 is required to maintain engine performance and durability. Oil drain intervals using Centinel™ will be 525,000 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 the Cummins®/Fleetguard® oil filter part number.
3. Valvoline™ Premium Blue™ and Premium Blue Extreme™ meets CES 20078 standards.
4. Cummins Inc. requires a lubricating oil filter be used that meets Cummins® Source Approval Method 10,765.
5. Lubricating oil filter LF9001, Part Number 3406809, and LF9031, Part Number 4906633, meet Cummins® Source Approved Method 10,765.
6. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If the sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

If NO, select the correct drain interval from Table 3 or 4 based on engine horsepower rating and the oil type used.

Table 3: Non-Linehaul Oil Drain Interval Non - Wastegate Turbocharged Engines

Oil Class	Kilometer	Miles	Hours	Months
CG-4	6,000	3,500	150	6
CES 20071/CH-4 ⁽¹⁾	11,500	7,000	300	6
CES 20076 ⁽²⁾ , CES 20078 and CES20081 ³	14,500	9,000	400	6
Wastegate Turbocharger Engines				
Oil Class	Kilometer	Miles	Hours	Months
CG-4	4,000	2,500	100	6
CES 20071/CH-4 ⁽¹⁾	7,000	4,500	200	6
CES 20076 ⁽²⁾ and CES 20078 and CES 20081 ³	11,500	7,000	300	6

Notes:

1. API CH-4 can be used as an alternative to CES 20071.
2. Valvoline™ Premium Blue™ and Premium Blue Extreme™ meets CES 20078 standards.
3. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If the sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.
4. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If the sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

Table 4: Wastegate Turbocharged Engines Oil Drain Interval by Severity of Service km [mi]

Oil Class	Kilometer	Miles	Hours	Months
CG-4	6,000	3,500	150	6
CES 20071/CH-4 ⁽¹⁾	14,500	9,000	300	6
CES 20076 ⁽²⁾ and CES 20078 and CES 20081 ³	19,000	12,000	400	6
Speciality RV and Fire Truck Ratings - 500 hp				
Oil Class	Kilometer	Miles	Hours	Months
CG-4	5,000	3,000	100	6
CES 20071/CH-4 ⁽¹⁾	7,000	4,500	150	6
CES 20076 ⁽²⁾ and CES 20078 and CES 20081 ³	9,500	6,000	200	6

Notes:

1. API CH-4 can be used as an alternative to CES 20071.
2. Valvoline™ Premium Blue™ and Premium Blue Extreme™ meets CES 20078 standards.
3. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If the sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

Transit Bus**Table 1: Maximum Oil Drain Intervals by Average mph for Transit Bus**

	CG-4 Engine Oil	CH-4 or CES 20071 Engine Oil	CES 20078 ⁽¹⁾ , CES 20081 ⁽⁴⁾ and CES 20076 ⁽¹⁾ Engine Oil	Acceptable Oil Filter ⁽²⁾
Average km/h [mi]	km [mi]	km [mi]	km [mi]	
26 to 29 [16 to 18]	6,500 [4,000]	13,000 [8000]	15,000 [9,500]	LF9001 ⁽³⁾
23 to 26 [14 to 16]	5,500 [3,500]	11,000 [7000]	13,500 [8,500]	LF9001 ⁽³⁾
19 to 23 [12 to 14]	5,000 [3,000]	9,500 [6,000]	11,000 [7,000]	LF9001 ⁽³⁾
16 to 19 [10 to 12]	4,000 [2,500]	8,000 [5,000]	9,500 [6,000]	LF9001 ⁽³⁾
12 to 16 [8 to 10]	3,000 [2,000]	6,500 [4,000]	8,000 [5,000]	LF9001 ⁽³⁾
10 to 12 [6 to 8]	2,400 [1,500]	5,000 [3,000]	5,500 [3,500]	LF9001 ⁽³⁾
6 to 10 [4 to 6]	1,500 [1000]	3,000 [2,000]	4,000 [2,500]	LF9001 ⁽³⁾

Table 1: Maximum Oil Drain Intervals by Average mph for Transit Bus

	CG-4 Engine Oil	CH-4 or CES 20071 Engine Oil	CES 20078 ⁽¹⁾ , CES 20081 ⁽⁴⁾ and CES 20076 ⁽¹⁾ Engine Oil	Acceptable Oil Filter ⁽²⁾
Average km/h [mi]	km [mi]	km [mi]	km [mi]	

Notes:

1. Valvoline™ Premium Blue™ and Premium Blue Extreme™ meets CES 20078 standards.
2. Cummins Inc. requires a lubricating oil filter be used that meets Cummins® Source Approved Method 10,765.
3. Lubricating oil filter LF9001, Part Number 3406809, meet Cummins® Source Approved Method 10,765.
4. Engine **must** be operated on ultra-low sulfur diesel (15 ppm sulfur) fuel. If sulfur content of the fuel is greater than 15 ppm the oil change intervals **must** be reduced by 20 percent.

ISM Euro 2

The maximum lubricating oil drain interval for the ISM Euro 2 engine can be determined by carrying out the following procedure.

Cummins Inc. recommends tiered oil drain intervals relative to vehicle duty cycle and quality of lubricant being used.

Step 1. Determine the duty cycle for your vehicle application.

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

Step 2. Determine type (API or ACEA), and quality of oil that your vehicle application is using.

Step 3. Reference Table 8 or 9 for the appropriate oil drain interval, defined by your selection of oil quality and duty cycles.

- Fuel sulfur content to be less than or equal to 0.05 mass percent sulfur. Refer to Fuels for Cummins® Engines, Bulletin 3379001, for recommendations.
- Extending the oil and filter change interval beyond the recommendations will decrease engine life due to factors such as corrosion, deposits and wear.
- Cummins Inc. does **not** currently recommend the use of ACEA E4 or MB 228.5 oil formulations.
- Any oil quality related warranty claims, **must** be accompanied by complete service history details of:

1. Oil type specification and supplier
2. Oil Drain Intervals

3. Injector, valves, and engine brake lash adjustments
4. Oil filter type and supplier

Along with the application duty cycle, prior to any warranty assessment being undertaken.

Table 1: ISM Euro 2 (Except ISM 440) Automotive Engines Oil Drain Interval by Severity of Service.				
Duty Cycle Definition		Severe	Normal	Light
	Kilometers per year fuel consumed mpg fuel consumed l/100 km gross vehicle weight < 120,000 km < 6.5 > 43 > 41 tonnes		= or < 120,000 km 6.5 to 7.5 37.5 to 43 = or < 41 tonnes	> 120,000 km > 0.5 < 37.5 < 38 tonnes
Oil Class	DRAIN INTERVAL whichever comes first	Severe	Normal	Light
ACEA E5 API CH-4/ CES 20071 CES 20072	km hours months Acceptable filter	30,000 400 6 LF9001	50,000 600 6 LF9001	60,000 700 6 LF9001
APICG-4	km hours months Acceptable Filter	25,000 300 6 LF9001	35,000 500 6 LF9001	45,000 600 6 LF9001

Table 2: ISM Euro 2 (ISM440) Automotive Engines Oil Drain Interval by Severity of Service.				
Duty Cycle Definition		Severe	Normal	Light
	Kilometers per year fuel consumed mpg fuel consumed l/100 km gross vehicle weight	< 120,000 km < 6.5 > 43 > 41 tonnes	= or < 120,000 km 6.5 to 7.5 37.5 to 43= or < 41 tonnes	> 120,000 km 0.5 < 37.5 < 38 tonnes
Oil Class	DRAIN INTERVAL whichever comes first	Severe	Normal	Light
ACEA E5 API CH-4/ CES 20071 CES 20072	km months Acceptable filter	16,000 6 LF9001	24,000 6 LF9001	40,000 6 LF9001
API CG-4	km months Acceptable filter	8,000 6 LF9001	13,000 6 LF9001	19,500 6 LF9001

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

Table 3: Aftertreatment Filter Cleaning Intervals			
Oil Classification	Kilometers	Miles	Hours
CES20081	480,000	300,000	6,750
CES20078	360,000	225,000	6,750

ISM Euro 3

The maximum lubricating oil drain interval for the ISMe Euro 3 engine can be determined by carrying out the following procedure.

Step 1. Determine the duty cycle for your vehicle application.

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

Step 2. Determine type (API or ACEA), and the quality of oil that your vehicle application is using.

Step 3. Reference Table 6 or 7 for the appropriate oil drain interval, defined by your selection of oil quality and duty cycles.

	Duty Cycle Definition	Severe	Normal	Light
	Kilometers per year fuel consumed mpg fuel consumed l/100 km gross vehicle weight	< 120,000 km < 7.0 > 40 > 44 tonnes	= or < 120,000 km 7.0 to 8.0 40 to 35 tonnes	> 120,000 km.0 < 35 tonne
Oil Class	Drain Interval whichever comes first	Severe	Normal	Light
ACEA E5 API CH4 CES 20071 CES 20072	km hours months Acceptable Filter	15,000 300 6 LF9001	30,000 600 6 LF9001	45,000 900 6 LF9001
CES 20076 CES 20077 CES 20078 (CI-4)	km hours months Acceptable filter	30,000 600 6 LF9001	45,000 900 6 LF9001	60,000 1,200 6 LF9001

Average speed (km/hr) ⁽¹⁾	29 to 33	24 to 28	19 to 23	14 to 18	10 to 13	6 to 9
Average speed (mph) ⁽¹⁾	18 to 20	15 to 17	12 to 14	9 to 11	6 to 8	4 to 5
Oil Class	Oil Drain Interval (km)					
CES 20072	39,000	32,000	25,000	19,000	13,500	8,000
CES 20077 and CES 20078 (CI-4)	43,000	36,000	28,000	21,000	15,000	9,000

Table 2: ISMe Euro 3 Bus Engines Oil Drain Interval by Average Vehicle Speed**Notes:**

- Idle time **must** be included in determination of average bus speed. It is recommended to divide odometer reading by the hourmeter reading to determine average speed.

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