

# Motorhome Maintenance and Operation

## B6.7™, ISB6.7, ISB5.9, B5.9 Engines (200-360 hp)



### Quick Reference Guide

Maintenance Intervals*	B5.9 Built 1984-1997		ISB5.9 Built 1998-2001		ISB5.9 Built 2002-2006		ISB6.7 and B6.7 Built 2007+	
	time (mo.)	miles	time (mo.)	miles	time (mo.)	miles	time (mo.)	miles
Check Fluid Levels	daily	n/a	daily	n/a	daily	n/a	daily	n/a
Coolant Testing	6	n/a	6	n/a	6	n/a	6	n/a
Oil and Oil Filter	6	6,000	6	15,000	12	15,000	12	15,000
Fuel Filters	6	12,000	6	15,000	12	15,000	12	15,000
Valve Lash Check	48	150,000	48	150,000	48	150,000	48	150,000
Vibration Damper	24	n/a	24	n/a	24	n/a	24	n/a
Crankcase Breather	n/a	n/a	n/a	n/a	n/a	n/a	n/a	75,000
Diesel Particulate Filter	n/a	n/a	n/a	n/a	n/a	n/a	n/a	200,000
DEF Filter	n/a	n/a	n/a	n/a	n/a	n/a	n/a	200,000 †

\*Intervals reflect whichever occurs first in months or miles

† DEF filter began on 2010 built engines

Filter Parts	B5.9 Built 84-97	ISB5.9 Built 98-01	ISB5.9 Built 02-06	ISB6.7 Built 07-09	ISB6.7 Built 10-12	ISB6.7 Built 12-16	B6.7 Built 17+
Lubricating Oil Filter	LF3970	LF3970	LF3970	LF3970	LF3970	LF3970	LF3970
Fuel Filter (Pressure)	FS19608	FS19519	FS19596	FF5632	FF5632	FF63009	FF63009
Fuel Water Separator**	OEM	OEM	OEM	OEM	OEM	OEM	OEM
Crankcase Breather Top* Crankcase Breather Rear	n/a	n/a	n/a	CV52000 CV50601	CV52001 CV50607	CV52001 CV50607	CV52001 CV50607
DEF Dosing Filter	n/a	n/a	n/a	n/a	2880298	2880298	5312532
Oil Recommendation	CK-4 15W40	CK-4 15W40	CK-4 15W40	CK-4 15W40	CK-4 15W40	CK-4 15W40	CK-4 15W40

\*Most B6.7 engines are equipped with a top mounted crankcase breather

\*\* Fuel water separators vary by chassis manufacturer

### Customer Support

- The most up to date and complete information for your engine can be found on QSOL at [quickserve.cummins.com](http://quickserve.cummins.com).
- To find your nearest Cummins authorized location, go to [locator.cummins.com](http://locator.cummins.com) or call 1-800-CUMMINS™ (1-800-286-6467).
- Having the Engine Serial Number available ensures correct information. The Engine Serial Number can be found near the top of the engine.

### Storage

- Store with a full tank of fuel from a high volume fuel retailer to prevent condensation and microbial growth in fuel tank.
- Completing annual maintenance prior to storage will remove corrosive elements in the engine oil and potential microbes in the fuel filter.
- Monthly exercise prolongs engine life. A 30-40 minute drive is best. If driving is not possible, operate the engine until coolant reaches 150 degrees to recharge system batteries, remove condensation, and lubricate internal components.

### Operation

- Engine warm up - operate with light throttle for 3-5 minutes.
- Engine cool down - allow 3-5 minutes before shutting the engine off after full load operation.
- The B6.7 VGT exhaust brake can produce up to 180 braking horsepower. Turn engine exhaust brake off when road conditions are slippery.
- Amber "check engine" lights indicate the need for the driver to check the vehicle before continuing to operate.
- Red "stop engine" lights indicate the need to pull over as soon as it is safely possible. If the lamp is flashing, the engine will shut down within 30 seconds.
- A complete guide to dash lamps related to the engine is contained in Cummins Bulletin 4971518, which can be found on [cummins.com](http://cummins.com).
- Fuel economy can be improved by reducing vehicle speed, keeping tires properly inflated, reducing weight, keeping air conditioning system charged, and keeping the radiator clean.

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#### Cooling System

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- Check coolant level before each trip.
- Coolant should be tested for freeze protection and dilution twice per year. A refractometer (e.g. Fleetguard CC2806) is much more accurate than floating ball hydrometer. Test strips are also available.
- Maintain coolant according to the chassis manufacturer's recommendations. Some coolants require regular addition of Supplemental Coolant Additives. Most coolants require replacement at 5 years of service.
- When having your motorhome serviced, insist on using the coolant that was originally used by the chassis manufacturer or equivalent.
- There are many formulations of coolant. It is ideal to use the coolant formulation that the motorhome was originally filled with. Mixing coolant formulations can result in loss of protection of the engine and other components in the cooling system.
- All coolants used in the B5.9, ISB5.9, ISB6.7, or B6.7 must meet the Cummins CES14603 or CES14439 specification.
- Engine Coolant formulations include:
  - Older traditional Heavy-Duty Coolants, which are typically green in color. These require testing for SCA concentration at least twice per year. 3 way test strips are available from Fleetguard in 4 packs (CC2602A).
  - Fill for Life Coolants (e.g. Fleetcharge) are typically pink in color. These coolants require testing for SCA concentration and adding chemical as needed.
  - Organic Additive Technology Coolants (e.g. Fleetguard Compleat ES OAT, Final Charge, Shell Rotella ELC) can vary in color and may require addition of a chemical extended before the change interval is reached. Ask your chassis manufacturer.
  - Coolant filters may contain chemical additives. Buying "blank" non-chemical filters and using liquid additives if needed is recommended.

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#### Fuel System

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- Purchase fuel from high-volume fuel retailers to avoid issues with water or microbes.
- Engines built since 2002 can use up to B20 biodiesel. Pre-2002 engines can use B5.
- It is best to avoid storing your motorhome with biodiesel.
- Cummins engines are designed to run on commercially available diesel fuel without the need for additives.
- A biocide can help when fuels are prone to contamination (black slime).
- Cummins Bulletin 3379001 on QSOL contains a comprehensive explanation of Fuel Recommendations.

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#### Air System

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- Not maintaining your air system is the most expensive mistake you can make.
- Change air filter based on chassis manufacturer time recommendation or more frequently if operating in dusty conditions.
- The air restriction indicator should not be solely relied upon for air filter replacement.
- Loose or broken clamps, hoses, or piping can lead to dirt entry into the engine, requiring engine overhaul.

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#### Oil System

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Check oil level before each trip.

- The B5.9, ISB5.9, ISB6.7, and B6.7 require two quarts to move the level on the dipstick from add to full.
- For normal engine operation, Cummins recommends the use of a high-quality 15W40 or 10W30 engine oil that meets the requirements of Cummins CES20086 specification (API classification CK-4). API classification FA-4 oils are NOT recommended for motorhomes.
- The use of synthetic oils is allowed but does NOT justify the extension of the oil drain interval.
- Break in period oil changes are not required on Cummins engines.
- Cummins engines are designed to run on commercially available oils without the need for supplemental additives. Cummins does NOT recommend or require supplemental oil additives.
- Oil analysis can be helpful in detecting contaminants but does NOT justify extension of the oil drain interval.

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#### Diesel Exhaust Fluid (DEF)

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- Cummins engines built since 2010 require the use of DEF. DEF equipped engines achieve greater fuel economy.
- DEF is non-toxic, non-polluting, and non-flammable.
- DEF fluid must meet ISO 22241-1 specification.
- For maximum shelf life (18 months) store DEF in a sealed container at temperatures below 78F (26C).
- DEF will freeze at 11F (-12C) but will not degrade when frozen. DEF tanks and lines are designed to accommodate freezing.



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Bulletin 4971286 printed in U.S.A Rev. 12/18  
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