



Quick Reference Guide

Cooling

Routine Maintenance Recommendations

- Check coolant level before every trip
- Check coolant concentration every 15,000 mi. / 6 mo.
- Drain and flush system every 60,000 mi./2 yrs. and refill with heavy-duty coolant.

Always use antifreeze. In addition to freeze protection, antifreeze is essential for overheat and corrosion protection.

Use of supplemental coolant additives (SCA) are not required for the ISB engine.

Definition of Heavy-Duty Coolant

A combination of 50/50 water and low silicate antifreeze (ethylene glycol or propylene glycol are acceptable). Protects to -34°F. Freeze protection decreases above 68% antifreeze. Antifreeze must meet ASTM 04985 (GM6038M) specs.

How to Test Coolant Concentration

Refractometer Fleetguard #C2806 is recommended vs. floating ball due to accuracy.

Water Quality Requirements

Calcium/Magnesium Chloride	Max. 170ppm as CaCO ₃ +MgCO ₃
Sulfur	Max. 40ppm as Cl
	Max. 100ppm as S04

A conservative approach to cooling system maintenance would include an analysis of your home-base tap water supply. Your Cummins distributor can provide this service as well as sample bottles and other coolant test devices. Consider using pre-formulated antifreeze when on the road or when water quality is unknown. The use of distilled water is also acceptable.

Fully Formulated Coolant

Fully formulate coolant, such as Fleetguard Complete, is recommended by Cummins and offers a vehicle owner the convenience of a pre-mixed antifreeze solution containing high quality water and antifreeze.

Reference Material

ISB - with Common Rail Fuel System

Owners Manual	Bulletin #4021355
Operation and Maintenance	Bulletin #3666496

ISB - with VP44 Fuel System

Owners Manual	Bulletin #4021336
Operation and Maintenance	Bulletin #3666170

Contact Numbers

Power Assist	1-888-POWER RV (1-888-769-3778)
Cummins	1-800-DIESELS (1-800-343-7357)

Lubricating Oil

Routine Maintenance Recommendations

Check oil level daily

Oil Drain Interval	Fleetguard Filter
15,000 Miles / 1year	LF 3729

Replace oil filter at EVERY oil drain interval.

Multigrade vs. Straight Weight

Recommend high quality 15W40 oil API CI/SK. Why multigrade?

- Reduced deposit formation.
- Improved cranking and time-to-block oil pressure in low ambient temperatures.
- Improved lubrication during high temperature operation.
- 5K rating required for lubrication of sliding tappets.

Synthetic Oils

May be used in ISB engine provided they meet performance and chemical requirements. Should not be used in a new engine until the first oil change interval mileage is reached. Use of synthetic oil does NOT justify extended oil drain intervals.

Recommended for use in ambient temperatures consistently below -13°F (-25°C) for improved engine cranking and flowability.

Engine Break-in Oils

Special break-in oils should not be used.

Supplemental Oil Additives

Supplemental oil additives such as friction-reducers and graphitizers should not be used unless the oil supplier can provide evidence of satisfactory performance. If there is any doubt about suitability of an oil, consult the oil manufacturer for a definitive recommendation, or data to establish that the oil has performed satisfactorily in Cummins engines.

Oil Analysis

Oil analysis, as a method to extend drain intervals, is NOT recommended. Different methods of measuring soot, lack of correlation among testing labs, and differing driving patterns and idle time are the basis of right recommendation.

Ether / Cold Start Up

Ether MUST NOT be used for ISB engines. The ISB comes equipped from the factory with an integrated grid heater for cold starting.

In ambient conditions below 0°F, it is recommended to plug in the engine block heater for easier engine starting and to reduce the time for engine warm up. Keep in mind that this only warms the coolant. The rest of the vehicle's fluids may still be cold.



RV Maintenance and Operation

ISB Cummins 24 Valve Turbo Diesel

Quick Reference Guide

Fuel	Component Maintenance						
<p>Routine Maintenance Recommendations Fuel filter should be changed at EVERY oil change. Part numbers for:</p> <p>For Common Rail Fuel System:</p> <table border="0"> <tr> <td>Type</td> <td>Fleetguard</td> <td>Cummins</td> </tr> <tr> <td>Spin-on Filter</td> <td>FS 19596*</td> <td>3954904*</td> </tr> </table> <p>For VP44 Fuel System:</p> <p>Top Load Cartridge Spin-on Filter</p> <p>*Denotes to transfer water sensor/drain to new filter.</p> <p>Some RV manufacturer's may install a fuel filter on the vehicle before the engine. Please follow the RV/vehicle manufacturer's recommended filter change interval.</p> <p>Low Sulfur Fuel and Fuel Lubricity</p> <p>Fuel additives for lubricity are NOT required by Cummins when using commercially available low sulfur #2 diesel fuel or #1/ #2 winter blend diesel fuels.</p> <p>Biocide Treatment</p> <p>A biocide or fungicide can help when fuels are prone to contamination with bacteria or fungus (black slime).</p> <p>Other Fuel Additives</p> <p>Any fuel additive product should be accompanied with performance data supporting its performance and benefit. Engine failures caused by incorrect fuel are NOT covered under warranty. It is not the policy of Cummins to test, approve or endorse any product not manufactured or sold by Cummins</p>	Type	Fleetguard	Cummins	Spin-on Filter	FS 19596*	3954904*	<p>The following components require periodic maintenance/inspection. Please refer to the appropriate vehicle/engine Operation and Maintenance Manual for details</p> <p>Valve Adjustment Interval</p> <p>No adjustment required. Check at 150,000 miles.</p> <p>Air Filter and Intake System</p> <p>Follow RV manufacturer's recommended filter change interval. Visually inspect intake air components at each oil change for cracks or loose connections. Inspect filter minder daily</p> <p>Air Compressor (if equipped)</p> <p>Charge Air Cooler</p> <p>The long-term integrity of the CAC system is the responsibility of the vehicle and component manufacturers. However, CAC diagnostics can be performed by your Cummins distributor.</p> <p>Vibration Damper</p> <p>Inspection required at 60,000 mi. / 2 yrs. which includes visual inspection for deformation.</p> <p>Fan Idler Pulley, Hub and Belt Tension</p> <p>Inspection required at 30,000 mi. / 1 yr. which includes visual inspection of all components.</p>
Type	Fleetguard	Cummins					
Spin-on Filter	FS 19596*	3954904*					
<hr/> <p>Exhaust Brakes</p> <hr/>	<hr/> <p>Idle Warm-up Cooldown</p> <hr/>						
<p>Exhaust Brakes can not be used on ISB engines with Common Rail Fuel systems. The Variable Geometry Turbo (VGT) takes the place of the exhaust brake and requires no maintenance</p>	<p>Excessive Idle</p> <p>Should be avoided when possible. Results in reduced fuel economy and increased engine wear. An automatic shutdown feature is available. Contact a Cummins distributor for details.</p> <p>Fast Idle</p> <p>ISB engines with the common rail fuel system may automatically increase engine speed under cold ambient conditions to decrease time for engine warm up under idling conditions</p>						
<hr/> <p>Extended Shutdown Start Procedure</p> <hr/>	<p>Engine Warm-up</p> <p>Do not operate at full speed/load until coolant temperature reaches normal operating range. Do not operate above low idle until oil pressure is indicated.</p>						
<p>When starting an engine that has not been operated for more than 30 days:</p> <ol style="list-style-type: none"> 1. Engine oil pressure must be indicated on gauge within 15 seconds after starting. If oil pressure does NOT register within 15 seconds, shut off engine immediately. If oil pressure is not registered after 15 seconds of cranking, follow the Troubleshooting Guidelines listed in the O&M manual for low oil pressure. 2. Idle engine for five minutes before operating under load. 	<p>Engine Cooldown</p> <p>Prior to shutdown, an engine should be idled 3-5 minutes after extended full throttle or high power operation. However, under normal driving conditions, such as exiting a highway, engine operation is generally lighter in nature and thereby, the 3-5 minute cooldown is not necessary.</p>						