

## May Edition of Natural Gas Engine Tech Talk

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### This Month's Tech Talk Tips

#### **WARNING: Engine Misfire Warning Lamp and Engine Power Derate Cause Found**

Engineering has recently investigated several customer reports of engine misfire fault lamps events. After lengthy investigations, the aftermarket replacement sensor installed has been determined to be the root cause for this **unscheduled service event**. Faulty sensors will lead to misfire fault codes that result in a catalyst protection event or engine power reduction mode even though the engine was otherwise running fine.

Please be advised, using non-Cummins components replacement parts can and often do result in poor engine performance and efficiency.

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#### **CHANGE: Natural Gas Engine Oil Spec CES 20085 NOW OBSOLETE**

A quick reminder that as of January 2020, Cummins has obsoleted the CES 20085 oil specification and no longer recommends using it in Cummins natural gas engines.

**We encourage fleets to promptly switch to an engine oil certified to meet the **CES 20092** specification.**

As previously communicated, Cummins has released a new natural gas engine oil specification for Cummins mid-range and heavy-duty natural gas engines. The new specification—Cummins Engineering Standard (CES) 20092—provides significantly improved oxidation and thermal stability compared to previous natural gas oils.

With the use of CES 20092 compliant oils, such as Valvoline™ Premium Blue One Solution™, Cummins has increased its recommended oil drain intervals for the **Cummins ISX12 G, ISX12N, ISL G, L9N, ISB6.7G, and B6.7N** natural gas engines.

Recommended oil drain intervals with CES 20092 engine oil:

Engine	ODI (hours)
ISB6.7 G / B6.7N	750
ISL G / L9N	1000
ISX12 G / ISX12N	1000

Note: Cummins Lean burn legacy engines should continue to use CES 20074 oils until further notice.

**REMINDER: Eaton Transmission Shift Quality Improvement Software Now Available**

**Product:** The ISX12G/ISX12N coupled to the UltraShift Plus/Advantage 10 Speed Transmissions.

Drivers may experience shifting issues with the UltraShift *PLUS* and Fuller Advantage Automated transmission coupled with Cummins ISX12G or ISX12N engine. Complaints included one or a combination of the following:

- Intermittent poor acceleration
- Harsh or extended shifts
- Engine lugging to near stall condition during launch
- Stuck in gear (fault code 74)
- Poor low speed maneuverability in “R”

To address these complaints, both Cummins and Eaton released new engine and transmission software and calibrations. If one or more of these have been experienced, updating calibrations in **both** the engine and transmission should address the complaint if there are no underlying mechanical causes for the poor performance.

To get these improvements you will need:

- ISX12 G Engine Calibration released after July 1<sup>st</sup> 2019
- Eaton transmission software 5570055 or greater
- Verify the Eaton configuration is set up appropriately to match either the ISX12G or ISX12N engine.

Additional information on how to get the latest calibration can be obtained by calling the customer support centers for Cummins (1-800-CUMMINS) and Eaton (1-800-826-4357)

Linked here are the Service bulletins from both Cummins and Eaton:

<https://quickserve.cummins.com/qs3/pubsys2/xml/en/tsb/2019/tsb190188.html>

<https://www.eaton.com/ecm/groups/public/@pub/@eaton/@roadranger/documents/content/taib0879en-us.pdf>

## **Technical Resources:**

**Jason Bauer’s Maintenance Tip Videos – Click Links Below**

[Maintenance Intervals](#)

[Spark Plug Maintenance](#)

[Natural Gas Engine Oil](#)

[Tips for Success](#)

[Ignition Coil Maintenance](#)

[Fuel Filter Maintenance](#)

**Minimum methane number requirement for Cummins Natural Gas Engines:**

C Gas Plus, B Gas Plus, and L Gas Plus	65
ISL G, ISX12 G, ISB6.7 G, and all 2018 engines	75

## Fuel Quality Calculator:

<https://www.cumminswestport.com/fuel-quality-calculator>

## Recommended Maximum GVW for Best Performance & Efficiency:

B6.7N	33,000lbs
L9N	66,000lbs
ISX12N	80,000lbs

ISB6.7 G & B6.7N Maintenance Intervals	
	Hours
Oil & Filter* - CES 20092	750
Spark Plugs	750
Fuel Filter	1,000
Valve Adjustment	1,500
Crankcase Breather	2,000
Ignition Coil Extension	5,000

ISB6.7 G & B6.7N Maintenance Part Numbers		
Component	Cummins Part #	Fleetguard Part #
Oil Filter	3937736	LF3970
Fuel Filter	3607140	NG5900
Crankcase Filter	5288839	x
Spark Plug Kit**	4376564	x
Ignition Coil Extension	5402163	x

\*\*Kit includes spark plug and pregreased boot

ISL G & L9N Maintenance Intervals	
	Hours
Oil & Filter* - CES 20092	1,000
Coolant Filter	500
Fuel Filter	1,000
Valve Adjustment	1,000
Spark Plugs	1,500
Crankcase Breather Filter - L9N	2,000
Standard Coolant	2,000
Ignition Coil Extension	10,000

ISL G & L9N Maintenance Part Numbers		
Component	Cummins Part #	Fleetguard Part #
Oil Filter	3401544	LF9009
Fuel Filter	3607140	NG5900
Crankcase Filter*	5288839	x
Spark Plug Kit**	5473009	x
Ignition Coil Extension	5265337	x

\*If equipped

\*\*Kit includes spark plug and pregreased boot

ISX12 G & ISX12 N Maintenance Intervals	
	Hours
Oil & Filter* - CES 20092	1,000
Spark Plugs	1,000
Coolant Filter	1,500
Standard Coolant	6,000
Valve Adjustment	1,000 / 3,000
Ignition Coil Extension	10,000
Crankcase Breather Filter - ISX12N	10,000

ISX12 G & ISX12 N Maintenance Part Numbers		
Component	Cummins Part #	Fleetguard Part #
Oil Filter	4367100	LF14000NN
Fuel Filter*	3607140	NG5900
Crankcase Filter*	4389517	CV53009
Spark Plug Kit**	4309391	x
Ignition Coil Extension	4387015	x

\*If equipped

\*\*Kit includes spark plug and pregreased boot

\*Per Cummins QSOL

## CES 20092 Oil Provider Recommendations

Company Name	Product Name	Vis Grade
Valvoline	Premium Blue One Solution Gen2	10W-30
Valvoline	Premium Blue One Solution Gen2	15W-40
Valvoline	Premium Blue 9200 - One Solution 10W-30	10W-30
Valvoline	Premium Blue 9200 - One Solution 15W-40	15W-40

## Alternatives

Company Name	Product Name	Vis Grade
Advanced Lubrication Specialties, Inc.	Advantage Ultra Premium Plus 92 SAE 15W-40	15W-40
Advanced Lubrication Specialties, Inc.	Gibraltar Ultra 92 NCEO	15W-40
Advanced Lubrication Specialties, Inc.	Sunoco Super C-3 Gold	15W-40
Association of Independent Oil Distributors	Purus TFO Synthetic Blend CK-4/SN	15W-40
Association of Independent Oil Distributors	Purus TFO Synthetic Blend CK-4/SN	10W-30
Castrol Ltd.	Castrol Duratec ES 15W-40	15W-40
Castrol Ltd.	Castrol Vecton Long Drain NG 15W-40	15W-40
Chevron Products Company	Delo 400 SNG	15W-40
Chevron Products Company	Delo 400 SNG-MF	15W-40
CITGO Petroleum Corporation	Citgard® CNG/LNG Engine Oil 10W-30	10W-30
CITGO Petroleum Corporation	Citgard® CNG/LNG Engine Oil 15W-40	15W-40
D-A Lubricant Company, Inc.	Reliant X-92 SAE 15W-40	15W-40
ExxonMobil	Mobil Delvac Modern 10W-30 CNG/LNG	10W-30
ExxonMobil	Mobil Delvac Modern 15W-40 CNG/LNG	15W-40
Gulf Oil International Ltd.	Gulfo Fleet Premium 15W-40	15W-40
Petro-Canada Lubricants Inc	Duron GEO LD 10W-30	10W-30
Petro-Canada Lubricants Inc	Duron GEO LD 15W-40	15W-40
Phillips 66 Company	Kendall Super-D NG 15W-40	15W-40
Phillips 66 Company	Phillips 66 Guardol NG	15W-40
Safety-Kleen Systems Inc., dba Kleen Performance	EcoPower 15W-40 NGP	
Safety-Kleen Systems Inc., dba Kleen Performance	Performance Plus 15W-40	
Safety-Kleen Systems Inc., dba Kleen Performance	Performance Plus 15W-40 NGP	15W-40
Safety-Kleen Systems Inc., dba Kleen Performance	ProProtect 15W-40	15W-40
Safety-Kleen Systems Inc., dba Kleen Performance	ProProtect 15W-40 NGP	15W-40
Shell	Shell Rimula R5 NG 15W-40	15W-40
Shell	Shell Rotella T4 NG Plus 15W-40	15W-40
SINOPEC LUBRICANT CO. LTD.	Sinopec Tulux G600 CNG/LNG/LPG 15W-40	15W-40
TongYi Petroleum Chemical Co.	TongYi Long Range Gas Engine Oil LPG/CNG	10W-30
TongYi Petroleum Chemical Co.	TongYi Long Range Gas Engine Oil LPG/CNG	15W-40
TongYi Petroleum Chemical Co.	TongYi Long Range Gas Engine Oil LPG/CNG/LNG 15W-40	15W-40
TOTAL LUBRIFIANTS	Total Rubia Gas 9M 15W-40	15W-40
TOTAL LUBRIFIANTS	Total Rubia Gas 9M FE 10W-30	10W-30

[https://quickserve.cummins.com/qs3/qsol/service/serviceproducts/oil\\_registration\\_20092.html](https://quickserve.cummins.com/qs3/qsol/service/serviceproducts/oil_registration_20092.html)