

## July Edition of Natural Gas Engine Tech Talk

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### New This Month:

## **New Severe Duty Cycle Maintenance Interval for ISX12G and ISX12N engines**

Cummins recently provided guidance on a new Severe Duty maintenance interval for ISX12G and ISX12N engines. This new maintenance interval is specifically focused on the spark plug replacement and ignition coil inspection.

Vehicle Duty Cycle	Hours	Months
Normal Duty Cycle	1000	12
Severe Duty Cycle	750	12

To determine the maximum recommended spark plug change interval, first determine your duty type below:

#### **Severe Duty:**

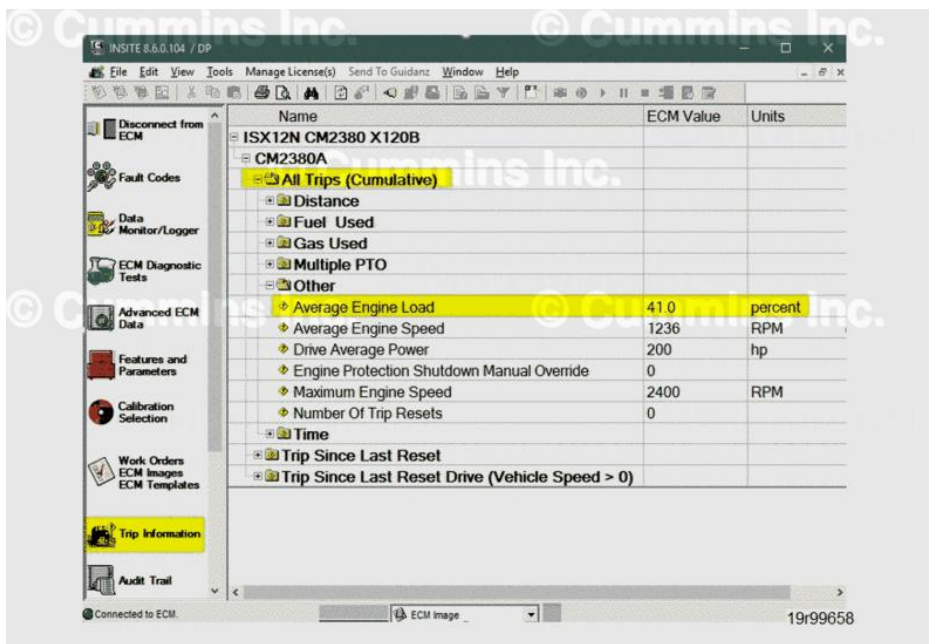
- Average Engine Load is **greater than 35 percent**

#### **Normal Duty:**

- Average Engine Load is **35 percent or less**

Average Engine Load may be obtained by using the recommended Cummins electronic service tool or equivalent.

Average Engine Load is displayed under “Trip Information”, “Other.”



More information on this new duty cycle definition can be found on **QuickServe Online** [here](#).

## **This Month's Reminders:**

### **Misfire**

This month we will dive into engine misfire or what can cause a misfire fault lamp. Misfire is when the expected combustion event during the power stroke does not occur. Misfire fault codes log when the Engine Control Module (ECM) senses this lack of combustion event. In a spark ignited engine, four elements are needed for combustion to occur: Air, Fuel, Compression, and Spark.

**The most common cause for misfire is ignition component failures or reduced performance.** When the ignition system performance is reduced or fails to produce a spark, combustion will not occur. This can be as simple as a worn out, damaged, or incorrect spark plug. Less common, it could be a damaged coil extension or failing/failed ignition coil.

#### **Remember:**

- a. Ignition coils are expected to last 8,000 - 10,000 hours of operation.
- b. Protect for ignition system related misfire, change spark plugs on time
- c. Use genuine Cummins spark plugs to ensure Cummins warranty protection remains in force and your engine maintains CARB and EPA emission certification.

**Low fuel / fuel pressure can cause engine misfire to occur.** When this occurs, the ECM attempts to protect the engine by derating. Ensure your engines have the latest ECM calibration, ample fuel, proper fuel pressure and, if equipped, the fuel filters are drained daily.

**Low in-cylinder compression can lead to misfire fault lamps.** Several possible causes include in-cylinder compression resulting from something as simple as incorrectly adjusted valve lash, a loose spark plug or a compromised cylinder.

**Less likely is insufficient air leading to a misfire lamp.** Airflow restrictions may lead to low power and air flow related fault codes.

Finally, I would like to hear from you. If you are having a technical issue with your natural gas engines or you have a question about your natural gas engines, send me an email at [jason.p.bauer@cummins.com](mailto:jason.p.bauer@cummins.com) or give me a call at (812) 447-0516.

## **Technical Resources:**

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

[Maintenance Intervals](#)

[Natural Gas Engine Oil](#)

[Ignition Coil Maintenance](#)

[Fuel Filter Maintenance](#)

[Spark Plug Maintenance](#)

[Tips for Success](#)

**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

**GHG Emissions Calculator:**

<https://www.cumminswestport.com/greenhouse-gas-calculator>

**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
Conventional Coolant Replacement	1,500
Hybrid Coolant Replacement	4,000
OAT Coolant Replacement	6,000
Spark Plugs	750
Fuel Filter	1,000
Valve Adjustment	1,500
Crankcase Breather	2,000
Ignition Coil Extension	5,000

ISL G & L9N Maintenance Intervals	
	Hours
Oil & Filter* - CES 20092	1,000
Standard Coolant Filter	500
Extended Service Interval Filter	4,000
Conventional Coolant Replacement	1,500
Hybrid Coolant Replacement	4,000
OAT Coolant Replacement	6,000
Fuel Filter	1,000
Valve Adjustment	1,000 / 2,000
Spark Plugs	1,500
Crankcase Breather Filter - L9N	2,000
Standard Coolant	2,000
Ignition Coil Extension	10,000

ISX12 G & ISX12 N Maintenance Intervals	
	Hours
Oil & Filter* - CES 20092	1,000
Spark Plugs	1,000
Standard Coolant Filter	500
Extended Service Interval Filter	4,000
Conventional Coolant Replacement	1,500
Hybrid Coolant Replacement	4,000
OAT Coolant Replacement	6,000
Valve Adjustment	1,000 / 3,000
Ignition Coil Extension	10,000
Crankcase Breather Filter - ISX12N	10,000

ISB6.7 G & B6.7N Maintenance Part Numbers		
Component	Cummins Part #	Fleetguard Part #
Oil Filter	4367100	LF14000NN
Fuel Filter	3607140	NG5900
Crankcase Filter	5288839	
Spark Plug Kit**	4376564	
Ignition Coil Extension	5402163	

\*\*Kit includes spark plug and pregreased boot

ISL G & L9N Maintenance Part Numbers		
Component	Cummins Part #	Fleetguard Part #
Oil Filter	4367100	LF14000NN
Fuel Filter	3607140	NG5900
Crankcase Filter*	5288839	
Spark Plug Kit**	5473009	
Ignition Coil Extension	5265337	

\* If Equipped

\*\*Kit includes spark plug and pregreased boot

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	
Ignition Coil Extension	4387015	

\*If Equipped

\*\*Kit includes spark plug and pregreased boot

## **CES 20092 Oil Provider Recommendations**

For the latest list of recommended oil providers click [here](#).