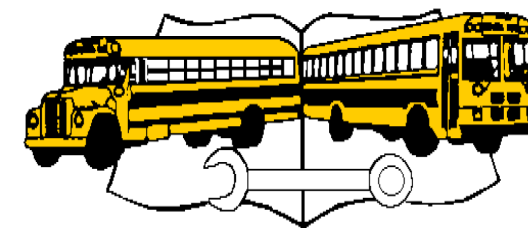


OSBMA School Bus Technical Update

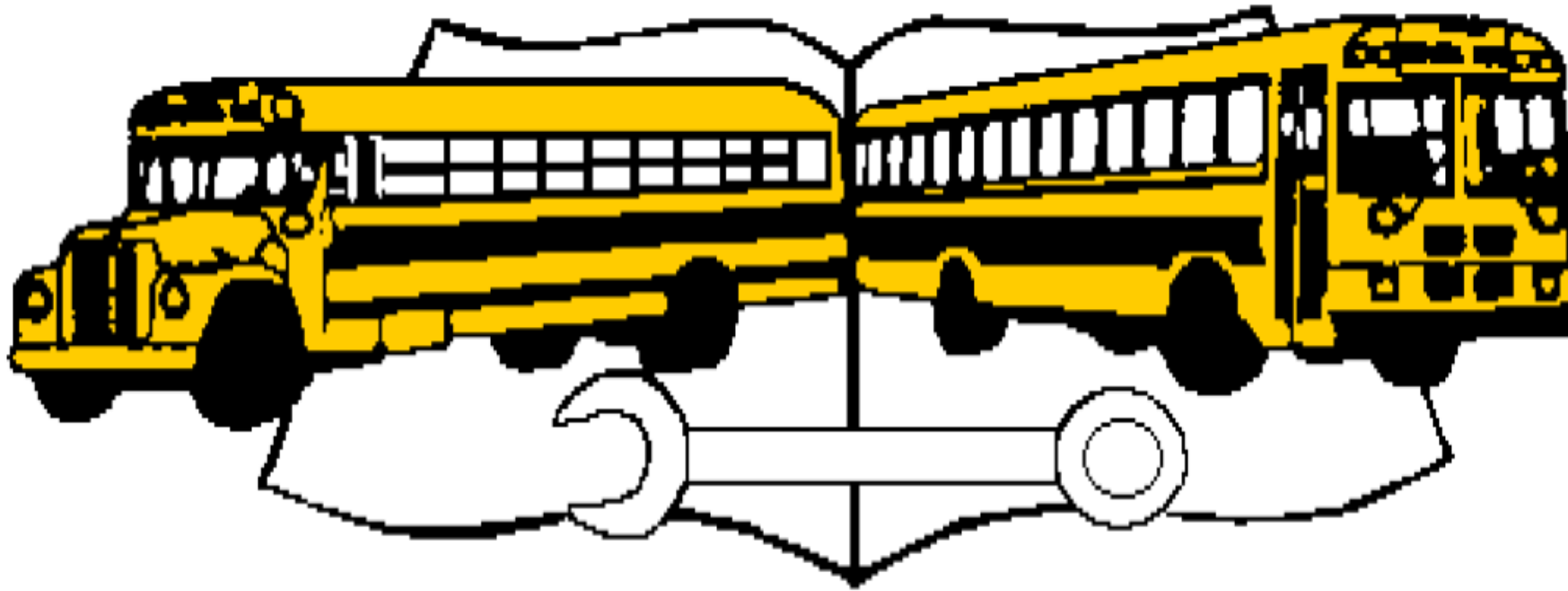
Jack Szalka – Technical Support Manager - Bus

Dave Dickerson – Account Executive – Bus

October 21 2020



OSBMA



Thank you to the [Ohio School Bus Mechanics Association](#) for coordinating this session !

Questions



This is your opportunity to get answers !

PLEASE ask questions !

Type questions in the chat, or unmute - feel free to ask at anytime!

Contact Information

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Jack Szalka – Technical Support Manager - 586-405-3744 jack.h.szalka@cummins.com

Agenda

B6.7 Model Year 2021

Campaign – Temporary Repair Practices (TRP) Update

Quick Overview/Review Regeneration

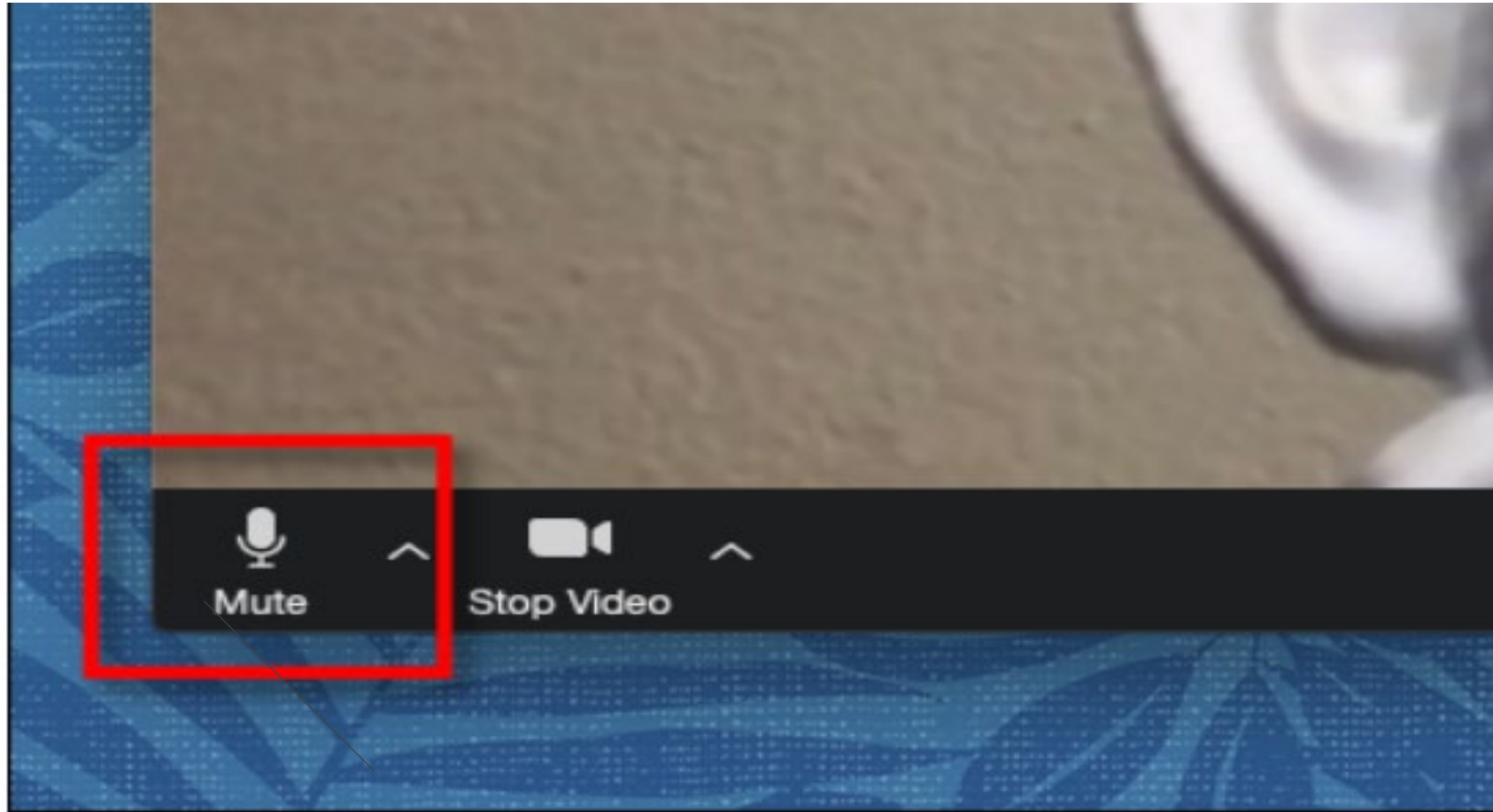
- Regen Set Speeds
- Troubleshooting
- Time Based Regen
- Insite Image Analyzer - Insite
- QuickServe Fault Code Analyzer
- Insite Tests
- Frequent Regen Update

QuickServe Online

- Insite Support Manual
- QSOL Technician Training
- Basic Parts Look-up – parts.cummins.com

Questions & Answers

Please Mute yourself and/or your phone



Buses Parked – Extended Period



Buses Parked – Extended Period

- Drain fuel water separators **prior to starting** – Recheck after running the engine
- Test DEF concentration using refractometer - **specification is 32.5 +/- 1.5 percent.** Refer to Service Bulletin 4021566 DEF specifications

DEF has an expected shelf life of 18 months minimum when stored under the following conditions.

Storage temperature between -5°C to 25°C [23°F to 77°F]

Sealed containers

Avoiding direct sunlight

Shelf life is reduced by 6 months for each 5°C [9°F] increment above recommended temperatures

- **Use fast idle** to allow aftertreatment temps to reach 300F – this should activate NOx sensors and DEF dosing
- Refer to shop manual procedure 000-005 for long term storage when a vehicle will be parked and not run for 12 months or more
- Consult your Diesel fuel supplier for checking bulk fuel supply tank



2021 B6.7 Update

Summary of Changes to 2021 B6.7



MAINTENANCE



REGULATORY



RELIABILITY

BASE ENGINE



Modified valve cover design to incorporate new breather and connectivity device



Incorporated OEM truck requested engine-mounted air cleaner bracket (***school only***)

ELECTRONICS



Next generation CM2450 control module and controls software



Improved connectivity to find, resolve, and prevent issues



Wiring harness changes to improve reliability and integrate with CM2450.

LUBE AND COOLING



Implemented copper-free oil cooler.

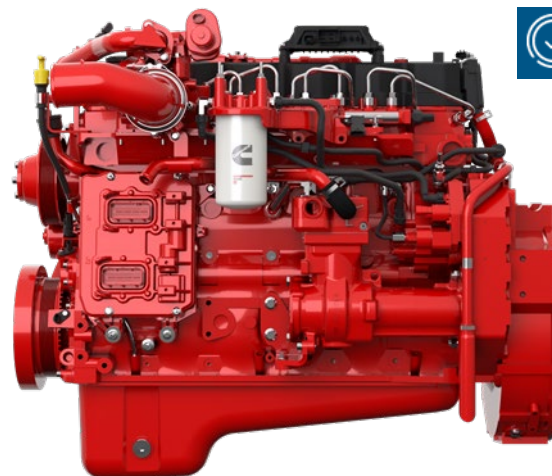
AIR HANDLING



Added exhaust manifold pressure sensor



Improved turbocharger speed sensor robustness



POWER CYLINDER



Modified piston design for improved maintenance intervals and to maintain dependability.



Top and oil piston rings with improved coatings and designs

MAINTENANCE



Maintenance-free breather system.



Increased capabilities on oil filter and Stage 1 & 2 fuel filters

Changes to 2021 B6.7 Aftertreatment



REGULATORY



RELIABILITY

DOSING SYSTEM



Updated UL2.0 dosing unit with the Next Gen Nozzle for improved uptime and performance.



SENSING TECHNOLOGY



Improved RADP Sensor for improved uptime.

PHASE 35 SOFTWARE



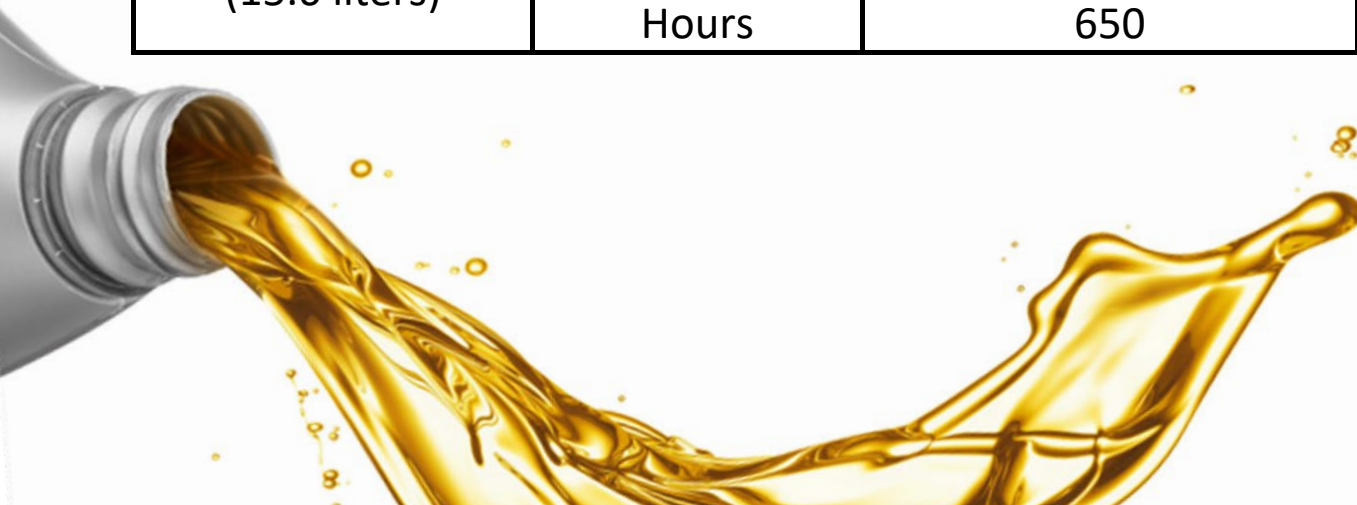
Compatible with next generation CM2450 control module and controls software for improved computing capabilities required to meet emissions and OBD requirements.

B6.7 | 2021 Maintenance Changes

Maintenance Event	EPA 2017 B6.7	EPA 2021 B6.7
Oil and Filter Change	Up to 20K miles / 550 hours (duty cycle dependent)	Up to 30K miles / 1000 hours / 18 months (duty cycle dependent)
Fuel Filter Change	15K miles / 500 hours	60K miles / 2000 hours / 18 months
Crankcase Ventilation Filter ("Breather") Change	75K miles / 2500 hours	MAINTENANCE FREE
Valve Lash Adjust	150K miles / 5000 hours	150K miles / 5000 hours
DPF Clean	200K miles / 6500 hours	200K miles / 6500 hours
DEF Filter Change	200K miles / 6500 hours	200K miles / 6500 hours

B6.7 | 2021 Oil Drain Interval Schedule

Total Oil Capacity (Oil Pan + Lube Filter)	Engine Distance or Run Time	Fuel Economy		
		Severe < 6 mpg (<2.6 km/liter)	Normal 6 -10 mpg (2.5-4.3 km/liter)	Light > 10 mpg (>4.3 km/liter)
19.5 quarts (18.5 liters)	Miles	12,000	25,000	30,000
	Kilometers	19,000	40,000	48,000
	Hours	900	1000	1,000
16 quarts (15.6 liters)	Miles	10,000	20,000	25,000
	Kilometers	16,000	32,000	40,000
	Hours	650	750	850



Drain the oil and change the lube filter according to engine distance OR run time from the table OR 18 months, **whichever comes first.**

B6.7™ Base Warranty

- 5 Years / 100,000 Miles
- 100% Coverage for:
 - Parts and labor on warrantable failures
 - Aftertreatment
 - Consumables used in the repair
- All with no deductible





Available Extended Coverages

Years	Miles	Kilometers
5	200,000	321,869
5	Unlimited	
7	150,000	241,402
10	200,000	321,869
10	Unlimited	

Additional coverage options available

Options shown available on select plans (i.e. EXC, SBP)

- Includes registered parts and labor
 - **EXC coverage** – *complete coverage including EGR components*
 - **SBP coverage** – *complete coverage minus injectors*
 - **NEC coverage** – *engine coverage including EGR minus maintenance components and accessories*
 - **SMC coverage** – *major components*
- Aftertreatment Extended coverage**
 - **AB3 coverage** – *MUST be packaged with the EXC coverage*



Campaigns & Temporary Repair Practices (TRP)

What is Campaign – TRP – TSB ?



Campaign (C) - Proactive repair to address specific issue to specific engine serial number group – Generally does not require a specific failure – Several do cover travel but no towing



Temporary Repair Practice (TRP) – Provides direction or coverage for a failure to a specific engine serial number group – Generally requires a failure to apply – Several cover travel but no towing



Technical Service Bulletin (TSB) – TSB's are sorted into categories by related engine component, engine family and/or engine serial number. They can provide additional direction or information beyond what is reviewed in normal troubleshooting or repair. TSB can also provide additional OEM related information as it relates to product issues, changes or OEM related service bulletins. TSB's can also review parts information changes and details along with specific maintenance information.



Account Team Coverage (ATC) – Provides direction for a specific OEM, customer or group of engines. These are very specific repair events

Use QuickServe to check for Campaigns or TRP's

The free version of QSOL DOES NOT show Campaigns, TRP's

The screenshot displays the Cummins QuickServe Online web application. The top navigation bar includes links for Parts, Service, Warranty, My Profile, and Products. The left sidebar contains sections for Engine Content and Generator Set / Alternator Content, each with a search input for ESN or SN. The main content area is titled 'Engine Service Information (73691801 - ISB6.7 CM2350 B101)'. Below this title is a yellow banner for service training updates. A horizontal menu bar contains tabs for Manuals, Dataplate, Campaigns, TRPs, ATCs, Service Bulletins, TSBs, and What's New. Below this is another row of tabs for Service Tools, Maintenance, Fault Code Search, Symptom Search, Related Information, and Safety. The 'Campaigns' tab is selected, displaying a table of 'Warranty Campaigns'. The table has three columns: Number, Description, and Status. Two campaigns are listed: C2119 (ISB CM2350 260HP AND LOWER RATINGS EMISSION RECALL CAMPAIGN) with status 'OPEN', and C1545 (ISB/ISL AND QSB/QSL FUEL FILTER FF63009 SAFETY CAMPAIGN) with status 'COMPLETED'. Annotations include a blue arrow pointing to the ESN input field, two blue arrows pointing to the 'Campaigns' and 'TRPs' tabs, a red arrow pointing to the 'OPEN' status, and a green arrow pointing to the 'COMPLETED' status.

Engine Service Information (73691801 - ISB6.7 CM2350 B101)

Service Training update for Cummins Guidanz™ Web and Cummins Guidanz Mobile. [Click here](#) for more information.

Manuals | Dataplate | **Campaigns** | TRPs | ATCs | Service Bulletins | TSBs | What's New

Service Tools | Maintenance | Fault Code Search | Symptom Search | Related Information | Safety

Number	Description	Status
C2119	ISB CM2350 260HP AND LOWER RATINGS EMISSION RECALL CAMPAIGN	OPEN
C1545	ISB/ISL AND QSB/QSL FUEL FILTER FF63009 SAFETY CAMPAIGN	COMPLETED

Two TRP's Available – T2145 & T2146 show still open

Parts

Service

Warranty

My Profile

Products

Engine Content

Content For Engine Serial Number (ESN):

✓ ESN Has Been Updated!

73553202 >

How do I locate my ESN?

Engine Model Search

Part Number Supersessions

VIN To ESN Reference

TSB Smart Filter

Generator Set / Alternator Content

Content for Serial Number (SN):

>

OR

Current Plant: None

Current Model: None

Current Spec: None

Engine Service Information (73553202 - ISB6.7 CM2350 B101)

Service Training update for Cummins Guidanz™ Web and Guidanz Mobile. [Click here](#) for more information.

Manuals

Dataplate

Campaigns

TRPs

ATCs

Service Bulletins

TSBs

What's New

Service Tools

Maintenance

Fault Code Search

Symptom Search

Related Information

Safety

Temporary Repair Practices

Number	Description	Status
T2146	ISB6.7 CM2350 MY13 SYSTEM OUTLET NOX SENSOR TRP FOR OUT OF WARRANTY FAILURES	OPEN
T2145	ISB6.7 CM2350 MY13 AND MY14 VARIABLE GEOMETRY TURBOCHARGER ACTUATOR TRP FOR OUT OF WARRANTY	OPEN

School Bus Campaigns



Warranty Memo 2010

- Due to COVID19 Cummins paused the ***pro-active replacement*** of SCR catalyst on several campaigns early April – To complete the campaign the engine need to have a failure requiring replacement
- This was done to ensure parts availability for in use failures
- M2010 was originally expected to end July 1st but most were extended to October 1st.
- M2010 has expired October 1st - All campaigns have reverted back to Pro-Active status



Campaign – School Bus

Campaigns – Engine

- C2191C - B6.7 CM2350 MY17-MY18 Product Improvement Calibration Campaign
- C1296 - ISB 6.7 CM2250 Fan Hub Drive Pulley **Product Safety Campaign** School Bus
- C2302A – B6.7 IC Engine Mounted Fuel Heater Safety Campaign

Campaigns - SCR

- C2118B - ISB CM2250 260 HP and lower MY2010-2012 Emission Recall Campaign
- C2114C - ISB CM2250 265 HP & Higher – MY 2010-2012 Emission Recall Campaign
- C2115A - ISB CM2350 MY2013-2014 265HP and Higher Emissions Recall Campaign
- C2119A - ISB CM2350 MY2013-2014 Lower HP - SCR Replacement

All above campaigns are subject to change – Please refer to QSOL for current information

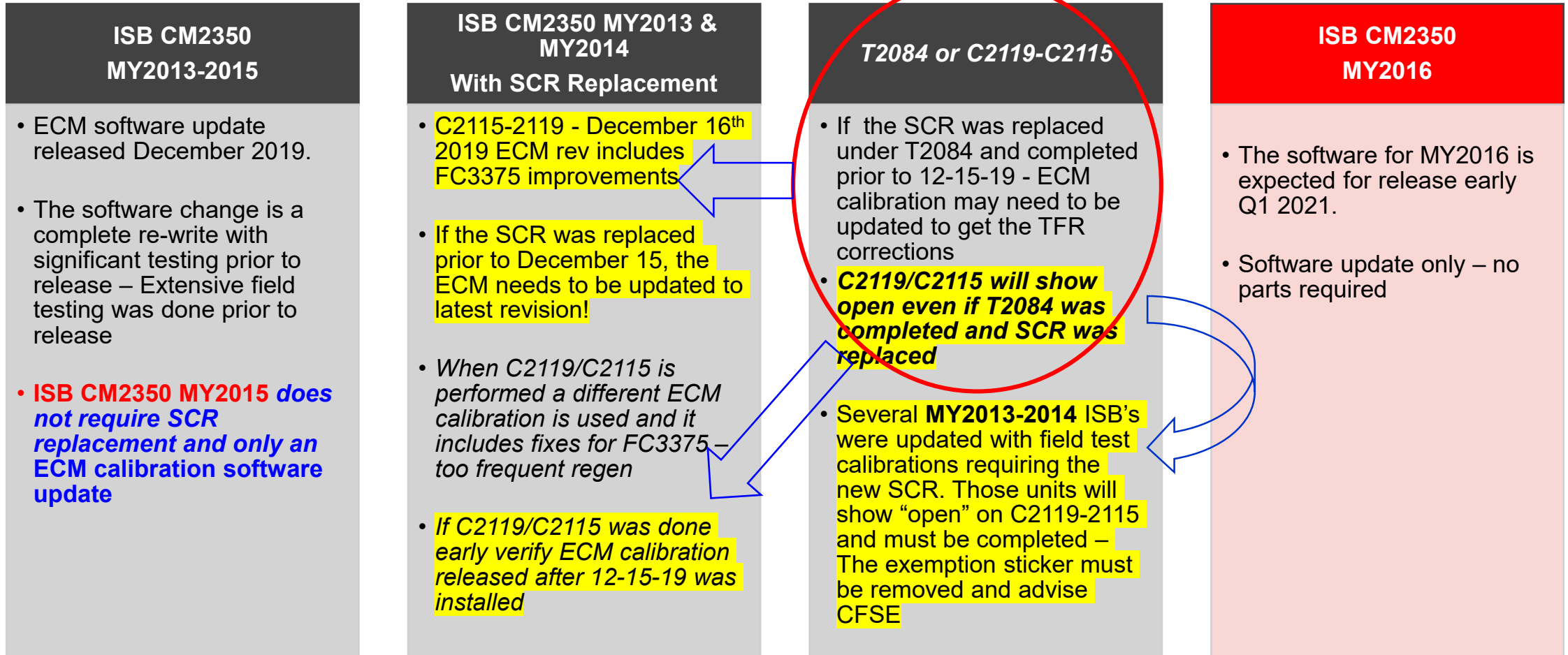
SCR Campaigns

C2115 & C2119 – ISB CM2350 – MY2013-14 Replacement of the SCR catalyst on engines **MY2013-14** – These require the ECM calibration to be changed to a different base calibration to match the new SCR due to elimination of the NH3 sensor – [*Help for too frequent regen included in software update*](#) (more about too frequent regen later)

C2114 & C2118 – ISB CM2250 MY2010-12 Replacement of the SCR catalyst **MY2010-2012** – No calibration change required

Travel covered on the campaigns listed

Campaigns C2115 & C2119 – Software



IC Fuel Heater Campaign C2302

- ~~C2127~~ - Rewire, reinstall the fuse and install a new fuel heater. ~~C2128~~ installed a new heater for units shipped with plugs only w/o a heater — **These were canceled March 24, 2020**
- **C2302** - Safety campaign to disable the fuel heater on B6.7 engines in the IC chassis
NHTSA ID: 20E-018
- Campaign **C2302** instructs removal of the fuse, cut off the connector at the heater to disable operation and install a wire cap plug. If heater has failed, heater is removed and plug installed.

Long term solution is under investigation and not expected release until 2021

- **ATC2333** was released July 1 with option to opt out of heater. This is ***not recommended*** for units operating in cold weather regions

Slide info is basic information only - Information subject to change at anytime - Please refer to each Campaign or TRP for specific details, changes adjustments, deletion or expiration

IC Fuel Heater - ATC-2333

- **ATC-2333** was issued to offer eligible customers an opportunity to receive a \$50 refund ***instead of a fuel heating*** solution being developed by Cummins for ***future*** installation.
- Upon receiving a signed agreement from the appropriate party in authority with respect to the eligible engine(s), service providers may offer the customer a \$50 refund per eligible engine in a manner agreed to by both the customer and the service provider.
- If opting for the \$50 refund, ***all future actions related to the fuel heater are eliminated***

Above is basic information only - Subject to change at anytime - Please refer to each Campaign or TRP for specific details, changes adjustments, deletion or expiration



Campaign – C2191 - B6.7 MY17-18

- **C2191-C B6.7 CM2350 MY17-MY18 Product Improvement Calibration Campaign** – Calibration of the Engine Control Module on certain **B6.7 CM2350** engines with a product improvement calibration for improved reliability.
- This calibration improvement is primarily to correct oil in the compressor side of the turbocharger – Refer to **TSB190012**.
- Customers using **Zonar** have the ability to upload the calibration using Zonar over the air calibration update or the customer can request a **free In-line Mini for DIY**
- ***Travel is not covered under this campaign***

B6.7 Turbo Compressor Seal Oil Leak – Review

TSB190012

Symptom:

External lubricating oil leak

Lubricating oil in charge air cooler (CAC)

Lubricating oil leak at turbocharger

Resolution

A new engine control module (ECM) calibration code is available to prevent a pressure difference across the turbocharger during certain running conditions that can lead to compressor seal oil leaks. **C2191 released to update ECM calibration**

Service Instructions

Complete the compressor seal oil leak troubleshooting tree. See corresponding Service Manual, **Bulletin 5411226**.
Reference Symptom Tree t185.

Repair any issues found during troubleshooting and clean lubricating oil from the turbocharger piping, charge air cooler (CAC), and intake as necessary.

If turbocharger is found to meet reuse guidelines as stated in troubleshooting tree. Do **not** replace turbocharger.

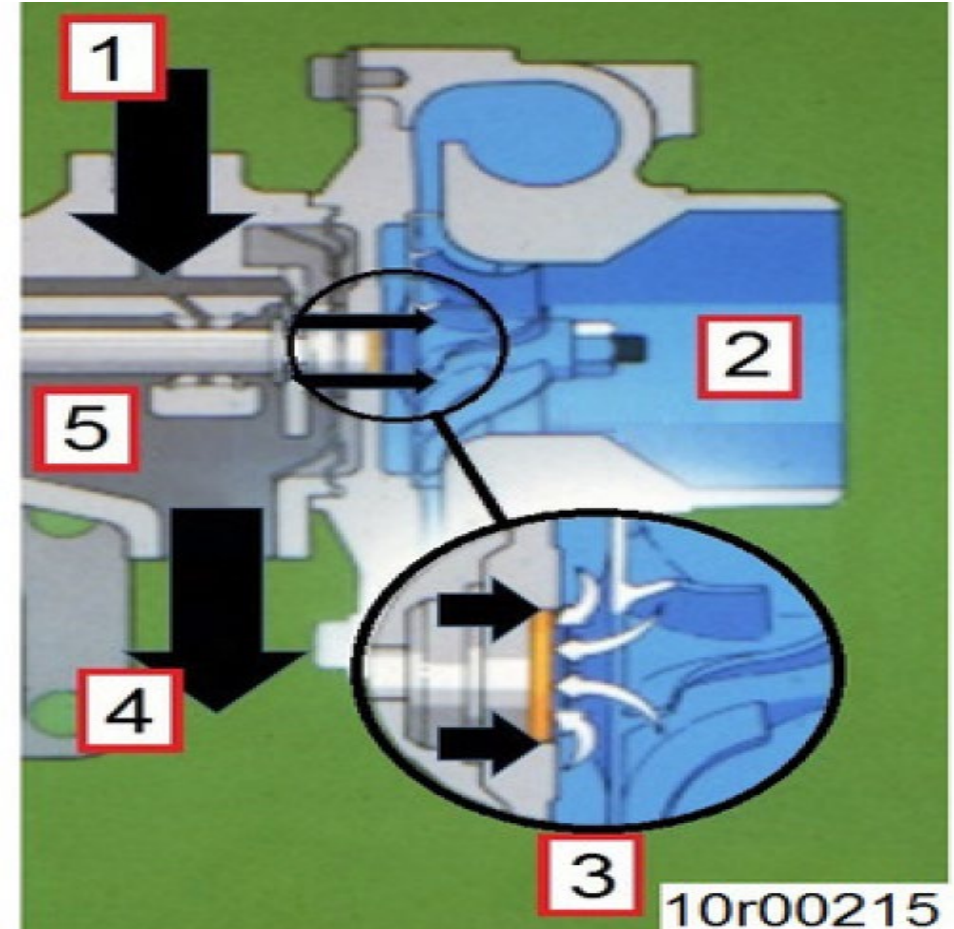
B6.7 Turbo Compressor Seal Leak – Review

The ECM calibration has tuning to create boost differential
System Boost leaks must be corrected or leaks may continue

After repair is complete and the engine is operated, residual lubricating oil could be pushed from the turbocharger compressor housing and produce lubricating oil streaks in or on the turbocharger piping. This observation alone does **not** constitute a malfunction that requires further repair.

Calibrate the unit with latest engine control module (ECM) calibration code if ECM calibration code has **not** been updated prior to December 2018.

- **Refer to TSB190012**



Bluebird – B6.7 - FC 3556 after C2191 or ECM calibration revision update

- **FC 3555 or 3556** – “*Wait to start – Datalink error*” after completing a calibration update for **C2191** on Bluebird buses. **TSB170081** was released 2017 to address this issue and directs to ***change*** the base calibration to the cross reference listed.
- This calibration change process was covered by a ATC1929 released in 2017 and has since expired. Units that the ATC was not completed could generate FC 3555 or 3556 when updating a current calibration.
- **ATC2343** was released specific to the impacted Blue Bird population and will allow for changing the base calibration per TSB170081

Above is basic information only - This is subject to change at anytime - Please refer to each Campaign or TRP for specific details, changes adjustments, deletion or expiration

ABS Lamp On – After ECM calibration

The ABS lamp on after ECM calibration update for units with Bendix EC60 – EC80 controller

Step 3: B6.7 CM2350 – MY 2017 – ABS light on after engine ECM calibration update

Before doing a ECM Update on Bluebird school bus remove the ABS and Transmission battery fuses to prevent bleed over to those controller's.

On the conventional buses they are located behind the cover inside the bus under the dash (large plastic cover in center under the dash) on the back side of the cover has fuse ID and location.

On the flat nose rear engine buses they are in the large gray box in top left of engine compartment with four clips that hold the cover on and fuse ID is on back of cover.

On the flat nose front engine the same gray box is outside under the driver's window (second compartment down from window). Hopefully this will eliminate problems.

The ABS codes should go inactive after fuses are installed and key switch cycled.

For the ABS lamp, P-phase was completed and the cal changes are waiting for the next calibration release - below are the estimated dates:

MY17-19: ~Aug/Sep 2020 ????

MY15-16: ~Oct 2020

MY 20: ~July 2020

This issue is primarily on Bluebird but will happen on IC if they are equipped with Bendix EC60-80 controller

ABS Lamp – After Calibrating ECM

TSB150073 – ABS light on after engine ECM calibration – Issue was reported in 2016 and corrected but is happening on B6.7 CM2350 with latest version of Insite – Bendix Acom diagnostic software is required to reset ABS controller to clear lamp – or unplug the ABS fuse prior to calibrating the engine ECM –

TSB190174 reviews the process for ECM calibration on **B6.7 – MY2017 and newer** – Directs removal of OEM - ABS and transmission fuse **prior** to engine ECM calibration. *The final correction is in process and should be corrected in engine ECM software.*

Refer to TSB150073 for the process to reset the ABS controller using the Bendix Acom software

Please note – IC school bus with the Bendix EC60 or EC80 controller could have the same issue.



ISB MY2013-2016

Too Frequent Regen Update

ISB CM2350 MY2013-2016 – FC3375 “Too Frequent Regeneration” or “Regeneration Issues”

ISB CM2350 MY2013-2015	ISB CM2350 MY2013 & MY2014 With SCR Replacement	T2084 or C2119-C2115	ISB CM2350 MY2016
<ul style="list-style-type: none">ECM software update released December 2019.The software change is a complete re-write with significant testing prior to release – Extensive field testing was done prior to release <div><ul style="list-style-type: none">ISB CM2350 MY2015 does not require SCR replacement and only an ECM calibration software update</div>	<ul style="list-style-type: none">C2119 - December 16th 2019 ECM rev includes FC3375 improvementsIf the SCR was replaced prior to December 15, the ECM needs to be updated to latest revision!When C2119/C2115 is performed a different ECM calibration is used and it includes fixes for FC3375 – too frequent regenIf C2119/C2115 was done early verify ECM calibration released after 12-15-19 was installed	<ul style="list-style-type: none">If the SCR was replaced under T2084 and completed prior to 12-15-19 - ECM calibration may need to be updated to get the TFR corrections<i>C2119/C2115 will show open even if T2084 was completed and SCR was replaced</i>Several MY2013-2014 ISB's were updated with field test calibrations requiring the new SCR. Those units will show “open” on C2119-2115 and must be completed – The exemption sticker must be removed and advise CFSE	<ul style="list-style-type: none">The software for MY2016 is expected for release Q1 2021Software update only – no parts required

Note – During calibration update it's recommended to **clean EGR ports, check exhaust gas psi tube and check for boost leaks**

DPF and EGR Diff Sensor & Port Cleaning

Best Practice

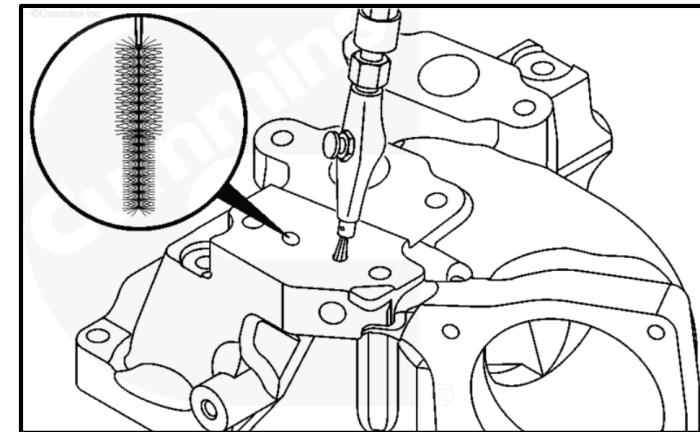
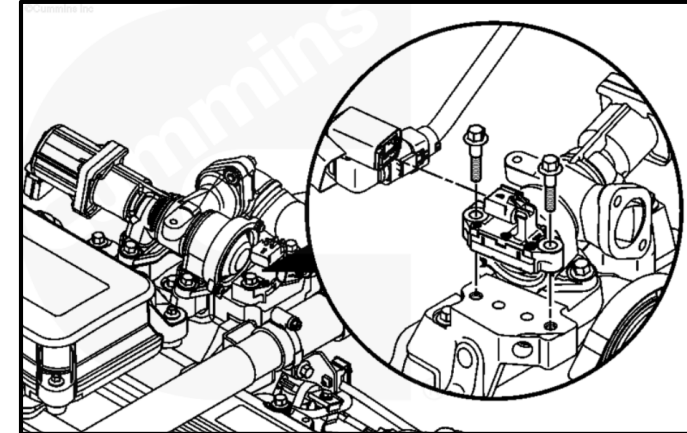
Inspect all INTAKE and EXHAUST CONNECTIONS for LEAKS at EVERY CHANCE.

Cleaning DPFs:

- Look at hours not miles to maximize uptime due to idle: **5,000-6500hours**
- Requires “Maintenance Reset” in ECM using Insite Software.
- **ALWAYS** use new exhaust gaskets in DPF and exhaust connections.
- Remove old gasket materials completely from connections.
- Inspect Aftertreatment Inlet for Oil, Coolant, Fuel Contamination.

Cleaning EGR differential sensor and ports:

- Packed or dirty EGR diff sensor and ports can create downstream issues in aftertreatments
- Look at intake air connection for EGR diff port cleaning
- EGR Valve cleaning procedure can be found in procedure **011-022 EGR Valve**
- Differential Port (DP) cleaning procedure can be found in procedure **010-080 Air Intake Connection – Also 5579934 bulletin**
- Benefit of **5000 hour** cleaning will **reduce bus downtime** due to EGR DP port and sensor related **faults – 3382, 1921, 1896, 3375.**



Bulletin 5579934



Service Bulletin

[Contact Us](#)

Service Bulletin Number: 5579934

Released Date: 22-jul-2019

Exhaust Gas Recirculation (EGR) System Intake Air Connection Inspection and Cleaning Guidelines

Exhaust Gas Recirculation (EGR) System Intake Air Connection Inspection and Cleaning Guidelines

Table of Contents

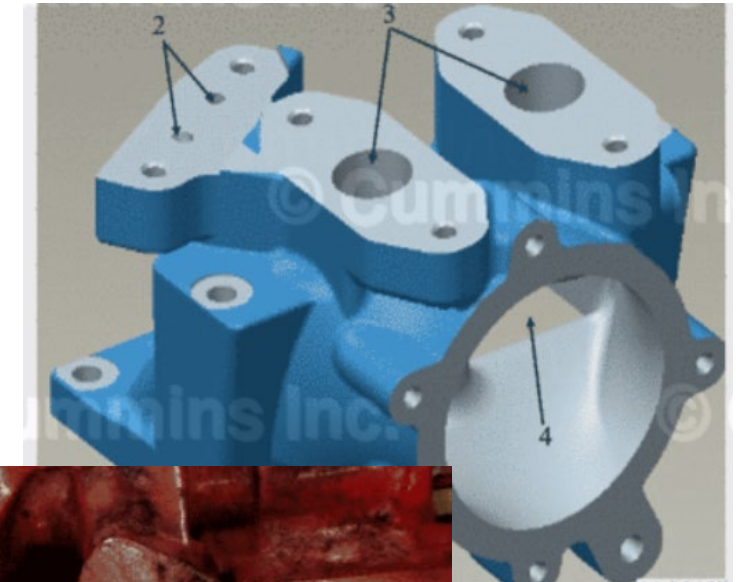
- I. Products Affected
- II. Introduction
- III. Inspection and Cleaning of Intake Air Connection Exhaust Gas Entrance Ports
- IV. Inspection and Cleaning of Air Intake Connection Differential Pressure Sensor Ports/Cross Drillings

I. Products Affected

All midrange engines with exhaust gas recirculation (EGR)

II. Introduction

- This document provides guidelines to inspect and clean the intake air connection in the exhaust gas recirculation (EGR) system.
- The intake air connection combines EGR flow and fresh air flow into charge flow. Charge flow then goes through the air intake grid heater prior to reaching the air intake manifold.
- EGR flows through the intake air connection exhaust gas entrance ports prior to entering the fresh air flow stream. A differential pressure is measured across one of the exhaust gas entrance ports. The engine control module (ECM) uses this measurement to estimate EGR flow.
- EGR flow measurement by the ECM is accurate when the intake air connection exhaust gas entrance ports are clean or lightly sooted.
- EGR differential pressure sensor ports/cross drillings need to be maintained in a clean condition to ensure that EGR flow measurement by ECM is accurate.
- Air Intake Connection exhaust gas entrance ports and EGR differential pressure sensor ports/cross drillings may accumulate moderate soot deposits that can change the ECM's EGR flow measurement accuracy.



School Bus – TRP's



Temporary Repair Practices - TRP's

TRP is a ***Temporary Repair Practice*** to address a specific item.

Only parts and labor listed in the TRP are covered unless otherwise noted – Troubleshooting may or may not be included – Refer to specific TRP

TRP's *only apply* to engines that are no longer covered by a Cummins Base, Extended, Parts or Emissions warranty program – If other warranties apply, claims should be filed against those coverages

Travel may be covered – please check the TRP for details. Towing is not covered

Duration of coverage and expiration will be listed in the TRP

Repair must be done by authorized Cummins repair locations - Eligibility for a temporary repair practice (TRP) must show **OPEN** on QSOL and the engine serial number listed

TRP's T2145 & T2146

T2145-D - ISB6.7 CM2350 MY2013 and MY2014 Variable Geometry Turbocharger Actuators for Out of Warranty Failures - Variable Geometry Turbocharger Actuator failures on certain ISB6.7 CM2350 MY2013 engines. This TRP authorizes ***certified repair*** locations to replace the Variable Geometry Turbocharger Actuator if fault codes or troubleshooting lead to a confirmed failure of the VGT Actuator.

The failure must be under 10 years and/or 185,000 miles

T2146-C – ISB6.7 MY2013 NOx Outlet Sensor - System Outlet NOx Sensor failures on certain ISB6.7 CM2350 engines if fault codes or troubleshooting lead to a confirmed failure of the System Outlet NOx Sensor.

The failure must be under 10 years and/or 185,000 miles

- Above is basic information only - These are subject to change at anytime - Please refer to each Campaign or TRP for specific details, changes adjustments, deletion or expiration



Aftertreatment System



Mobile Regen Set Speed

**Aftertreatment Diesel
Particulate Filter
Temperature Stabilization**

INSITE Programmable Parameters










Aftertreatment – Feature & Parameter Settings

- Check the regeneration ECM settings to be sure they are properly adjusted to allow for optimal operation
- **ISB/B6.7 MY2010-12 CM2250 – MY 2013-20 CM2350** – Verify the DPF stay warm feature – *aftertreatment temperature stabilization - enabled* – *Refer to TSB170058*
- Verify the regen minimum set speed is adjusted to **5 MPH** *or zero if the application allows*
- When the set speed is **above** zero and temp stabilization is **enabled** it will allow a mobile regeneration event to occur when speeds above the set speed are achieved. When temp stabilization is **not enabled** it requires a vehicle speed of 40 before regen is allowed.
- Set speed of zero does **NOT** require temp stabilization to be enabled
- When set to zero, regen will be allowed when temp, exhaust flow can be achieved and maintained

Operating a bus on a low duty cycle urban route with a set speed above zero and temp stabilization **DISABLED** can cause regen issues

ISB CM2150- MY2007-2009 DO NOT have the temp stabilization feature – **Option - adjust regen speed to zero**

Mobile Regen Set Speed & DPF Temp Stabilization – Example – Insite General Default settings

 Aftertreatment		
 Diesel Particulate Filter		
 Active Regeneration in PTO and Remote Modes		Disable
 Aftertreatment Diesel Particulate Filter Stationary Regeneration with Parking Brake		Disable
 Aftertreatment Diesel Particulate Filter Temperature Stabilization		Disable
 Automotive Mobile Regeneration		Enable
 Minimum Vehicle Speed		5 mph
 Diesel Particulate Filter Lamp		Installed
 Diesel Particulate Filter Regeneration Permit Switch		Disable

- The CM2250 & CM2350 engines have a DPF stay warm feature – *aftertreatment temperature stabilization* – Refer to [TSB170058](#)

School Bus DPF & Temp Stabilization Feature Settings

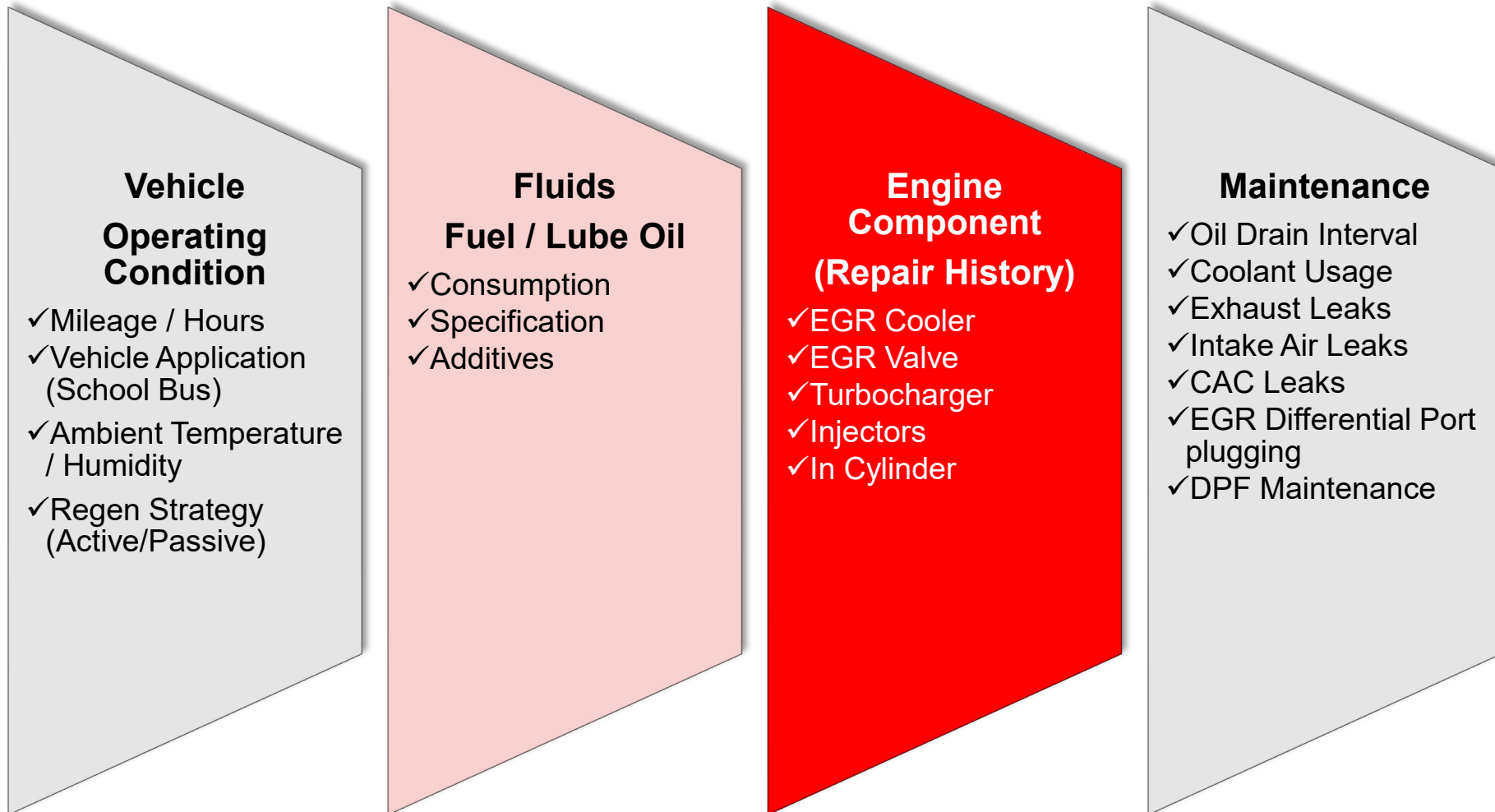
		Features and Parameters		ECM Value	Units
		Accelerator Type		Dual Analog	
		Accelerator Brake Override		Disable	
		Adjustable Low Idle Speed		Enable	
		Low Idle Speed		800	RPM
		Low Idle Speed Adjustment Switch		Disable	
		Aftertreatment			
		Diesel Particulate Filter			
		Active Regeneration in PTO and Remote Modes		Disable	
		Aftertreatment Diesel Particulate Filter Temperature Stabilization		Enable	
		Automotive Mobile Regeneration		Enable	
		Minimum Vehicle Speed		5	mph
		Diesel Particulate Filter Lamp		Installed	
		Diesel Particulate Filter Regeneration Permit Switch		Disable	
		Diesel Particulate Filter Regeneration Start Switch		Enable	
		High Exhaust System Temperature Lamp Configuration		Enable	
		Active Due to Regeneration		Enable	
		Active Maximum Speed		5	mph
		Active Temperature		1472	°F
		Inactive Temperature		662	°F
		SCR Aftertreatment			
		Aftertreatment Diesel Exhaust Fluid Level System Configuration		Enable	
		Aftertreatment Diesel Exhaust Fluid Low Level		10.0	percent

Aftertreatment	
Diesel Particulate Filter	
Active Regeneration in PTO and Remote Modes	Disable
Aftertreatment Diesel Particulate Filter Stationary Regeneration with Parking Brake	Disable
Aftertreatment Diesel Particulate Filter Temperature Stabilization	Enable
Automotive Mobile Regeneration	Enable
Minimum Vehicle Speed	5 mph



REGENERATION BASICS

The Key to Aftertreatment Diagnostics



Types of Regeneration (Active/Passive)

Converting Soot to gases

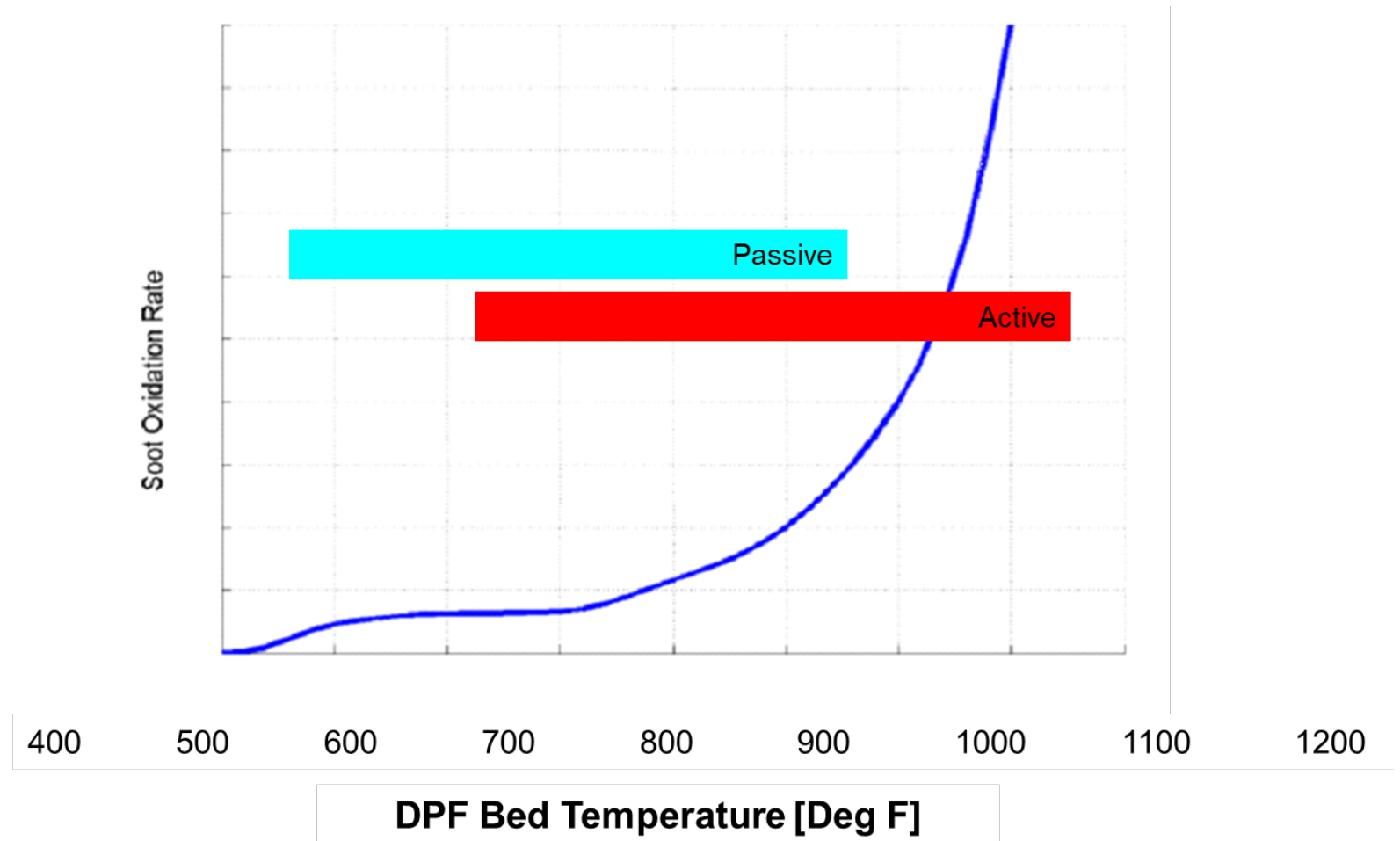
- CO₂, H₂O, N₂

Passive regeneration

- Temperature >550F in exhaust
- Soot oxidation rate slow compared to active regen

Active regeneration

- Thermal Management
- Requires temperature >932°F
- Use of the turbocharger
- Use of aftertreatment injection (2 main methods)



Types of Regeneration: ACTIVE REGEN's

Mobile Regen

ECM initiated

- ***Vehicle in motion***
- Soot load limit reached
- Regen time limit reached (24 hrs)
- Diesel fuel injected in cylinder
- Duration is dependent on duty cycle

Stationary

Operator initiated

- ***Vehicle in Park***
- Transmission in Neutral
- Dash switch – regen will only initiate when soot load FC active
- Regen duration will be only to extinguish lamp

Service tool

Technician initiated

- ***Vehicle in Park***
- Cummins INSITE required
- Regen runs for a specific duration of time 1-1/2 to 2 hours depending on ambient temp

Desorb

Typically at cold engine startup

- ***Vehicle in Park***
- Elevated Idle w/ increased turbo noise
- Reduces humidity in aftertreatment
- **NO** dosing takes place

This is not a regen



Tips for Preventing Regen/Aftertreatment Issues

Tips and Checks

- Regen vehicle set speed set correct - **0-5 MPH**
- Aftertreatment Temp Stabilization Enabled – **2010 to Current – Enable** if regen set speed above zero
- DPF clean/replace performed at recommended miles/hours – **6500** hours or 200,000 miles
- EGR differential ports cleaned or inspected – **5000-6500 hours – Bulletin 5579934**
- Idle shutdown enabled - **10-15 minutes** – Reduction of unnecessary idle time
- Use of PTO/fast idle for warm-up – **1000-1200 RPM's** – Fast idle is always preferred in cold weather or extended idle
- Winter front use when ***not equipped*** with ***on/off*** clutch fan ?
- Boost leaks due to leaking hoses clamps - **Periodic inspection** – Boost leaks create additional engine out smoke
- Air filters replaced prior to being restricted - **Use air cleaner restriction gauge**
- Correct fuel filter priming and maintenance - **Correct prefill process** – Prevents fuel system damage
- Diesel fuel meeting cetane requirement - **42 or higher** – low cetane fuel will create additional engine out smoke
- Drain water from fuel water separator – **Periodic filter inspect/drain**



Troubleshooting Insite – Quickserve Online

QuickServe Online

Search ESN 73796906 for: [Go Search](#)
Search All Engines for: [Go Search](#)
99279 (Distributor/Distributor) [My Profile](#) [Contact Us](#) [Logout](#)

[Parts](#) [Service](#) [Warranty](#) [My Profile](#) [Products](#) [Promotions](#) [News](#)

Engine Service Information (73796906 - ISB6.7 CM2350 B101)

Free - Cummins Guideline™ Web Training via Skype for North American Dealers. [Click here](#) for more information.

[Manuals](#) [Dataplate](#) [Campaigns](#) [TRPs](#) [ATCs](#) [Service Bulletins](#) [TSBs](#) [What's New](#)
[Service Tools](#) [Maintenance](#) [Fault Code Search](#) [Symptom Search](#) [Related Information](#) [Safety](#)

Manuals

Wiring Diagrams

(4310801) ISB6.7 CM2350 B101 Wiring Diagram

Fault Code Troubleshooting Manual

(4310801) ISB6.7 CM2350 B101 Fault Code Troubleshooting Manual [\[Change History\]](#)

Service Manuals

(2883567) ISB6.7 CM2350 B101 Service Manual [\[Change History\]](#)
(541406) Fluids for Cummins® Products Service Manual [\[Change History\]](#)

Owners Manuals

(2883566) ISB6.7 CM2350 B101 Owners Manual [\[Change History\]](#)

Operation and Maintenance Manuals

Troubleshooting

To perform even ***the basic*** troubleshooting on the engine you ***must have these tools !!!***

- Insite – Pro is required to perform ECM calibration updates
- QuickServe On Line (QSOL) Full Access Version – Provides access to T/Shooting, Shop Manuals, Technical Service Bulletins (TSB's), Warranty Manuals, Campaign information and more!
- Full Access QuickServe provides access to the individual Cummins Online training database – Requires personal login to be set up

QSOL is updated daily so it is the most current and reliable tool for service and parts look up. Print manuals or link to troubleshooting trees in Insite can be significantly outdated

Troubleshooting

When starting to troubleshoot an issue - ***Before starting the repair*** or getting too far along –

- ✓ Check warranty status – Base warranty - Extended coverage
- ✓ Check for open Campaigns – TRP's – ATC's – ***Can't be viewed in free version of QSOL***
- ✓ Check for TSB's that may apply – You definitely should check TSB's once you do find root cause prior to fix. The TSB could include a part change, OEM direction or other important information! – ***Free version of QSOL ONLY looks at sample ESN you selected!***

Technical Service Bulletins (TSB's)

Check QuickServe for open Campaigns – TRP's – ATC's and warranty status

Review technical service bulletins TSB's - for any other detail or direction

TSB are sorted by group

TSB's may include OEM information or direction to OEM repair documents

The screenshot displays the Cummins QuickServe website interface. On the left is a red sidebar with navigation links such as 'How do I locate my ESN?', 'Engine Model Search', 'Part Number Supersessions', 'VIN To ESN Reference', 'TSB Smart Filter', 'Generator Set / Alternator content', 'Content for Serial Number (SN):', 'OR', 'Current Plant: None', 'Current Model: None', 'Current Spec: None', 'Search by Plant, Model, or Spec', 'Literature Search', 'PGBU Smart Filter', 'Bill of Material - By Serial Number', 'Bill of Material - By Part Number', 'SRT User Tool', 'DDA - Drawings', 'Order Hardcopy Manuals', 'PGBU Warranty System', 'Information', 'Edit Shopping Cart', 'Contact Us', 'My QSOL Help Tickets', 'Frequently Asked Questions', 'Related Links', 'Publications Catalog', 'Translations', 'Service Support in Extreme Conditions', 'Training', and 'My Applications'. The main content area features a top navigation bar with tabs: 'Manuals', 'Dataplate', 'Campaigns', 'TRPs', 'ATCs', 'Service Bulletins', 'TSBs' (circled in blue), and 'What's New'. Below this is a secondary navigation bar with tabs: 'Service Tools', 'Maintenance', 'Fault Code Search', 'Symptom Search', 'Related Information', and 'Safety'. The 'Technical Service Bulletins' section includes a search bar with 'Search Keyword' and 'Clear' buttons, a dropdown menu for 'All Groups', and a list of 22 groups: Group 00 - Complete Engine / Troubleshooting, Group 01 - Cylinder Block, Group 02 - Cylinder Head, Group 03 - Rocker Levers, Group 05 - Fuel Systems (Pumps), Group 06 - Injectors and Fuel Lines, Group 07 - Lubricating Oil Systems, Group 08 - Cooling System, Group 10 - Intake Air Systems, Group 11 - Exhaust System, Group 12 - Air System (Compressed), Group 13 - Electrical Equipment, Group 14 - Engine Testing, Group 17 - Miscellaneous, Group 19 - Electronic Engine Controls, and Group 22 - Service Tools.

TSB – Search – Add key word or FC number in search box and hit enter
Expand (green +)
Search results highlighted in red that match you key word

The screenshot displays the Cummins Technical Service Bulletins (TSBs) search interface. At the top, there are navigation tabs: Manual, Dataplate, Campaigns, TRPs, ATCs, Service Bulletins, TSBs, and What's New. Below these are search filters: Service Tools, Maintenance, Fault Code Search, Symptom Search, Related Information, and Safety. The main section is titled "Technical Service Bulletins" and contains a search box with the text "3232", a "Clear" button, a dropdown menu set to "All Groups", and two buttons: a green "+" (expand) and a red "-" (collapse). A red arrow points to the search box, and a blue arrow points to the green "+" button. To the right, a list of TSBs is displayed, grouped by category. The first group is "Group 17 - Miscellaneous" and the second is "Group 19 - Electronic Engine Controls". The TSB entry "(TSB200059) Datalink Fault Codes on Blue Bird™ Chassis: Fault Codes 2771, 3232, 3868, 4151, 4572, 4677, 6688" is highlighted in yellow, indicating it matches the search criteria.

Manual Dataplate Campaigns TRPs ATCs Service Bulletins TSBs What's New

Service Tools Maintenance Fault Code Search Symptom Search Related Information Safety

Technical Service Bulletins

3232 Clear All Groups

Group 17 - Miscellaneous

(TSB200015) New Lubricating Oil Dipstick Clip

(TSB190115) Navistar® Dashboard Odometer Discrepancy

Group 19 - Electronic Engine Controls

(TSB200007) Engine Speed Stumble at Low Engine Speeds When Coming to a Stop

(TSB200059) Datalink Fault Codes on Blue Bird™ Chassis: Fault Codes 2771, 3232, 3868, 4151, 4572, 4677, 6688

(TSB190091) Incorrect Pressure/Temperature Sensor: Fault Code 125, 222, 2191, 2973, 1664

(TSB190040) Coolant Level Sensors Discontinued on New Production Engines for Transit Bus Applications

(TSB190003) CM2350 Engine Control Module (ECM) Malfunctions Due to Incorrect Switch Input Wiring

(TSB170031) Fault Code 6255 Present With No Other Fault Codes and Possible Diesel Exhaust Fluid (DEF) Lamp Illumination

(TSB170027) New Exhaust Gas Recirculation (EGR) Differential Pressure Sensor Part Numbers

School Bus TSB's – All OEM

[TSB170058](#)

ISB CM2250/CM2350
B6.7 CM2350

Aftertreatment Temp Stabilization Setting The temp stabilization feature should be **enabled** on any school bus that has the minimum regen road speed set **above zero**.

[TSB190012](#)

B6.7 CM2350

ECM Calibration update to correct turbo compressor side oil leak – **C2191** ECM calibration campaign was released 8/24/19

[TSB190165](#)

B6.7 CM2350

FC 3383 Soot deposits in the intake air connection exhaust gas entrance ports are present and have affected EGR flow measurements. After troubleshooting and inspection If ECM calibration code revision on unit was released prior to December 2018, calibrate the unit with the latest ECM calibration code revision. Also refer to campaign **C2191**

[TSB190181](#)

ISB CM2350

Exhaust Gas Recirculation (EGR) System Differential Pressure Sensor Incorrect Installation: Fault Codes 3361, 3389, 3382 and 3383 – Shows correct orientation of EGR differential sensor

[TSB190091](#)

ALL- ISB/B6.7

Incorrect Pressure/Temperature Sensor: Fault Code 125, 222, 2191, 2973, 1664 – The barometric air pressure and/or turbocharger compressor intake pressure looks the same as the Intake manifold pressure on ISB/B6.7 engines. They can easily be installed in wrong location. Future sensors may be color coded

[TSB190202](#)

B6.7 MY2017

Current - Aftertreatment Diesel Exhaust Fluid (DEF) Dosing Unit with Fault Codes 3558 and 3559 - **Neither a good or malfunctioning aftertreatment DEF dosing unit can cause Fault Codes 3558 or 3559** to come active as these fault codes are isolated within the OEM wiring harness. An electrical short or open circuit has been detected in the DEF dosing unit OEM wiring harness.

[TSB190200](#)

B6.7 MY2017

Current - Fault Code (FC) 3749 with no other diesel exhaust fluid (DEF) system related fault codes. Frozen aftertreatment DEF tank at colder ambient conditions lead to inability to dose DEF after a cold soak. Inability to dose DEF. motoring event and can lead to FC3749. Review fault snapshot data for FC3749 in INSITE™ electronic service tool to verify if DEF tank was frozen at the time of fault

[TSB070007](#)

ALL Engines

Troubleshooting and Repair Direction for High Blowby and/or Oil Consumption – Links to Bulletin 5631318 This document will provide the required repair instructions for engines that have experienced foreign object debris ingestion (dust out).

TSB OEM Specific



TSB170089 – Allison trans FC P2637 – Corrected with engine ECM update

TSB170081 – FC 3555 after updating ECM calibration – TSB directs to different ECM code

TSB150073 – ABS light on after engine ECM calibration

Bendix Acom diagnostic software is required to reset ABS controller to clear lamp or unplug the ABS fuse prior to calibrating the engine ECM –

TSB190174 *Directs removal of OEM - ABS and transmission fuse prior to engine ECM calibration.*

TSB200059 – Datalink FC's 2771-3232-3868-4154-4572-4677-6688 – OEM Relay issue



TSB180009 – Charge air clamps loose or broken – Can cause aftertreatment codes to include but not limited to 1922, 1981 and failed DPF - Refer to IC for repair

TSB170120 – Navistar-IC Hood seal issue – Can cause regen issues and FC3375 - Refer to IC for repair

TSB180032 – **B6.7 CM2350** - Navistar-IC - Ruptured Air Compressor supply hose – Can cause FC 3389 – FC3375 aftertreatment and regen issues - Refer to IC for repair

TSB170046 – **ISB-B6.7 CM2350** - Navistar-IC – Belt chirp – Excessive length on IC belt – Can cause tensioner wear

TSB160031 – **ISB-B6.7 CM2350** - Navistar-IC – DEF Quality Sensor FC's – 1715,6766,6765,6767 – Refer to IC for repair

TSB190174 – **B6.7 CM2350** ABS Lamp on after ECM calibration download MY2017 – newer – Equipped with Bendix EC-80 ABS system



TSB110060 – Belt tensioner issues due to belt too long – ISB CM2250

TSB150040 – Belt shredding Thomas pusher bus

TSB120236 – FC 1679 – DEF Tank temp issues

Troubleshooting

- What is the frequency of regen ?
- What fault codes are you logging?
- Regen 2639-1921-1922-3375 could be a result of other issues (upstream) understanding what is going on and if other codes started first can help get to root cause much quicker
- Restricted air filters, significant boost leaks, plugged EGR ports will all log other codes and give you a clue on where to go Not knowing what the prior codes may have been makes it difficult to find root cause
- If you just clear codes and don't **create a Insite image/work order** you are just guessing on next step – Not knowing what the prior codes were makes it difficult to find root cause - No data to help with diagnostics
- Have you checked for campaigns, TRP's or TSB's ?

Data *ALWAYS* Tells a Story

Look at all of the data – CREATE A WORK ORDER/Image



- What is it the data telling you ?
- What is the repair history ?
- What is the regen frequency ?
- Does it have a history of frequent fault codes being cleared(audit trail) ?
- What codes are logged – Are they related ?
- How many hours since DPF cleaning or has it been clean ?
- Have EGR port plugging been checked ?
- Using Oil or Coolant ?
- How long has the unit run to compare after regen frequency ?
- Start with the easy checks !

ALWAYS Create Insite Work Orders

PLEASE add the *UNIT Number and Name* to your work orders

The screenshot displays the Insite software interface. On the left is a sidebar with icons for 'Connect to ECM', 'Fault Codes', 'Data Monitor/Logger', 'ECM Diagnostic Tests', 'Advanced ECM Data', 'Features and Parameters', 'Calibration Selection', 'Work Orders ECM Images ECM Templates', 'Trip Information', 'Audit Trail', and 'Inquire Data Extraction'. The main window shows a list of 'Work Orders/ECM Images' with 'WO-20200124-083635' selected. Below this list is a table with 'ECM Template' and 'System Type' columns. A 'Work Order Properties' dialog box is open in the foreground. Two blue arrows point from the text 'PLEASE add the UNIT Number and Name to your work orders' to the 'Customer Name' and 'Unit Number' fields in the dialog. The 'Customer Name' field contains 'Meigs Local' and the 'Unit Number' field contains '17', both of which are circled in red. The 'Vehicle Information' section of the dialog shows 'Identification' as '4UZABRDT4FCGM0886', 'Make' as 'DAIMLER TRUCKS', and 'Model' as 'B2 106'. The 'Technician's Note' field is empty. At the bottom of the dialog are buttons for 'Print', 'OK', 'Cancel', and 'Help'. To the right of the dialog, a partial view of another table is visible, showing columns for 'System Type', 'Date And T', and various dates.

ECM Template	System Type
T-20170908-125135	ISB6.7 CM
T-20181108-121621	ISB6.7 CM
T-20190711-125230	B6.7 CM23
T-20200623-120306	ISB6.7 CM
T-20190729-154517	ISB6.7 CM
T-20200130-152310	ISB6.7 CM
T-20200130-154053	ISB6.7 CM
T-20200217-155634	ISB6.7 CM
T-20200221-145531	B6.7 CM23

System Type	Date And T
ISB6.7 CM2350	08-Sep-201
ISB6.7 CM23	08-Nov-201
ISB6.7 CM23	11-Jul-2019
ISB6.7 CM23	23-Jun-202
ISB6.7 CM23	29-Jul-2019
ISB6.7 CM23	30-Jan-202
ISB6.7 CM23	30-Jan-202
ISB6.7 CM23	17-Feb-202
ISB6.7 CM23	21-Feb-202

Regen History – Insite

The last 10 regens completed are stored in the Insite ECM image

➤ Advanced ECM Data – Aftertreatment History (Using image analyzer is much easier)

INSITE 8.5.2.81 / DP - I-20200103-102030451 - Engine Serial Number - 73769118 - ECM Code - DT90364.F3

File Edit View Tools Manage License(s) Send To Guidanz Window Help

Disconnect from ECM

Fault Codes

Data Monitor/Logger

ECM Diagnostic Tests

Advanced ECM Data

Features and Parameters

Calibration Selection

Work Orders ECM Images ECM Templates

Trip Information

Audit Trail

ISB6.7 CM2350 B101

CM2350A

Aftertreatment History

Aftertreatment Maintenance

Aftertreatment Maintenance Filter Installation

Anti-Theft Protection

Duty Cycle Monitor

Engine Abuse History

Engine Protection

Engine Protection Setting

Torque Derate

RPM Derate

ShutDown

SAE J1939 Multiplexed Fault Data

Turbocharger Actuator Compatibility

Aftertreatment History

This feature records data associated with the last 10 regeneration events. It also displays the Maximum Soot Load condition and

Regeneration History Log

	ECM Time (Key On Time)	ECM Real Time	Starting Diesel Particulate Filter Soot Load	Ending Diesel Particulate Filter Soot Load	Starting Diesel Oxidation Catalyst Intake Temperature	Maximum Diesel Particulate Filter Intake Temperature	Maximum Diesel Particulate Filter Outlet Temperature	Maximum Diesel Particulate Filter Differential Pressure	Passive Desulfation Active
Units					°F	°F	°F	inHg	percent
2	005076:26:58	Not Applicable	Normal	Normal	565.5	1019.8	1028.1	2.6	N/A
3	005024:39:42	Not Applicable	Normal	Normal	565.9	1026.1	1058.7	2.6	N/A
4	004999:19:24	Not Applicable	Normal	Normal	622.4	1015.7	1050.6	2.7	N/A
5	004973:21:39	Not Applicable	Normal	Normal	593.0	1098.8	1306.9	2.8	N/A
6	004971:47:19	Not Applicable	Normal	Normal	619.0	1003.4	1054.9	2.8	N/A
7	004946:21:44	Not Applicable	Normal	Normal	583.3	1012.8	1054.9	3.0	N/A
8	004922:00:00	Not Applicable	Normal	Normal	583.3	1003.4	1054.9	3.0	N/A

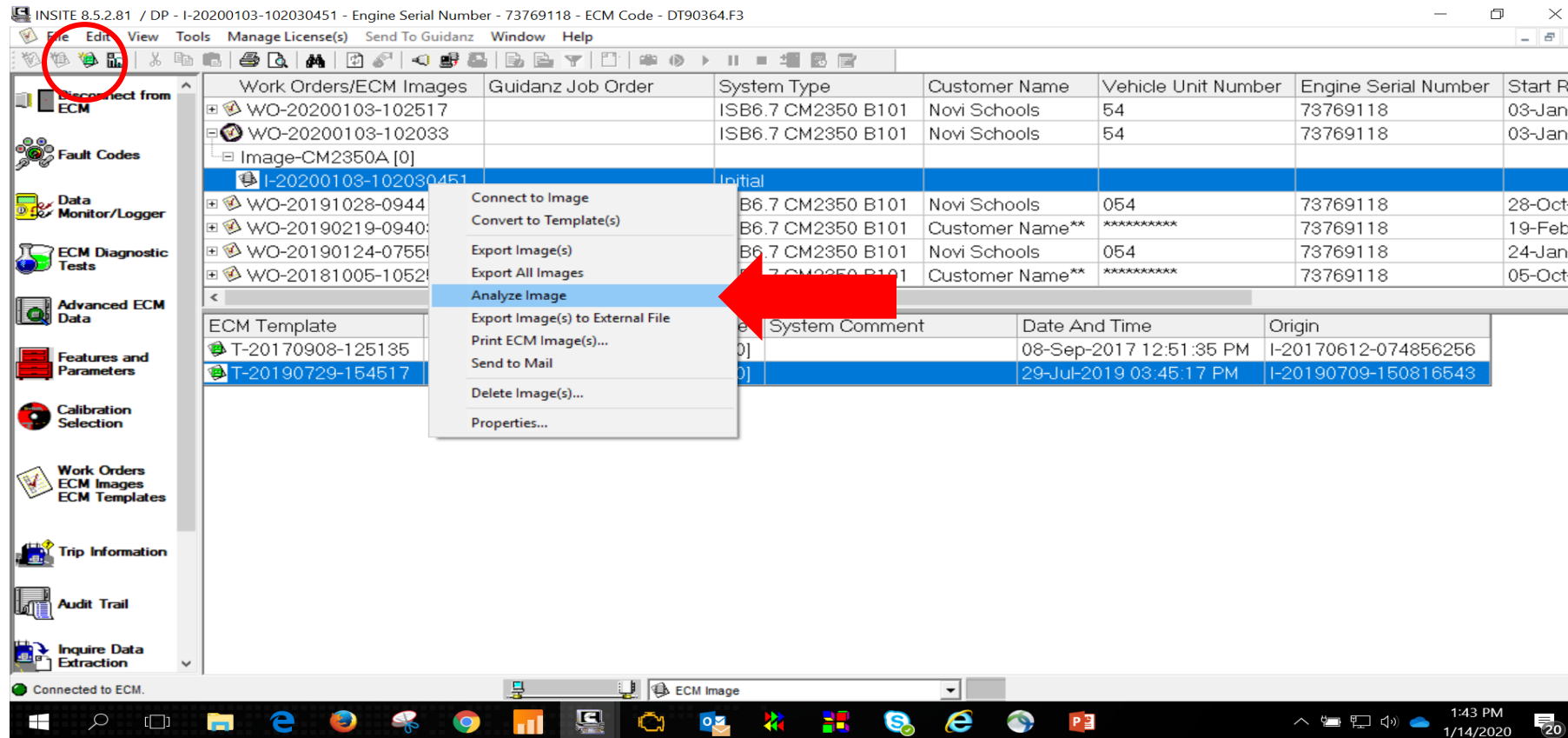
Select a Log: Maximum Soot Load Condition

ECM Time (Key On Time)	ECM Real Time	Diesel Particulate Filter Soot Load	Diesel Oxidation Catalyst Intake Temperature	Diesel Particulate Filter Intake Temperature	Diesel Particulate Filter Outlet Temperature	Diesel Particulate Filter Differential Pressure		
Units			°F	°F	°F	inHg		
003662:04:48	Not Applicable	Above Normal - Moderately Severe	689.3	816.8	841.4	2.5		

Help Print Save Ref

Regen History – ECM Image Analyzer

- ECM image analyzer is much easier to read and use – It converts into an easy to read format
- You must have a ECM work order/image to convert
- Right Click the third line down on the ECM image – or once third line is highlighted you can use the 4th Icon – double click either and the ECM image analyzer will run
- It will open the image analyzer in multiple tabs



ECM/Work Order Image Analyzer

ECM Image Analyzer I-20200929-071404650

Duty Cycle Monitor	Fault Codes	Fault Snapshot	Engine Abuse History	Engine Protection	Audit Trail
Data Collection	Aftertreatment System	Calculators	Image Summary	Sensor Monitor Parameters	

Customer Name : Customer Name**	System Type : ISB6.7 CM2350 B101	ECM Code : DT90113.12	Engine Serial Number : 73798961
Unit Number : *****	Image Date : 9/29/2020 7:14:04 AM	Software Phase : 14474708	<input type="button" value="Export Current Feature"/> <input type="button" value="Export All Features"/>

Fuel			
Parameters	All Trips	Last Trip	Units
Overall Fuel Economy	7.76	14.98	mpg
Low Gear Fuel Economy	7.1	7.1	mpg
PTO Fuel Used	99.1	99.1	gal
Idle Fuel Used	1199.9	1199.9	gal
Drive Fuel Economy	9.01	9.01	mpg
Gear Down Fuel Economy	10.16	10.16	mpg
Cruise Control Fuel Economy	11.08	11.08	mpg
Idle Fuel Rate	0.67	0.67	gph
PTO Fuel Rate	1.8	1.8	gph

Counts
Parameters
Engine Protection Shutdown Manual Override
Number of Sudden Decelerations
Service Brake Actuations per 1000 mi (or 1000 km)
Number Of Trip Resets
Number of Idle Shutdowns
Number of Idle Shutdown Overrides
Out of Gear Coasts

Aftertreatment

Mobile Regen Timer Schedule

- ISB – CM2150 – EPA 2007 (2007-2009) – 96 hrs.

2007-09 EPA engines in School buses generally will not run on the timer

- ISB – CM2250 – EPA 2010 (2010-2012) – 24 hrs
- ISB – CM2350 – EPA 2013 (2013-2016) – 24 hrs
- B6.7 – CM2350 – EPA 2017(2017- Current) - 24 hrs.

Occasional off timer event can be normal due to operation of that vehicle

ISB CM2350 – School Bus – Normal - Regens on the timer

ECM Time (Key On Time)	ECM Time (Real Time)	Time Since Previous Regeneration	Starting Diesel Particulate Filter Soot Load	Ending Diesel Particulate Filter Soot Load	Starting Diesel Oxidation Catalyst Intake Temperature	Diesel Particulate Filter Intake Temperature	Diesel Particulate Filter Outlet Temperature	Diesel Particulate Filter Differential Pressure
004517:42:47	Not Available	24:38:12	Normal	Normal	614.5	966.9	1020.9	1.3
004493:04:35	Not Available	24:24:36	Normal	Normal	566.0	1045.0	1012.3	0.5
004468:40:00	Not Available	24:21:00	Normal	Normal	621.5	980.8	1038.0	1.5
004444:18:59	Not Available	24:27:26	Normal	Normal	633.7	1008.7	1004.9	1.2
004419:51:34	Not Available	24:24:16	Normal	Normal	498.9	1007.8	1011.9	1.3
004395:27:18	Not Available	24:28:18	Normal	Normal	588.9	994.1	983.6	1.0
004370:59:00	Not Available	24:59:04	Normal	Normal	602.2	1007.4	1006.9	1.3
004345:59:56	Not Available	24:44:54	Normal	Normal	563.3	1056.5	965.5	0.9
004321:15:02	Not Available	24:24:59	Normal	Normal	570.7	1006.9	1059.6	1.6
004296:50:02	Not Available	-	Normal	Normal	567.8	1014.2	1021.1	1.2
Average :	-	24:32:31	-	-	-	1008.83	1012.47	1.18
Standard Deviation :	-	0:11:48	-	-	-	25.25	24.79	0.3

ISB CM2350 School Bus – Bad - Off timer – Plugged EGR ports & EGR cooler

ECM Time (Key On Time)	ECM Time (Real Time)	Time Since Previous Regeneration	Starting Diesel Particulate Filter Soot Load	Ending Diesel Particulate Filter Soot Load	Starting Diesel Oxidation Catalyst Intake Temperature	Maximum Diesel Particulate Filter Intake Temperature	Maximum Diesel Particulate Filter Outlet Temperature	Maximum Diesel Particulate Filter Differential Pressure
005606:20:58	Not Applicable	6:09:38	Normal	Normal	562.6	952.5	1123.0	3.6
005600:11:19	Not Applicable	1:40:11	Normal	Normal	614.8	946.4	1072.0	1.9
005598:31:09	Not Applicable	2:01:09	Above Normal - Least Severe	Normal	441.3	1012.1	1095.8	0.7
005596:30:00	Not Applicable	2:08:32	Above Normal - Least Severe	Normal	342.5	1008.1	1104.1	1.2
005594:21:28	Not Applicable	11:04:06	Above Normal - Least Severe	Above Normal - Least Severe	584.6	912.2	1006.0	4.2
005588:17:22	Not Applicable	1:01:11	Normal	Normal	442.6	951.4	1061.9	2.2
005582:16:10	Not Applicable	10:01:34	Above Normal - Least Severe	Normal	612.8	1026.5	1100.8	4.6
005572:14:36	Not Applicable	7:59:19	Normal	Normal	593.0	897.6	995.3	2.9
005564:15:18	Not Applicable	25:08:40	Normal	Normal	566.2	962.4	1043.9	4.3
005539:06:38	Not Applicable	-	Normal	Normal	595.6	976.4	1025.8	3.7
Average :	-	7:28:15	-	-	-	964.96	1062.86	2.93

Not on the timer

Insite Regen

Regen Speed Settings – Image Analyzer – Quick look to verify settings are correct

Scroll down below the regen frequency to review how the vehicle is set up in features and parameters

ECM Image Analyzer I-20200103-102030451

Duty Cycle Monitor	Fault Codes	Fault Snapshot	Engine Abuse History	Engine Protection	Audit Trail		
Data Collection	Aftertreatment System	Calculators	Image Summary	Sensor Monitor Parameters			
Customer Name :	Customer Name**	System Type :	ISB6.7 CM2350 B101	ECM Code :	DT90364.F3	Engine Serial Number :	73769118
Unit Number :	*****	Image Date :	1/3/2020 10:20:30 AM	Software Phase :	14475109	Export Current Feature	Export All Features
Active Regeneration in PTO and Remote Modes						Disable	
Aftertreatment Diesel Particulate Filter Stationary Regeneration with Parking Brake						Disable	
Aftertreatment Diesel Particulate Filter Temperature Stabilization						Enable	
Automatic Stationary Regeneration						Disable	
Automotive Mobile Regeneration						Enable	
Minimum Vehicle Speed						5	
Diesel Particulate Filter Lamp						Installed	
Diesel Particulate Filter Regeneration Permit Switch						Disable	
Diesel Particulate Filter Regeneration Start Switch						Enable	
High Exhaust System Temperature Lamp Configuration						Enable	
Active Due to Regeneration						Enable	
Active Maximum Speed						5	
Active Temperature						1472	
Inactive Temperature						662	

Click the Fault Code Tab – You can toggle to engine hours (from ECM time) Displays the time since first and time since last Fault code counts & Active Inactive

ECM Image Analyzer I-20200311-132148509

Customer Name : Customer Name** System Type : ISB6.7 CM2350 B101 ECM Code : DT90113.15 Engine Serial Number : 73803948

Unit Number : ***** Image Date : 3/11/2020 1:21:48 PM Software Phase : 14475109

Export Current Feature Export All Features

t display option from the drop down list: Total Engine Hours 6:07:01

Fault Codes	Status	Counts	Lamp	Description	First	Last	Time Since First Fault	Time Since Last Fault
2639	Active	9	None	Aftertreatment Diesel Particulate Filter Differential Pressure - Data Valid But Above Normal Operating Range - Least Severe Level	006599:53:24	006735:37:10	136:13:37	0:29:51
3375	Active	2	Amber	Aftertreatment Diesel Particulate Filter Regeneration too Frequent - Condition Exists	006656:59:43	006721:53:06	79:07:18	14:13:55
3376	Active	1	Amber	Aftertreatment Diesel Particulate Filter Incomplete Regeneration - Condition Exists	006731:44:19	006731:44:19	4:22:42	4:22:42

10:05 AM 8/5/2020

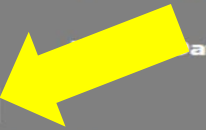
Fault Snapshot tab – Toggle between FC's to look at first and last engine parameter details when code(s) logged

ECM Image Analyzer I-20200311-132148509

Data Collection	Aftertreatment System	Calculators	Image Summary	Sensor Monitor Parameters	
Duty Cycle Monitor	Fault Codes	Fault Snapshot	Engine Abuse History	Engine Protection	Audit Trail

Customer Name : Customer Name** **System Type :** ISB6.7 CM2350 B101 **ECM Code :** DT90113.15 **Engine Serial Number :** 73803948

Unit Number : ***** **Date :** 3/11/2020 1:21:48 PM **Software Phase :** 14475109

Please select Fault Code: 3375 

Fault Code description: Aftertreatment Diesel Particulate Filter Regeneration too Frequent - Condition Exists

Parameter	First Occurrence	Last Occurrence	Unit	Time since First Fault
Aftertreatment Diesel Exhaust Fluid Dosing Unit State	Dosing	Dosing		
Aftertreatment Diesel Exhaust Fluid Dosing Valve Commanded Position	Closed	Closed		
Aftertreatment Diesel Exhaust Fluid Pressure	132.4	127.6	psi	
Aftertreatment Diesel Exhaust Fluid Tank Heating Valve Position Commanded	Closed	Closed		
Aftertreatment Diesel Exhaust Fluid Tank Level	80	100	percent	
Aftertreatment Diesel Exhaust Fluid Tank Temperature	140	111	°F	
Aftertreatment Diesel Oxidation Catalyst Intake Temperature	742.4	696.2	°F	
Aftertreatment Diesel Particulate Filter Differential Pressure	1.68	1.72	inHg	

Windows taskbar: 2:46 PM 8/5/2020

This example FC3382 snap shot data – EGR flow error

Note EGR is commanding 86% and flow is -1.9 – EGR port plugging ?

Reviewing and understanding snap shot data can help your investigation

ECM Image Analyzer I-20200109-104352903

Data Collection		Aftertreatment System		Calculators		Image Summary		Sensor Monitor Parameters							
Duty Cycle Monitor		Fault Codes		Fault Snapshot		Engine Abuse History		Engine Protection		Audit Trail					
Customer Name :		Customer Name**		System Type :		ISB6.7 CM2350 B101		ECM Code :		DT90291.12		Engine Serial Number :		74061920	
Unit Number :		*****		Image Date :		1/9/2020 10:43:52 AM		Software Phase :		1546470D		Export Current Feature		Export All Features	
ECM Time (Key On Time)		010732:49:19		010732:49:19		HHHHHH:M M:SS		4:16:58							
EGR Differential Pressure		-1.925		-1.925		inHg									
EGR Temperature		249.0		249.0		°F									
EGR Valve Position Commanded		86		86		percent									
EGR Valve Position Measured (Percent Open)		86		86		percent									
Engine Coolant Level		Normal		Normal											
Engine Coolant Temperature		158.2		158.2		°F									
Engine Hours		010603:17:06		010603:17:06		HHHHHH:M M:SS		3:56:16							
Engine Oil Pressure		51.8		51.8		psi									
Engine Operating State		Maximum Throttle		Maximum Throttle											
Engine Speed		1759		1759		RPM									
Engine Speed Backup Synchronization State		Have Synchronization		Have Synchronization											
Engine Speed Main Synchronization State		Have Synchronization		Have Synchronization											

Fault Code Analyzer - QSOL – Enter ESN – FC Search – Enter FC's All Active & IA with more than one count in past 25 hrs

The image displays two screenshots of the Cummins QuickServe Online (QSOL) interface, illustrating the process of using the Fault Code Analyzer tool.

Left Screenshot: Shows the QSOL homepage with the 'Engine Service Information (73803948 - ISB6.7 CM2350 B101)' page. The 'Fault Code Search' tab is highlighted in the 'Service Tools' menu.

Right Screenshot: Shows the 'Engine Fault Code Analyzer' tool. The tool prompts the user to 'Enter all active fault codes. Also enter all inactive fault codes with more than one count logged in the last 25 engine hours.' A red arrow points to the input field for entering fault codes.

The interface includes a search bar for ESN (73803948) and a search button. The 'Engine Fault Code Analyzer' tool also includes a table for entering fault codes and a button to 'Analyze' the results.

FAULT CODE	DESCRIPTION
1.	
2.	
3.	
4.	
5.	

Buttons: Add More Fault Codes, Analyze

Enter Codes – Hit Analyze Button – In this case, all should FC's should be investigated and completed in the **order listed** 1-2-3 – click the link to the tree - When going through each FC T/shooting, some steps may be covered in prior FC's – Don't assume by fixing FC#1 it fixes 2 & 3

https://quickserve.cummins.com/qs3/portal/service/index.html

Cummins Connect QuickServe Online | Content f... Cummins QuickServe Online Aftertreatment Diesel Particulat... Solution Set

File Edit View Favorites Tools Help

★ QSOL Manuals ▼ Academy CARE-TSR 164 Cummins Bridgeway Intra... Free Hotmail QuickServe Online Conten... Suggested Sites ▼ Web Slice Gallery ▼

Cummins **QuickServe Online**

Search ESN 73803948 for: Search

Search All Engines for: Search

pp279 (Distributor/Distributor) My Profile | Contact Us | Logout

Parts Service Warranty My Profile Products Promotions News

Engine Content

Content For Engine Serial Number (ESN): 73803948 >

How do I locate my ESN?
Engine Model Search
Part Number Supersessions
VIN To ESN Reference
TSB Smart Filter

Generator Set / Alternator Content

Content for Serial Number (SN): >

OR

Current Plant: None
Current Model: None
Current Spec: None

Search by Plant, Model, or Spec 🔍

Literature Search
PGBU Smart Filter
Bill of Material - By Serial Number
Bill of Material - By Part Number
SRT User Tool
DDA - Drawings
Order Hardcopy Manuals
PGBU Warranty System

Information

Edit Shopping Cart 🛒

Engine Service Information (73803948 - ISB6.7 CM2350 B101)

Service Training update for Cummins Guidanz™ Web and Guidanz Mobile. [Click here](#) for more information.

Manuals Dataplate Campaigns TRPs ATCs Service Bulletins TSBs What's New

Service Tools Maintenance Fault Code Search Symptom Search Related Information Safety

Engine Fault Code Analyzer Engine Fault Code Search SPN/FMI To Fault Codes

Enter all active fault codes. Also enter all inactive fault codes with more than one count logged in the last 25 engine hours. [Help](#)

Prioritized Fault Code

ORDER	PRIMARY FAULT CODE	RELATED FAULT CODES
1	3375	
2	3376	
3	2639	

Go Back Start Over

If any additional fault codes are still active after validating the first three primary fault codes, then re-enter the remaining fault codes.

Clearing Fault Codes

- **DO NOT CLEAR** fault codes with the hope that will fix the issue –
- You must look at everything!

“conditions for running the diagnostics”

“conditions for setting the fault code”

“actions taking when fault code is active”

“conditions for clearing the fault code”

Doing a “Reset All” may not clear the MIL lamp and eliminate the de-rate. It is possible the conditions for running the diagnostics (trips) have not been met so it will not meet the conditions for clearing the FC and associated de-rate

The fault code may clear, but MIL lamp could remain on, with de-rate still active

Clearing Fault Codes

- ***DO NOT Clear fault codes if you are going to sending it to a dealer or Cummins Distributor for repair***
- ***No repair can be made without codes in the ECM***
- Writing down the codes only provides a very small portion of what is needed in proper troubleshooting
- If you do clear codes – ALWAYS create a Insite work order (Image)

The ECM image can be sent to the repair location in .eif format and loaded into that locations Insite program for review

If a FC diagnostic step states “**requires that ALL solutions be performed**” – Every step must be completed

Even if you find EGR ports plugged on step (5) all of the following steps must be verified (9) – ECM calibration rev history check is almost always last, generally “this helps prevent” future occurrences but may not always fix the current issue by just calibrating

Troubleshooting Summary

- 1 Fault Code 3375 requires that ALL solutions be performed
- 2 Check for primary fault codes
- 3 Restricted intake air filter
- 4 Damaged or missing aftertreatment DPF differential pressure sensor tube
- 5 Plugged EGR differential pressure sensor supply ports
- 6 Aftertreatment DPF differential pressure sensor stuck in-range
 - 6.1 Perform the Snap Acceleration Test - Aftertreatment Connected
- 7 Aftertreatment temperature sensor stuck in-range
- 8 Aftertreatment Diesel Particulate Filter Regeneration Analyzer Test
- 9 ECM calibration revision history check

Pls Note – Aftertreatment connected



Diagnostic Tests



Insite – Tests

Example - FC 3375 – Step 8 directs to run DPF regen analyzer test

Aftertreatment DPF Regen Analyzer Test 014-027 Shop Manual

The Aftertreatment Diesel Particulate Filter (DPF) Regeneration Analyzer Test is a diagnostic test used to identify malfunctioning engine performance components. The test is located in INSITE™ electronic service tool under the Diagnostic Tests tab.

- This test will take approximately 30 to 60 minutes to complete.
- The test status will be shown in the status window.
- Test description window
- Instructions window
- Status window
- Status bar - shows progress of the test (will disappear when the test is complete).



014-027 Aftertreatment DPF Regen Analyzer Test

The Aftertreatment Diesel Particulate Filter Regeneration Analyzer Test requires:

- INSITE™ electronic service tool version 8.4.1
- Minimum of 250 MB of available computer hard drive space before starting the test.

The Aftertreatment Diesel Particulate Filter Regeneration Analyzer Test is only to be used when directed by published troubleshooting.

During the test is will have a status box – This section is used to assist troubleshooting abort messages from the Status Window and displays failure messages in numerical order

- **Abort messages** - displayed in the Status Window. The most recent message will appear at the bottom.
- **Analyzing the data** - Troubleshooting for individual messages is contained in the table. Multiple messages are to be addressed in ***numerical order***. (Section 014-027)

014-027 Aftertreatment DPF Regen Analyzer Test – Shop Manual

- **(455-014-008) Engine Testing (In Chassis)**
- (100-014-010) Crankcase Blowby, Measure
- (493-014-016) Aftertreatment Diesel Particulate Filter (DPF) Regeneration Test
- (493-014-017) Snap Acceleration Test
- (99-014-024) Fluorescent Tracer Dye Test
- (493-014-025) Aftertreatment Selective Catalytic Reduction (SCR) System Test
- **(455-014-027) Aftertreatment Diesel Particulate Filter Regeneration Analyzer**

Section 16 - Mounting Adaptations - Group 16▼

Section 17 - Miscellaneous - Group 17▼

Section 19 - Electronic Controls - Group 19▼

Section L - Service Literature▼

[Table of Contents](#)

[Contact Us](#)

014-027 Aftertreatment Diesel Particulate Filter Regeneration Analyzer

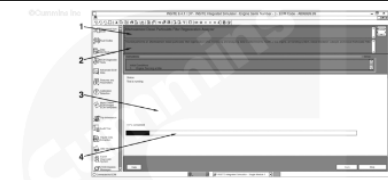
General Information

The Aftertreatment Diesel Particulate Filter (DPF) Regeneration Analyzer Test is a diagnostic used to identify malfunctioning engine performance components. The test is located in INSITE™ electronic service tool under the Diagnostic Tests tab.

This test will take approximately 30 to 60 minutes to complete.

The test status will be shown in the status window.

1. Test description window
2. Instructions window
3. Status window
4. Status bar - shows progress of the test (will disappear when the test is complete).



LARGE

Rectangular Snip

If the test fails, refer to shop manual for explanation of individual messages.

Multiple messages are to be addressed in numerical order.

The test has 23 possible messages

014-027 Aftertreatment Diesel Particulate Filter Regeneration Analyzer		
4	EGR differential pressure is above specification.	<p>Perform all the following checks:</p> <ul style="list-style-type: none">• Clean and inspect the EGR valve. Refer to Procedure 011-022 in Section 11.• Clean and inspect the EGR differential pressure sensor. Refer to Procedure 019-370 in Section 19.• Check the EGR differential pressure sensor reading in INSITE™ electronic service tool with the keyswitch on and engine off. If the EGR differential pressure sensor is not 0 ±2 kpa [0 ±0.3 psi], replace the sensor. Refer to Procedure 019-370 in Section 19.



SCR System Test



Insite Tests - SCR – Test is checking SCR system

Aftertreatment Selective Catalytic Reduction (SCR) System Test 014-025

ISB/B6.7 – (2013MY – Current)

Diagnostic test is used to identify malfunctioning aftertreatment SCR system components. The test is located in INSITE™ electronic service tool under the diagnostic tests tab.

The test consists of the following subtests.

- Aftertreatment Warm-Up and Diesel Exhaust Fluid (DEF) Dosing System Test
- Aftertreatment SCR Deposit Burn Test
- Aftertreatment Nitrogen Oxides (NOx) Sensor Rationality Test
- Aftertreatment SCR Catalyst Test.
- The SCR system test will display the status of each of the subtests in the subtest status window.
- The SCR system test will take approximately 60 to 80 minutes to complete.

014-025 Aftertreatment Selective Catalytic Reduction (SCR) System Test

Requirements

Check the engine control module (ECM) calibration revision history for calibration updates for this test. If the ECM does not contain that revision or higher, update the calibration. [Refer to Procedure 019-032 in Section 19.](#)

The SCR system test should only be used when directed by a service procedure, fault code troubleshooting tree, symptom troubleshooting tree, or expert diagnostic system (EDS).

The SCR system test has status message box – refer 014-025 for error messages if will not complete
Section 014-025 gives details on pass/fail results for each section test

*Refer to **TSB170033** if engine runs rough during test – Requires ECM update to correct*

Since we have open campaigns for SCR replacement on most ISB CM2250 MY2010-2012 and ISB CM2350 – MY2013-2014 - If directed to run the SCR test on one of the engines, check status on QSOL for possible coverage

014-025 Aftertreatment Selective Catalytic Reduction (SCR) System Test

Insite will display pass or fail – Depending on what portion of the test fails will determine the next step – Repair manual section 014-025 has details and direction

The screenshot displays the Cummins Insite software interface for the Aftertreatment SCR System Test. The main window shows a 'Monitor' table with the following data:

Name	Value	Unit
Aftertreatment Injector Status	Closing	
Aftertreatment Diesel Particulate Filter Soot Load Status	Normal	
Aftertreatment Diesel Particulate Filter Inlet Temperature	810.5	°F
Aftertreatment Diesel Exhaust Fluid Pressure	126.9	psi
Aftertreatment Inlet NOx	134	ppm
Aftertreatment SCR Outlet Temperature	910	°F

The 'Test Status' window shows the following results:

Test Name	Status
Aftertreatment Warm Up and DEF Charging System Test	Passed
Aftertreatment SCR Deposit Burn Test	Deposit Burn Complete
Aftertreatment NOx Sensor Reliability Test	Outlet NOx Sensor Passed
Aftertreatment SCR Catalyst Test	Passed

The 'Status' section indicates: 'The test is running.' and 'The test has completed. Please make the key switch and restart the engine to restart the test.'

A pop-up message box titled 'Cummins Insite' displays the warning: 'CAUTION: Allow the Engine and the Aftertreatment system to cool down.' with an 'OK' button.

Numbered callouts indicate:

1. Subtest Status - All Passed
2. Main Status Window Shows Test Complete
3. Pop-up message appears when test is complete.

SMALL | MEDIUM | LARGE

Aftertreatment SCR System Test Screen



Regen Updates



Insite Support QuickServe – Online Training

Insite Support 1-800-Cummins

Issues or problems with Insite or questions – Call **1-800-Cummins** (1-800-286-6467) or go to www.cummins.com

Insite or QSOL renewal or subscription 1-888-861-5123 or subscription.support@cummins.com

Insite use reference training document – Go to www.cummins.com – Parts & Service – Insite – Training materials

The screenshot shows the Cummins website with the 'Parts & Service' menu item circled in red. A blue arrow points to the 'Insite' link in the 'DIGITAL PRODUCTS & SERVICES' section. The 'Insite' product page is displayed, featuring a list of features and links to 'Software Downloads', 'Software Licensing', and 'Training Materials'. A blue arrow points to the 'Training Materials' link. The bottom of the page shows a Windows taskbar with the date 8/5/2020 and time 1:25 PM.

Navigation Menu: Products, **Parts & Service**, About, News, Careers, Support

SALES & SERVICE

- Find a Local Dealer or Distributor
- Request a Sales Quote
- Schedule Service
- Service Specials & Offers
- Find a Coach Care RV Service Center
- Contact Customer Assistance
- Credit Application

PARTS

- Find a Local Dealer or Distributor
- Buy Parts Online - Canada
- Buy Parts Online - US
- Request a Parts Price Quote
- Parts Specials & Offers
- Benefits of Genuine Cummins Parts
- ReCon Engines & Parts

MANUALS & TECHNICAL DOCUMENTS

- Find a Local Dealer or Distributor
- Find Documents Online
- RV Generator Manuals
- Contact Customer Assistance

DIGITAL PRODUCTS & SERVICES

- Connected Diagnostics
- View All
- EDS
- Guidanz
- Incal
- Inline
- Insite**
- Powerspec

Features:

- Quick access to trip information
- Adjust parameters and review/clear fault information quickly and
- Easy-to-follow troubleshooting assistance
- Wiring and sensor location diagrams
- Store engine and trip information for future use, or as programmir

Software Downloads

- Software Licensing
- Training Materials

SOFTWARE DOWNLOADS

Your company's firewall may inhibit the installation of these files. Please contact your system administrator for assistance if you experience any issues.

Insite Overview – You can print to PDF or read online

TRAINING MATERIALS

 **INSITE Overview**, updated 3/19/2018 (Size: 6 MB)

Visão Geral do INSITE, in Brazilian Portuguese (Size: 7 MB)

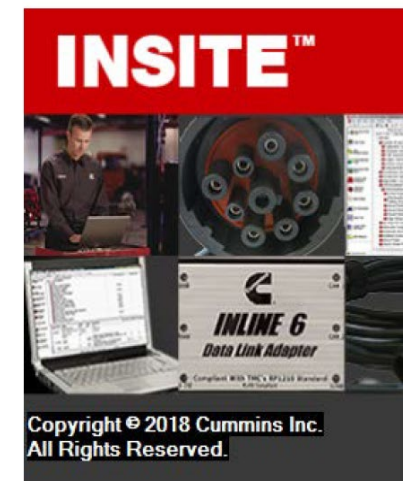
 **Licensing & License Configuration Tool Overview**, updated 4/14/14 (Size: 3.8 MB)

 **INSITE 8.0.3 New Feature Training: ECM Code Search**, updated 5/11/15 (Size: 0.9 MB)

 **How To Export/Backup/Email Work Order Image(s)** (Size: 0.5 MB)

Contents

- [Getting Started](#)
- [Launching & Licensing](#)
- [Configuring Options](#)
- [ECM Multi-Level Security](#)
- [ECM Connections](#)
- [Fault Codes & Fault Information System](#)
- [Data Monitor Logger](#)
- [ECM Diagnostic Tests & Advanced ECM Data](#)
- [Features & Parameters](#)
- [Calibration Selection & ECM/PDD Code Search](#)
- [Work Orders, ECM Images & Templates](#)
- [Trip Information](#)
- [Audit Trail](#)
- [Inquire Data Extraction](#)
- [OBD Monitors](#)
- [Expert Diagnostic System \(EDS\)](#)
- [J1939 Datalink Messages](#)
- [Guidanz Web \(formerly CSS\)](#)
- [Support](#)



QuickServe Online Service Training

You must be registered with individual login ID's and passwords – No extra charge for access

Log in using you QSQL account login and click the link to the training database

Content

Content for Serial Number (SN):
 >

OR

Current Plant: None
Current Model: None
Current Spec: None

Search by Plant, Model, or Spec

Literature Search
PGBU Smart Filter
Bill of Material - By Serial Number
Bill of Material - By Part Number
SRT User Tool
DDA - Drawings
Order Hardcopy Manuals
PGBU Warranty System

Information

Edit Shopping Cart
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My QSQL Help Tickets
Frequently Asked Questions
Related Links
Publications Catalog

Translations
Service Support in Extreme Conditions

Training

QuickServe Online
Parts Professional
Service Training
QuickServe Advantage

My Applications

Manuals

Wiring Diagrams
[\(4021637\) ISL G CM2180 Wiring Diagram](#)

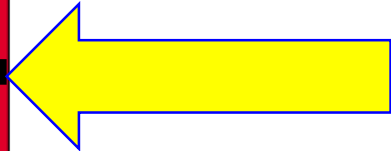
Fault Code Troubleshooting Manual
[\[UPDATED\] \(4021658\) ISL G CM2180 Fault Code Troubleshooting Manual](#)

Service Manuals
[\(4021649\) ISL G CM2180 Service Manual](#)
[\(5411406\) Fluids for Cummins® Products Service Manual](#)

Owners Manuals
[\(4021648\) ISL G CM2180 Owners Manual](#)

Operation and Maintenance Manuals
[\(4021650\) ISL G CM2180 Operation and Maintenance Manual](#)

Installation Instructions
[Steel Piston Kit Installation Instructions](#)
[New Engine Control Module Installation Instruction](#)
[Oxygen Sensor Installation Instruction for EURO VI Certified Engines](#)



QSOL – Online Training



Technician
Home Page

Welcome to Cummins Service Training, Jack Szalka (A320100/pp279) EAST - NEW HUDSON (02857)

Training Programs

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Show 10 entries

You can search by Key Words

☐ Only My Location Programs ☒ All Programs

Search:

Click All Programs

Program ID 	Color	Program Name	Completed Date (m/d/y)	% Completed	Product Filter
<div>2006-14Q</div>	Green	INSITE Update Qualification	09/13/2013	100	

Showing 1 to 1 of 1 entries (filtered from 688 total entries)

Previous 1 Next

QSQL – Click Hyperlink to start – Estimated course time is listed for each module and for entire course

WELCOME TO CUMMINS SERVICE TRAINING, YOUR ONLINE (2006/06/01) / EASY - NEW PROGRAM (2006/06/01)

Program Guide Details

Qualification Program ID: 2006-14Q Program Name: INSITE Update Qualification

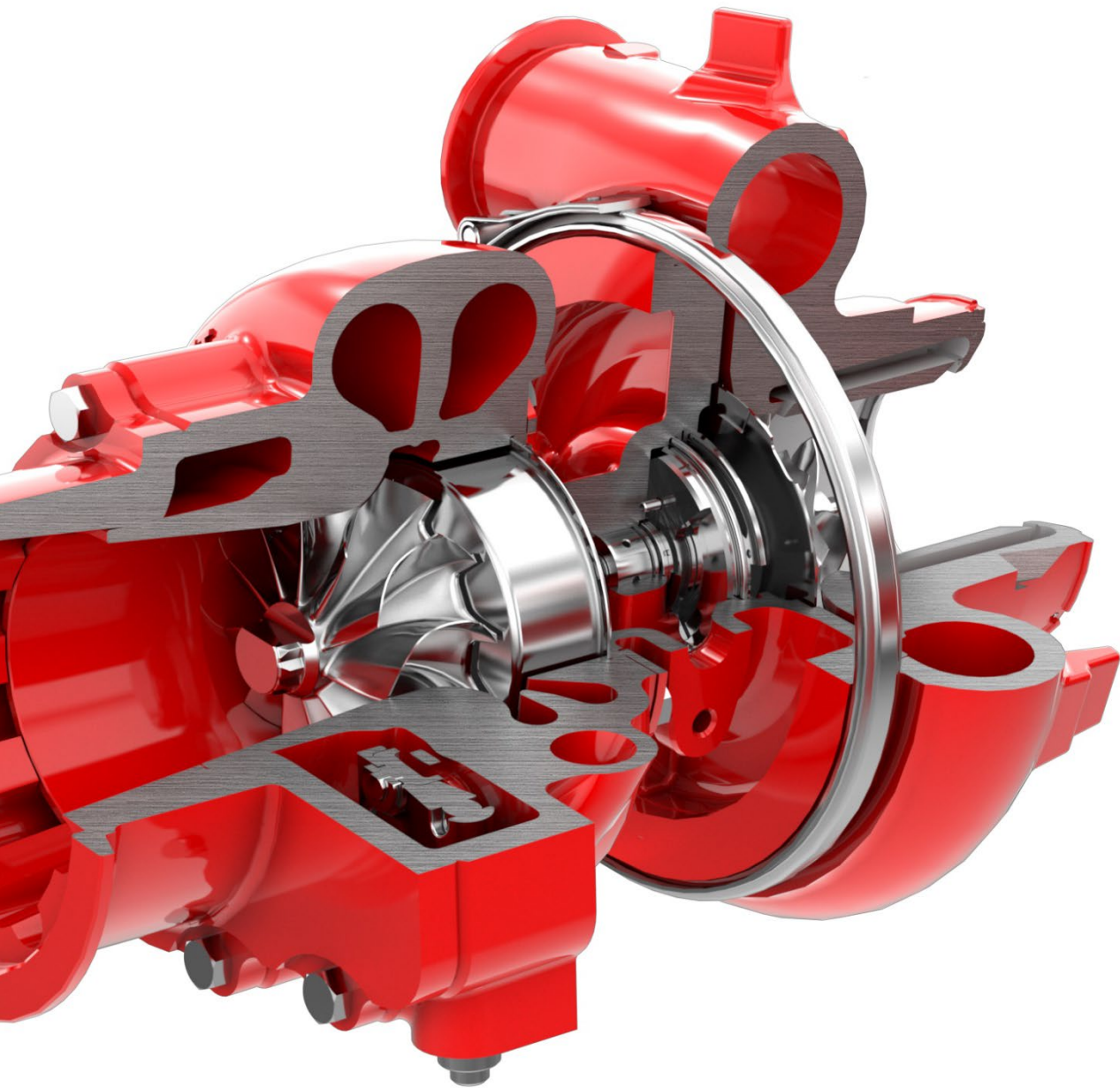
Copy Excel CSV PDF

Download Program Guide For CD

Search:

Course ID	Course Name	Course	Course Time	Course Type	CD ROM ID	Completed Date
1027	Insite - Windows Familiarization	1	0.3 hours	Online	Gen-6 (4091911)	06/29/2007
1028	Insite Registering And Fuctionality	2	0.2 hours	Online	Gen-6 (4091911)	06/29/2007
1029	Insite - Operation	3	0.6 hours	Online	Gen-6 (4091911)	06/29/2007
1030	Insite - Read And Reset Fault Codes	4	0.3 hours	Online	Gen-6 (4091911)	06/29/2007
1031	Insite - Diagnostic Operation	5	0.2 hours	Online	Gen-6 (4091911)	06/29/2007

1027	Insite - Windows Familiarization	1	0.3 hours	Online	Gen-6 (4091911)	06/29/2007
1028	Insite Registering And Fuctionality	2	0.2 hours	Online	Gen-6 (4091911)	06/29/2007
1029	Insite - Operation	3	0.6 hours	Online	Gen-6 (4091911)	06/29/2007
1030	Insite - Read And Reset Fault Codes	4	0.3 hours	Online	Gen-6 (4091911)	06/29/2007
1031	Insite - Diagnostic Operation	5	0.2 hours	Online	Gen-6 (4091911)	06/29/2007
1032	Insite - Reading And Adjusting Features And Parameters	6	0.3 hours	Online	Gen-6 (4091911)	06/29/2007
1033	Insite - Ecm Calibration	7	0.3 hours	Online	Gen-6 (4091911)	06/29/2007
1034	Insite - Multimodule Calibration	8	0.2 hours	Online	Gen-6 (4091911)	06/29/2007
1035	Insite - Ecm Data	9	0.3 hours	Online	Gen-7 (4091912)	06/29/2007
1036	Insite - Work Orders	10	0.2 hours	Online	Gen-7 (4091912)	06/29/2007
1037	Insite - Printing And File Manipulation	11	0.2 hours	Online	Gen-7 (4091912)	06/29/2007
1057	INSITE 7.2 Update	12	0.2 hours	Online	Gen-17 (4091958)	02/01/2010
1140	INSITE 7.5 Update	13	0.4 hours	Online	Gen-25 (4092012)	09/13/2013
All	Total Hours		3.7 hours	Hours Remaining		0 hours




QuickServe – Parts

New Parts Catalog View – parts.cummins.com - We are converting over and the original QSQL parts look-up still works but migrate over

The screenshot displays the Cummins QuickServe Online web application. The top navigation bar includes the Cummins logo and the QuickServe Online branding. Below this, a red navigation bar contains links for Parts, Service, Warranty, My Profile, and Products. The left sidebar is divided into two sections: 'Engine Content' and 'Generator Set / Alternator Content'. The 'Engine Content' section includes a search for Content For Engine Serial Number (ESN) with the value 73691801, and links for 'How do I locate my ESN?', 'Engine Model Search', 'Part Number Supersessions', 'VIN To ESN Reference', and 'TSB Smart Filter'. The 'Generator Set / Alternator Content' section includes a search for Content for Serial Number (SN), an 'OR' option, and links for 'Current Plant: None', 'Current Model: None', 'Current Spec: None', 'Search by Plant, Model, or Spec', 'Literature Search', and 'PGBU Smart Filter'. The main content area is titled 'Engine Parts Information (73691801 - ISB6.7 CM2350 B101)'. It features a row of tabs: 'Parts Catalog', 'Dataplate', 'Add Upfit', 'Emissions Catalog', 'Campaigns', 'TRPs', and 'ATCs'. Below this, a row of tabs includes 'Product Announcements', 'ReCon', and 'Related Information'. The 'NEW PARTS CATALOG VIEW' tab is highlighted with a blue circle. The main content area displays a message: 'The parts catalog has moved to parts.cummins.com. Use parts.cummins.com for all your parts research as the legacy parts catalog views **will be removed from QuickServe Online**. Both legacy views are available along with all the catalog information found previously within this tab. Any tools in the other Parts tab will not be removed until the transition of the tool is completed. A quick link back to QuickServe Online will be available in the upper right corner of parts.cummins.com for easy navigation between the two sites. For more information on this transition, please read the article dated March 31, 2020 in the [News](#) tab.'

Layout of parts.cummins.com

**Genuine Parts**

?

73691801

Q

Home | Products ▾ | Resources ▾ | Pp279 ▾ | Pick List

Home / Engine Parts Search / System View

≡

Parts Catalog - System View ▾

Search... Reset

Expand

AFTERTREATMENT >

AIR INTAKE >

BASE ENGINE >

COMPRESSORS AND PUMPS >

CONTROLS >

COOLING >

DRIVES AND MOUNTINGS >

ELECTRICS >


EXHAUST >


?


73691801


☆


Q


**AFTERTREATMENT**


**AIR INTAKE**

**BASE ENGINE**

**ISB6.7 CM2350 B101**







Rectangular Snip



73691801

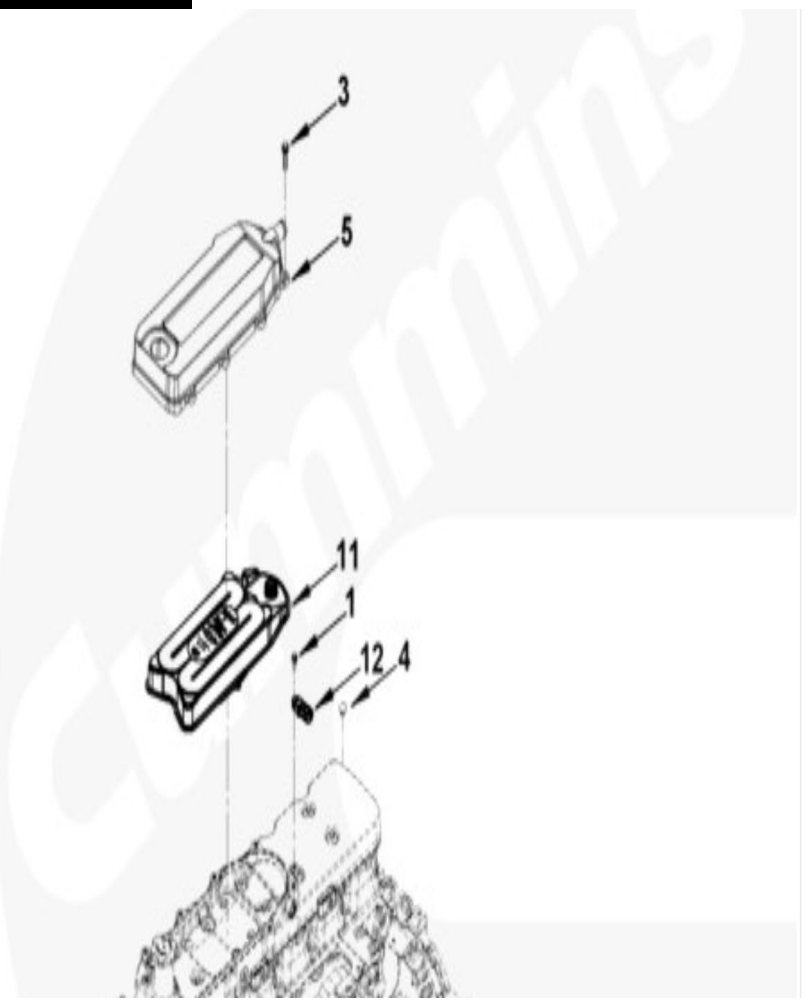
☆

Graphics for Crankcase Breather

Option	Description	Group	Plant Code
BR9311-03	Crankcase Breather	03.02	87

Remarks

Crankcase Breather
Engine Family: B Series
Breather Type: Open
Filter Supply Method: Mounted
Fuel Type: Diesel
Plumbing Mtg Responsibility: Cummins
Breather Loc: Valve Cover
Engine Cylinders: 6
Engine Aspiration: CAC, Turbocharged
Breather Drain Loc: External Oil Drain Tube in Crankcase



Ref	Part Number	Description
1	3968475	Screw, Hex Flange Head Cap
2	3900630	Screw, Hex Flange Head Cap
3	3902023	Screw, Hex Flange Head Cap
4	3905368	Expansion Plug
5	4989994	Breather Cover
6	3939258	Cover Plate Gasket
7	4931725	Accessory Hole Cover
8	4932701	Plain Hose Coupling
9	4934496	Plain Hose Coupling
10	5255740	Lubricating Oil Drain Tube
11	4936636	Breather Element
12	4984575	Pressure Sensor

Rectangular Snip

Cummins Bulletins

Refer to the following bulletins for Cummins engines

[3379001](#) – **Fuels for Cummins Engines** –

Specs/Properties/Analysis/Additives/Biofuels/Filtration/Natural Gas/NG-LPG Spec

[3810340](#) – Link to [5411406](#) - **Oil & Oil Analysis Recommendations** –

Classification/Grades/Specs/Sampling/Analysis Interpretation

[3666286](#) – Link to [5411406](#) - **Cummins Requirements for Cooling System Extended Service Intervals** – & [3666132](#) – Link to [5411406](#) – **Coolant Requirements and Maintenance**
Specs/Testing/Maintenance/Cleaning/Filtration

[4021566](#) - **Diesel Exhaust Fluid (DEF) Specifications** for Cummins® Selective Catalytic Reduction (SCR) – Specs/Handling/Storage/Testing

[3379000](#) – **Air for your engine**

Q+A

