



**PARTS, SERVICE
and SUPPORT**

- CUSTOMER CARE
- WARRANTY
- MCI PARTS STORE
- SERVICE CENTERS
- TECHNICAL SUPPORT**
- Technical Training Institute
- Service Bulletins
- Maintenance Tips
- Preventive Maintenance
- Quick Reference Charts
- Publications

-
- Emergency Roadside Assistance
 - Locate a Service Center
 - Locate your Customer Solutions Team
 - Parts Credit Application



MAINTENANCE MATTERS — Cleaning up: Keeping your DPF in A1 shape

Your new MCI coach is equipped with the latest "clean-air" technology available to the market today. In addition to being mandated by the U.S. government, its use helps maintain a cleaner environment for all of us.

But, as with all new technologies, there is a short learning curve required in order to keep it functioning properly. Fortunately, it's fairly straightforward and easy. While the system is designed to operate for more than 150,000 miles without major service requirements, a periodic "cleaning" of the Diesel Particulate Filter (DPF) system is required to keep engine performance from suffering.

Most of this cleaning is done automatically as the coach is driven in its normal manner. However, certain sustained operating conditions can require a more interactive cleaning process. Luckily the system is also designed to alert the driver to its operation and service needs before they become critical and the engine shuts down, possibly requiring the coach to be towed.

Heed the lights, use the right fuel and oil

Failing to understand what is required to operate a DPF-equipped coach can be costly. The requirements aren't difficult to learn, but they are critical. First of all, it's vital that you use less than 15 PPM **Ultra Low Sulfur Diesel (ULSD) fuel** and **low-ash oil**, SAE rating CJ-4, in order to be EPA compliant. Additionally, failure to do so may result in shortened lifecycle of the DPF system.

Just as importantly, on your new coach, you should have noticed two or three new alert lights on your instrument panel, depending on your particular engine.

Training the driver to know and understand what the new dash telltale lights mean is extremely important. Acting on this information may save costly down time. These telltales are:





NO CHANGES TO TELLTALE LAMPS:	E/J/D Vansco	D Commuter I/O
Yellow Check Engine Lamp		
Red Stop Engine Lamp		
NEW TELLTALE LAMPS:		
Regeneration Lamp (DPF)		
High Exhaust Temperature Lamp (HET)		
Malfunction Indicator Lamp (MIL)(Detroit Diesel Only)		

As a diagnostic aid, it is important to note the **SEQUENCE** in which the lights come on. An engine system related failure can disable the **REGEN** system from normal function. During normal driving, the DPF system is designed to be seamless and trouble free to the operator.

**AN ILLUMINATED CHECK ENGINE LIGHT
CAN PREVENT NORMAL DPF SYSTEM FUNCTION**

What the operator needs to do when the new telltales are on.

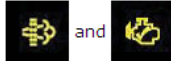
WHEN YOU SEE THIS:	Action required
or	High Exhaust Temperature light — no action required. This telltale is only active below 5 mph and when the exhaust temperature is greater than 750°F (400°C). This telltale can be on in conjunction with other DPF telltales.
or	For coaches with Series 60 engines only. Indicates a malfunction within the emissions system. Seek service from a

-  or  malfunction within the emissions system. **SEEK SERVICE** from a Detroit Diesel service facility.
-  or  This indicates a regeneration is required. If possible, maintain road speed above 5 MPH for a minimum of 20 minutes for the system to do an automatic regen. If this is not possible, and the DPF light is on solid, perform a stationary regen **within 2 hours**. If light is **flashing**, perform a stationary regen within 1 hour.

When these combination of telltale lights are on, **ACTION MUST BE TAKEN!**

WHEN YOU SEE THIS:

E / J / D Vansco



or

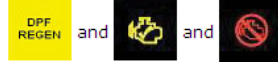
D Commuter I/O



Action required: Engine power is **de-rated**, regeneration required. Move the coach to a safe location and perform stationary regeneration within 30 minutes, or operate the coach above 5mph until the regen light goes out.



or



Action required: Engine power de-rated or engine shutdown has been engaged. Regeneration locked out and **cannot** be performed; **service** is required. Contact an authorized engine manufacturer for assistance. Red "check engine" appears SOLID first. Flashing indicates 30 seconds to shutdown. Once shut down, coach may need to be towed for service.

**IF CEL LIGHT IS ON BEFORE THE DPF LIGHT,
REGENERATION OF THE DPF UNIT IS DISABLED**

***** Towing required by manual regeneration is not covered under warranty *****

How to do a Parked or Stationary Regeneration

NOTE – THE FOLLOWING CAUTIONS SHOULD BE OBSERVED:

- No persons, objects or combustible materials within two feet of the tailpipe during the regeneration process
- The operator must remain within control range of the coach at all times during the regeneration process
- Exhaust extraction hoses should not be used
- Indoor / Garage regeneration should be avoided

To initiate the regeneration process the operator should ensure that:

1. Normal operating temperature, > 180°F
2. Is at base idle speed (*not fast idle*)
3. Turn HVAC system OFF
4. Coach is parked in safe location
5. Depress foot brake
6. Release parking brake
7. Shift transmission into gear
8. Return transmission to neutral
9. Apply parking brake
10. Release foot brake

- Locate the manual **REGENERATION** switch inside the RH rear service door. Press UP and hold the switch for up to 20 seconds or until the engine idle speed increases. The engine will increase speed to between 1400 and 1600 RPM.
- Return the switch to the **CENTER** position
- Monitor the engine operation during the entire process. The HET light on the dash should come on after a few minutes as an indicator that the exhaust gas temperature is VERY HOT, and stay on for the duration of the Regeneration process. The entire process may take from 20 to 40 minutes or more, depending upon soot levels.



DO NOT ALLOW THE SWITCH TO PASS THE CENTER POSITION UPON RELEASE AS THIS MAY DISABLE THE REGENERATION

The engine will return to normal idle speed once the regeneration is complete or the cycle is interrupted. Verify that the DPF and/or CEL lights are OFF indicating that the regeneration was successful. If the DPF lights are still on repeat the regeneration switch sequence and attempt an additional regeneration cycle.

If regeneration is not initiated when the regen switch is held in the up position, cycle the park brake off and on, shift the transmission in and out of gear, and try again.

The DPF lamp will turn on for one second, then turn off for the duration of the regeneration. Engine speed will rise to between 1400 and 1600 RPM.

Regeneration will last approximately 20 to 40 minutes, depending on the initial level of soot in the DPF. When the regeneration is complete, all telltales will be off and the engine RPM will return to idle. For coaches with CAT engines, the cooling fan will turn off, and a historical event code will be logged.

Be kind to your engine: Limit your idling time

Extended idling IS NOT recommended with the 2007 EPA equipped engine package. The slower engine speed and lower combustion temperatures accelerate the soot loading of the DPF unit.

****Extended (overnight) idling can result in a shutdown engine, requiring dealer level servicing, and is NOT covered by the coach or engine warranty. ****

If you have Proheat, use it! Extended idle time, depending on engine operating temperatures, may shorten the duty cycle of the regeneration process, and may be amplified during extreme cold weather conditions.

Proheat is not only used to maintain coolant temperature while the engine is running, it can be used as an engine pre-heater on cold days.

Turn Proheat on 30 minutes prior to engine startup depending on ambient temperature.

To turn Proheat on, hold the momentary dash-mounted rocker switch in the up position for 3 seconds. Proheat will run for approximately 90 minutes, or until battery voltage drops below 10 volts, the coach runs out of fuel or there is a fault code. Within the 90 minutes, Proheat will cycle on and off to maintain coolant temperature between 150 and 185 degrees Fahrenheit.

For proper maintenance of the Proheat system, please refer to Service Bulletin [2913](#).

Quick-reference cards are available from MCI customer service by calling 800-323-1290. For the D coach I/O systems, ask for 03-15-5871A. For E / J / D Vansco systems, request 03-15-5870A. For additional information, please see the latest version of MCI's Service Bulletins [2959](#), [2963](#), [2964](#), [2965](#), [2966](#) and [2969](#). The bulletins can be downloaded at <http://service.mcicoach.com/ServiceInfo/ServiceBulletins.nsf>

Whenever you are working on your coach, always consult your owners and / or maintenance manual for full instructions and follow all safety precautions. If you have additional questions that are not addressed in your maintenance manual, consult your nearest [MCI Service Center](#) or call [MCI's Technical Call Center](#).

DEALER LEVEL of SERVICE

As has been mentioned, there are conditions beyond the operator's direct influence. In these conditions it will be necessary for a **AUTHORIZED SERVICE DEALER** to attend to the needs of the engine and DPF system. Their computer software will be required to perform any necessary service operations.

**** SPECIAL NOTES FOR CATERPILLAR SERVICE ****

If the CATERPILLAR 'ET' software is used for a forced REGEN process, the J1939 body control must be turned OFF for the REGEN process, and restored to the ON state at the end of service. This is to ensure the correct coordination between the engine and coach software programs.

The MCI coach software inhibits ACTIVE regeneration if the coach is operated below 5 MPH for more than 5 minutes. This process is recognized by the CATERPILLAR software as an **INHIBIT SWITCH ACTIVE** condition and sets a corresponding code (3703-31) in the engine ECM. Multiple counts of this code will be present. This is a NORMAL condition for MCI coaches, and is **NOT** related to the regeneration / inhibit switch located in the RH service door.

The FYI from MCI editorial staff values your feedback. Please e-mail any suggestions, comments, or ideas for future articles to fyi@mcicoach.com.

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