

# FEWER REGENS. ULTIMATE EFFICIENCY.

DETROIT® DD5™ AND DD8™

## DETROIT TECHNOLOGY: PROVEN IN THE NUMBERS – AND ON THE ROAD

Every school day runs on safe, dependable buses, and every bus is powered by a strong, dependable engine. Here are the reasons – and numbers – behind why Detroit diesel technology is miles ahead of the competition.

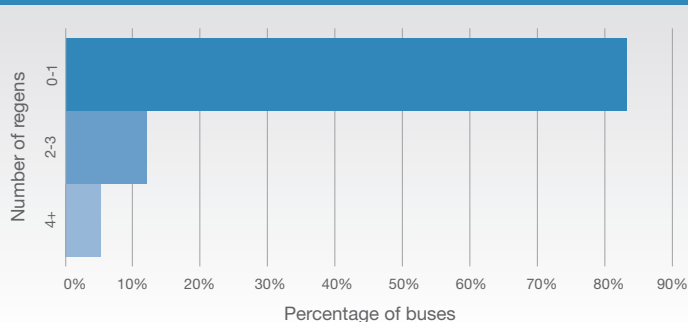
### THE DETROIT DIFFERENCE: VARIABLE CAM PHASING

Fewer regens. That's what you can expect from the Detroit DD5 and DD8 engines. It's all thanks to our proprietary variable cam phasing technology. By keeping your aftertreatment system at the right temperatures during low-speed operation, variable cam phasing improves regen performance and overall aftertreatment system performance, leading to more time on the road.

### UNDER THE HOOD – AND INTO THE DATA

The DD5 and DD8 are designed to bring power, efficiency and reliability to the road every day.

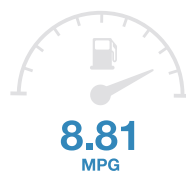
#### LESS FREQUENT MANUAL REGENS WITH DETROIT ENGINES



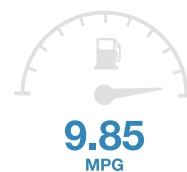
### DETROIT EFFICIENCY: FEWER REGENS AND EXCELLENT FUEL ECONOMY

Detroit engine technology is built on a foundation of fuel efficiency. And since the manual regen process can use fuel, having fewer regens takes that efficiency even further.

Average MPG  
(driving and idle)



Average  
driving MPG



31%	Buses with 10 MPG or greater
68%	Buses with 9 MPG or greater
36%	Idle time
64%	Driving time
2.6%	DEF usage

\*Data pulled from a sample of buses across the U.S. and Canada. Each bus had a DD5 or DD8 engine and was observed over the course of at least 10,000 miles of service.





## REGENS: A CLOSER LOOK

As part of 2007 EPA requirements, diesel-powered vehicles, including school buses, were equipped with diesel particulate filters (DPFs) that collect soot to decrease exhaust emissions. Although DPFs lead to cleaner emissions, the soot that builds up within them must be cleared out regularly.

### WHAT ARE REGENS?

A regeneration – or regen – is the process that oxidizes diesel particulate, or soot, from the DPF, turning it into ash.

### PASSIVE REGENS

- Activation: automatic
- Exhaust in the engine raises the temperature of the DPF enough during normal operation to oxidize the soot (662 F°).
- Due to their stop-and-go nature, some school bus engines may not generate enough heat to initiate a passive regen.

### MAINTENANCE TIP:

If the engine becomes overloaded with soot (approximately 85% full), the DPF must be removed and cleaned or replaced altogether.  
Recommendation: clear any ash from the DPF during routine maintenance.

### ACTIVE REGENS

- Activation: automatic
- An active regen is triggered when a pressure sensor in the engine detects soot in the DPF.
- Extra fuel is supplied to the diesel oxidation catalyst (DOC) to increase engine temperature and begin the regen process.

### MANUAL REGENS

- Activation: requires driver action
- When soot inside the DPF reaches a high level, the bus is forced to park and undergo a manual regen for about 50 minutes.
- Engine RPMs increase, and extra fuel is supplied to the DOC to increase the temperature enough for a manual regen to occur.
- When a manual regen is needed, the driver will see a “check engine light” in their dashboard.
- Manual regens are also referred to as parked regens.



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