
Monitoring the Effectiveness of Diesel Injector & DPF Flush on Diesel Particulate Filter Regeneration Frequency

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MONITORING THE EFFECTIVENESS OF DIESEL INJECTOR & DPF FLUSH ON DIESEL PARTICULATE FILTER REGENERATION FREQUENCY

Abstract

This study evaluates the impact of Power Service Diesel Injector & DPF Flush on the regeneration frequency of diesel particulate filters (DPFs) on a 2023 GMC Duramax Diesel. The vehicle was used for extended commercial travel across six states and was monitored using Banks iDash devices. Regeneration data was collected over five regeneration cycles using untreated fuel, followed by treatment of one full tank with Diesel Injector & DPF Flush at a 1:500 ratio, and data collection for five additional regeneration cycles. Results showed a 99.5% increase in the miles driven between regenerations for the 2023 GMC Duramax Diesel. These findings suggest that the additive may significantly decrease DPF regeneration frequency in both daily-use and long-haul diesel vehicles.

Objective

Evaluate the effect, if any, that Diesel Injector & DPF Flush has on how frequently a diesel particulate filter (DPF) has to regenerate (Regen) on diesel vehicles.

Materials

1. 2023 GMC Duramax Diesel
 - i. This vehicle is a company vehicle that travels long distances covering Texas, Oklahoma, Arkansas, Louisiana, New Mexico, and Colorado.
2. Banks iDash devices installed in vehicle
3. Power Service Diesel Injector & DPF Flush 1:500 treatment ratio

Methods:

2023 GMC Duramax Diesel was equipped with Banks iDash monitors to track diesel particulate

filter (DPF) regeneration events. Initial baseline data were collected over five natural regeneration cycles using untreated ultra-low sulfur diesel (ULSD). The vehicle was operated under typical usage patterns. The vehicle was used for extended highway travel across six U.S. states. The vehicle was driven by the same driver for the duration of the test.

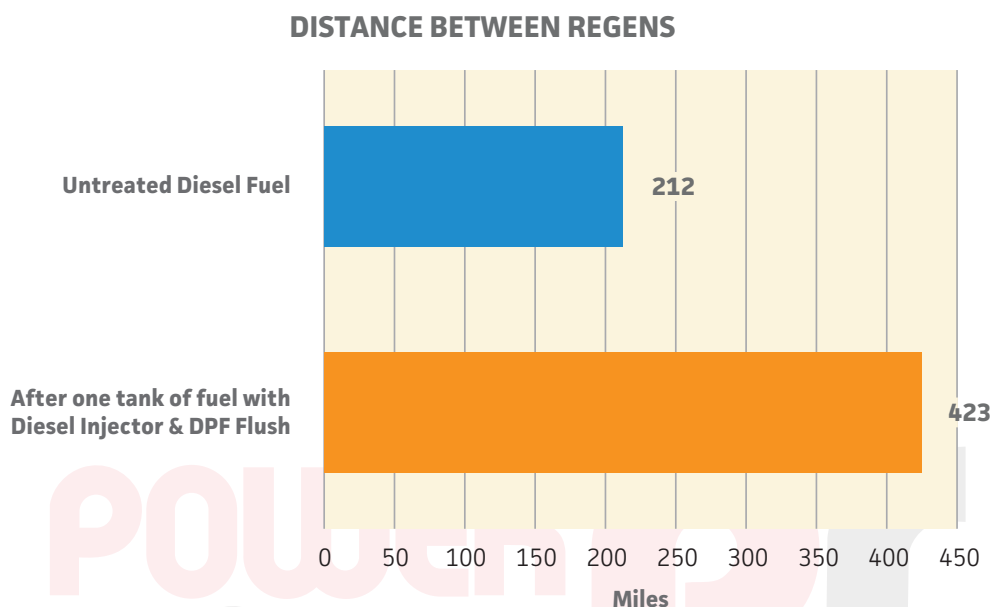
After baseline data were recorded, one full tank in the vehicle was treated with Power Service Diesel Injector & DPF Flush at a 1:500 ratio. Care was taken to ensure the fuel tank was nearly empty prior to treatment, and the additive was introduced during refueling to ensure proper mixing. Regeneration frequency was monitored during the next five cycles post-treatment. Regens were identified based on soot load readings and regeneration activity reported by the iDash device.



Results

Regeneration data is listed below

1. 2023 GMC Duramax Diesel – Mileage jump between regens from 212 miles to 423 miles.



Conclusions

1. 2023 GMC Duramax Diesel had the miles between regens increased by 99.5%

Discussions

The findings conclusively demonstrate that a single application of Power Service Diesel Injector & DPF Flush significantly reduced the required regeneration frequency in the 2023 GMC Duramax Diesel with a mileage increase of 99.5% across the pre- and post-treatment monitoring cycles

The powerful detergent action of the additive provides these main benefits:

- 1. Cleans Injectors:** Restoring optimal fuel atomization. This results in more complete combustion, which inherently reduces the amount of soot produced and subsequently collected by the DPF.
- 2. Removes Soot and Deposits:** The DPF-specific components utilizing **REGENEXTEND®** technology allow for more effective passive regeneration (soot burning off at normal highway temperatures), thus delaying the need for an active, fuel-consuming regeneration event.

The dramatic 99.5% increase observed in the test vehicle (2023 GMC Duramax Diesel) suggests that even in vehicles that typically run hotter and should naturally see more passive regeneration, there was a substantial benefit from cleaning existing system contamination.

In conclusion, the use of Power Service Diesel Injector & DPF Flush offers a proven, cost-effective method for fleet managers and vehicle owners to:

- Increase MPG by reducing the number of fuel-intensive active regenerations.
- Reduce vehicle downtime and maintenance costs associated with interrupted or forced regeneration cycles.
- Maintain peak engine performance by ensuring clean injectors and an efficient DPF system.



ABOUT THE AUTHOR

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Jessica is the Director of Technical Services at Power Service Diesel Additives with 12 years of experience in fuel system performance and maintenance. By analyzing over 2,000 fuel samples annually, she provides unique, data-backed insights into real-world fuel quality and equipment longevity. An active member of ASTM Committee D02, she leverages her deep technical background to help fleet managers optimize fuel efficiency, reduce maintenance costs, and ensure reliability in varying regional fuel conditions.

