MODERN DIESEL:
EFFICIENCY & AFTERTREATMENT

Power Service Diesel Additives

Restoring in-cylinder combustion to recover power, reduce active regens, and slash DEF usage by over 60%.

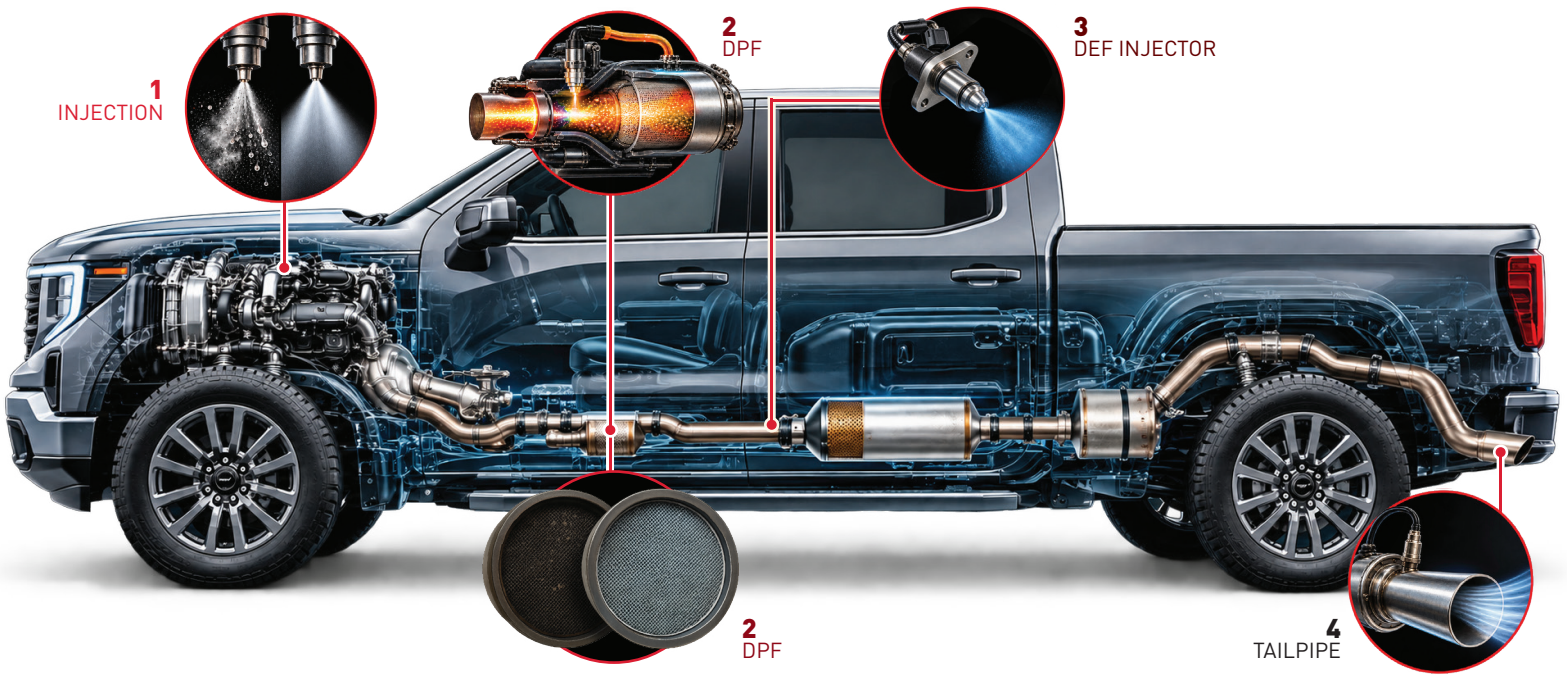
20-Tank Study
-60.20%
DEF CONSUMPTION
Fleet mean usage drop

Fleet Average
+11.53%
FUEL ECONOMY
24.82 → 27.63 Fleet MPG

Dyno Verified
+8.5%
PEAK TORQUE & HP
Immediate power recovery

FLOW SCHEMATIC: HIGH-PRESSURE COMMON-RAIL DIESEL

1 INJECTION → **2** DPF → **3** DEF INJECTOR → **4** TAILPIPE



STAGE 01 • CYLINDER BURN
RESTORE ATOMIZATION

FOULED	FLUSHED
Coarse Stream	Fine Mist Cone

- **+6.9% to 8.5%** peak dyno torque/HP.
- Restores spray pattern in 1 tank.
- Fuel makes power instead of soot.

→ **Converts more fuel into power and torque**

STAGE 02 • FILTER CORE
DPF SOOT MITIGATION

CLOGGED	RESTORED
High Backpressure	Open Honeycomb

- **+65.7% extension** between regens.
- Cuts active regen cycles up to 50%.
- Reduces post-injection fuel penalty.

→ **Fewer Regens = less wasted fuel**

STAGE 03 • SCR CATALYST
SLASH DEF DOSING

-60.2% DEF DOSING DEMAND

- Diesel/DEF ratio drops 2.8% to 1.1%.
- **Tank range > 4,000 miles** per fill.
- Reduces wear on exhaust system.

→ **Cuts DEF usage in half.**

STAGE 04 • EMISSIONS OUT
IN-CYLINDER CONTROL

-29.0% NOx

- Stops soot and raw HC at combustion.
- Prevents sensor de-rate codes.
- Zero visible smoke.

→ **Restores factory emissions balance**

THE BENCHMARK FLEET TRIAL & OPERATIONAL DATA

CONTROLLED 20-TANK SEQUENTIAL EVALUATION:

TANKS 1–10 UNTREATED → TANK 11 DIESEL INJECTOR & DPF FLUSH → TANKS 12–20 DIESEL KLEEN +CETANE BOOST

TABLE 1: 20-TANK FLEET LOG (FOUR 3.0L TURBO-DIESEL FLEET UNITS)

VEHICLE ID	BASELINE DEF MPG	TREATED DEF MPG	DEF IMPROVEMENT	BASELINE FUEL MPG	TREATED FUEL MPG	FUEL MPG GAIN
Fleet Unit #1	609.42	1,104.17	**+81.18%**	21.67	24.35	24.35 (+12.33%)
Fleet Unit #2	691.87	1,083.40	**+56.59%**	24.67	28.71	28.71 (+16.35%)
Fleet Unit #3	651.08	1,169.00	**+79.55%**	25.65	29.01	29.01 (+13.13%)
Fleet Unit #4	1,162.54	1,435.26	**+23.46%**	27.26	28.43	28.43 (+4.29%)
FLEET AVERAGE	**778.73**	**1,197.96**	**+60.20%**	**24.81**	**27.63**	**27.63 (+11.53%)**

TABLE 2: REAL-WORLD FLEET TRANSLATION MATRIX

METRIC	UNTREATED BASELINE	TREATED REGIMEN	FLEET BOTTOM-LINE IMPACT
DEF-to-Diesel Ratio	2.5% – 3.0% of diesel	**1.0% – 1.2% of diesel**	Cuts DEF bulk purchase volume by more than half
DEF Tank Range (5 Gal)	~2,000 miles	**4,000+ miles / fill**	More than doubles highway driving range per refill

CASE IH MAGNUM 220 (6.7L)

4,400 Field Hours

Max Torque	PTO Power	NOx Mass
+59 Lbs.	**+6.9% HP**	**-29.0%**
+6.9%	175 → 187 HP	Reduction

Tested on calibrated PTO dynamometer across 70 operating hours. Proves injector spray patterns increase torque and horsepower.

DODGE RAM 2500 (6.7l)

Field-Aged Platform

Peak Torque Up To	Increase Peak HP Up To	Peak Wheel HP Up To
+8.1%	**+27 HP**	**+8.5%**
	Dyno Sweeps	Immediate Dyno

Loaded chassis dynamometer sweeps confirm horsepower and torque recovery in light-duty highway platforms: clean injectors restore designed spray patterns.

THE 2-STEP RESET & MAINTENANCE PROTOCOL



STEP 1: RESET

DIESEL INJECTOR & DPF FLUSH®

Single-tank shock cleanup. Dissolves internal deposits, restores spray patterns, and flushes turbo and DPF cores.

Dosing: 1:500 ratio monthly.



STEP 2: MAINTENANCE

DIESEL KLEEN® + CETANE BOOST

Every-fill preventive dosing. Prevents deposit reformation, boosts cetane up to 6 numbers, and preserves DEF savings.

Dosing: Add at every fuel fill-up

SCAN FOR FULL STUDY WHITE PAPERS

powerservice.com/sema-data

Access raw 20-tank logs, dyno sweeps & certified cell emissions.

*Controlled study data on file at Power Service Products, Inc., Weatherford, TX. Individual results vary with duty cycle and fuel quality.

POWER SERVICE® Diesel Additives