ELECTRO MOTIVE.



Save Fuel and Reduce Smoke with EMD Tier 1 EUI Injectors

Electro-Motive Diesel offers a Tier 1 injector upgrade option for Tier 0 EUI equipped EMD locomotives. This is a compliant alternative that maintains EPA certified emissions performance.

Extensive injector comparison testing confirms that the Tier 1 injector can be used in both applications (Tier 1 and Tier 0) to meet EPA regulations. And, when applied to Tier 0 engines, results in both fuel savings and smoke reduction.

These Tier 1 injectors can also be used on locomotives that are not currently certified to any EPA Tier level, and will result in the same fuel and smoke benefits.



Benefits in a Tier 0 Application

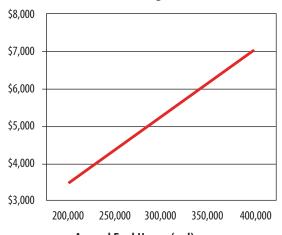
- $\sqrt{0.5\% 1.5\%}$ fuel savings
- √ Up to 50% reduction in smoke opacity
- √ Increased reliability
- √ Reduced peak cylinder pressures
- √ Reduced inventory with common injector

NOTE: New EMDEC™ software is required on Tier 0 units, and is included in the injector price.

Once applied, Tier 1 and Tier 0 injectors can be mixed within the same Tier 0 engine and still maintain Tier 0 compliance.

This simplifies introduction to the fleet, and over the long term, standardizing on one injector model will reduce inventory requirements.

Annual Fuel Savings / Locomotive*



Annual Fuel Usage (gal)

*Based on a fuel savings of 0.5% and fuel at \$3.50/gal

The EMD OEM Advantage

EMD replacement parts are the result of extensive development and testing in the same engineering facilities where new EMD engines are designed, built, and tested. This OEM focus ensures the same performance, reliability, and durability for which EMD engines are legendary.

- OEM fuel injectors are fully remanufactured to precise internal specs vs. partially rebuilt
 retrofits. This ensures sustained fuel economy and emissions performance over their full
 useful life and avoids the operating penalties and expense of non-compliance.
- Power Assemblies and all emissions critical components are the result of fully integrated
 OEM design vs. partial substitution of non-optimized third party components.
- Engines and critical subsystems are carefully calibrated to optimize performance, reduce emissions, and minimize fuel consumption.
- EMD emissions kits require no cumbersome catalyst retrofits which can suffer from excessive backpressure, ash fouling, and extreme temperatures.
- EMD has stood solidly behind its products since 1922. As the EPA certificate holder for its
 engines and kits, their in-use emission compliance and engine performance is covered by
 the EMD OEM factory warranty.

