Thomas Saf-T-Liner C2 School Bus Factory Service Pdf Manual

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The Environmental Protection Agency (EPA) mandated that all engines built after December 31, 2009 must reduce the level of emissions exhausted by the engine to 0.2 grams per brake horsepower hour (g/ bhp-hr) of nitrogen oxides (NOx). To meet the EPA10 requirements, Daimler Trucks North America is using technology known as Selective Catalytic Reduction (SCR) in the exhaust aftertreatment system (ATS). The SCR process requires the introduction of diesel exhaust fluid (DEF) into the exhaust stream.

DEF is colorless, non-toxic, and biodegradable. IMPORTANT: The ATS is part of an integrated engine and emissions management system, controlled by the ACM. Follow the engine manufacturer's procedures, and use the correct equipment when diagnosing or working on any part of the ATS. The ATS is always chassis-mounted, but there are several different installation options available to fit any needed vehicle configuration. ATS exhaust piping is stainless steel. The EPA10 aftertreatment system (ATS) includes all the piping and equipment between the turbocharger outlet and the tip of the exhaust pipe.

It includes an aftertreatment device (ATD), an SCR catalyst, a DEF tank, tank header unit, pump, metering unit, DEF, aftertreatment control module (ACM), coolant, and air lines that run between each component. See Fig. 1 for system components and function.

Monitoring and operation of the ATS is controlled by an electronic control module (ACM). EPA10 engines require ultralow sulfur diesel (ULSD) fuel, for low emissions and long life of the diesel particulate filter (DPF), a honeycomb soot filter inside the ATD.

Inside the ATD, the exhaust first passes through the diesel oxidation catalyst (DOC) where combustion gasses are chemically broken down to water and carbon dioxide, then through the DPF, where solid particles are trapped.

The soot is reduced to ash during regeneration, and the ash is collected in the DPF until the DPF is full, at which time the DPF must be removed and cleaned. The DPF needs to be removed and cleaned of ash at specific cleaning intervals. For DPF maintenance and repair information, see the specific engine manufacturer's service literature.