



**Emission
Solutions**

Modular Aftertreatment System.

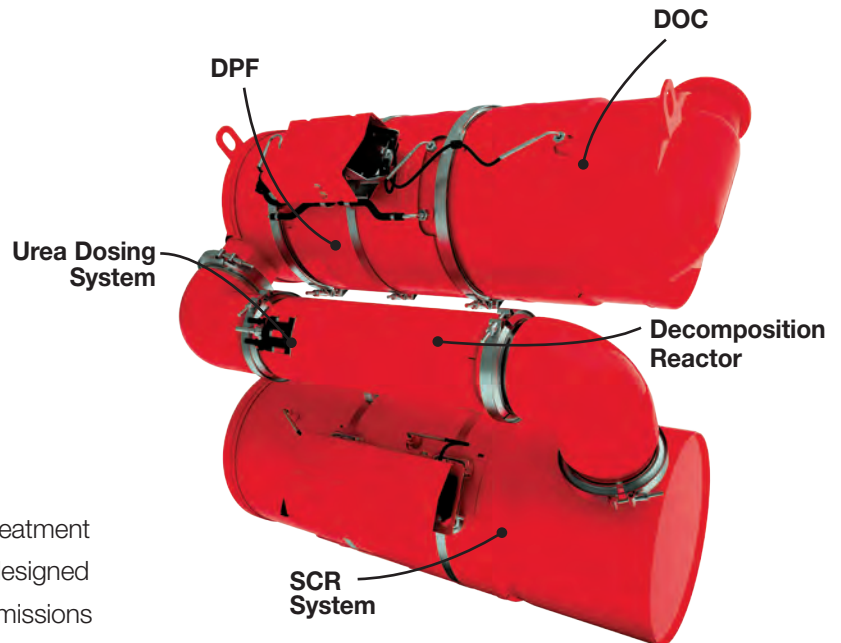


Modular Aftertreatment System.

Cummins Emission Solutions' Modular Aftertreatment System is a proven, flexible exhaust system designed to meet some of the world's most stringent emissions regulations while optimizing efficiency and reliability. It satisfies the requirements of European Union (EU) Stage VI and Environmental Protection Agency (EPA) 2013 on-highway standards, and Stage IIIB and Tier 4 Final off-highway regulations. The flexible, modular design combines Diesel Particulate Filter (DPF) and Selective Catalytic Reduction (SCR) systems, providing our customers with a proven solution.

Achieves Passive Operation And High NOx Conversion.

Cummins Emission Solutions understands how to balance engine and aftertreatment to deliver optimal system performance while meeting the regulatory levels of system-out oxides of nitrogen (NOx) and particulate matter (PM). Managing regeneration in the DPF is an example of system optimization. Passive regeneration of the DPF can take place during normal engine operation if the system temperature is managed correctly, and takes place without interruption to vehicle operation. Optimum reduction in NOx levels is achieved by optimizing SCR performance. Not only is the SCR catalyst designed to store excess ammonia to reduce NOx in the case of low temperatures, but also, the urea decomposition chamber has been designed to maximize urea flow distribution and uniformity at the face of the SCR catalyst.



Diesel Particulate Filter.

Cummins Emission Solutions' DPF is coupled with a Diesel Oxidation Catalyst (DOC). Together, those products are effective at removing 99 percent of PM soot from the exhaust system using wall-flow substrates. As soot accumulates in the filter, a regeneration event will provide sufficient heat to oxidize the captured soot. The remaining ash is removed during regularly scheduled cleaning events based on recommendations of the engine manufacturer.

Selective Catalytic Reduction System.

SCR technology is an effective, reliable solution that reduces NOx emissions and enables enhanced fuel economy. SCR systems are virtually maintenance-free, with occasional dosing system filter upkeep, depending on the application. An SCR system is typically composed of three main elements: an SCR catalyst, a urea dosing system and an ammonia slip catalyst. Our systems use a chemical reductant – urea – which is called Diesel Exhaust Fluid (DEF) in North America and AdBlue® in Europe. DEF converts to ammonia in the exhaust stream, and reacts with NOx over a catalyst to form harmless nitrogen gas and water.

Urea Dosing System And Decomposition Reactor.

A urea dosing system injects atomized urea into the exhaust system. It uses proprietary electronic control technology to measure pre-aftertreatment NOx levels. Based on the NOx level reading, the controls system commands the urea doser to inject reductant into the exhaust stream, reducing NOx emissions. The decomposition reactor is a mixing chamber designed to hydrolize the DEF, releasing ammonia gas, and then mix the ammonia with exhaust gas. The spray characteristics of the urea doser, along with the innovative mixing design, ensure uniform ammonia distribution across the face of the SCR catalyst and overall system efficiency, to deliver better fuel economy and reliability.

Flexible Solutions Designed For You.

The Modular Aftertreatment System was designed to be integrated into numerous vehicle and machine types. Customers can select a number of attributes, such as orientation; inlet and outlet configuration, type and diameter; operating voltage; and inlet clocking. Some available configurations are shown below.



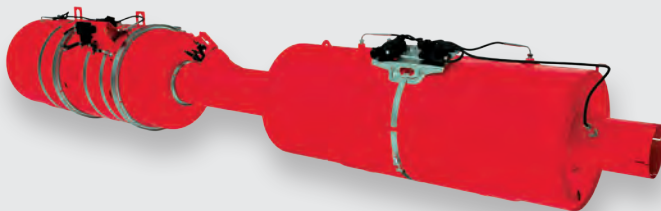
Learn More.

To learn more about the Modular Aftertreatment System or any of our other innovative products, visit cumminsemissionsolutions.com.

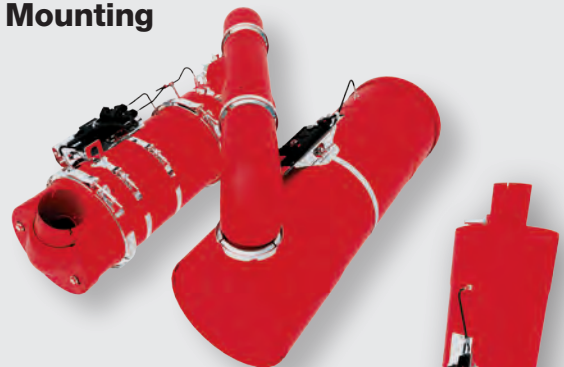
Switchback



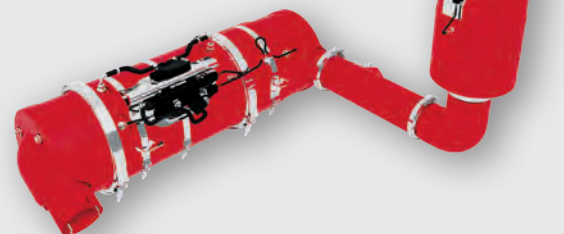
In-Line



Frame Rail Mounting



Vertical SCR





Cummins Emission Solutions
301 Jackson Street
Columbus, IN 47201
U.S.A.

Phone: 1-800-DIESELS™ (1-800-343-7357)
Internet: cumminsemissionsolutions.com

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