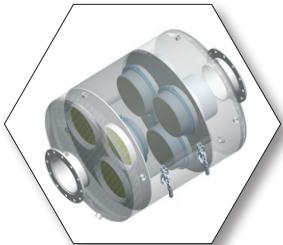


Diesel Engine Emissions Control

**Are you tired of the smoke and odor from your diesel engine?
Rest assured, with an emissions solution from Johnson Matthey's toolbox of products!**



Not only can we help you eliminate PM (particulate matter), the source of visible smoke and odor—but also dangerous nitrogen oxides (NOx), carbon monoxide (CO) and hydrocarbons (HC). Our toolbox of pollution control products is proven effective and are easily designed for new engines or retrofitted to existing engines. Choose from an array of options (see below) for reducing PM, NOx, CO and HC emissions from your diesel engine. Simply put—If you have a diesel engine pollution problem, call us now. We have the best off-the-shelf or custom-designed solution for your diesel engine.



CRT® (Continuously Regenerating Technology)

Our patented CRT® diesel particulate filter system not only reduces smoke and odor but also reduces PM, HC and CO emissions by more than 90 percent. And it has been verified by the California Air Resources Board (CARB) to reduce the maximum level of PM, Level 3.



DOC (Diesel Oxidation Catalyst)

Our EPA-certified diesel oxidation catalyst (DOC) converter, an economical option for less stringent applications, requires little or no maintenance, minimizing downtime.



SCR (Selective Catalytic Reduction)

A state-of-the-art urea SCR system for reducing NOx emissions. It includes an SCR catalyst reactor, urea dosing pumps, urea control system and urea storage tanks.



SCRT® (Selective Catalytic Reduction Technology)

The ultimate in 4-way Catalytic and Filtration Control: Our SCRT system incorporates a CRT upstream of the SCR system to reduce PM, NOx, HC and CO.



Johnson Matthey
Stationary Emissions Control

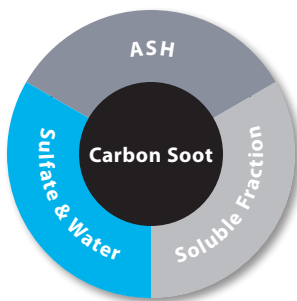
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Our Toolbox of Emissions Control Technology for Stationary Diesel Engines

POLLUTANT	JM EMISSIONS CONTROL PRODUCT	PRODUCT DESCRIPTION	PERCENT REDUCTION	RELATIVE COST
PM-Odor (Soluble organic fraction)	DOC (Diesel Oxidation Catalyst)	The DOC contains a PGM Oxidation Catalyst that removes the unburned fuel in the particulate.	20 to 40% of the PM.	Low
HC	DOC	The DOC oxidizes HC to CO ₂ and water.	More than 90% of the HC.	Low
CO	DOC	The DOC oxidizes the CO to CO ₂ .	More than 90% of the CO.	Low
PM-Soot or smoke	CRT® DPF (Continuously Regenerating Technology with Diesel Particulate Filter)	A CRT contains a DPF and a DOC. It traps the soot in the filter, which is regenerated by NO ₂ from the DOC.	More than 85% of the PM (100% of the smoke).	Low to Moderate
PM, HC and CO	CRT® DPF	Since the CRT contains a DPF and a DOC, it removes all three pollutants.	More than 85% of the PM; more than 90% of the HC; more than 90% of the CO.	Low to Moderate
NOx	SCR (Selective Catalytic Reduction)	The SCR catalyst system includes SCR catalysts in a housing, urea dosing pumps, urea control system and urea storage tanks.	More than 90% NOx.	Moderate to High
NOx, PM, HC and CO	SCRT® (Selective Catalytic Reduction Technology)	4-way Catalytic Control: The SCRT system adds a CRT upstream of the SCR system.	More than 90% NOx; more than 85% PM; more than 90% HC; more than 90% CO.	Moderate to High

Diesel Particulate Matter—What is it?



- >> Carbon soot
- >> Soluble organic fraction (SOF)—20% to 50%
- >> Sulfate and water
- >> Ash



Johnson Matthey
Stationary Emissions Control

Suite 200, 400 Lapp Road, Malvern, PA 19355, USA

TEL: (484) 320-2136, FAX: (484) 320-2152

E-MAIL: info@jmsec.com

www.jmsec.com