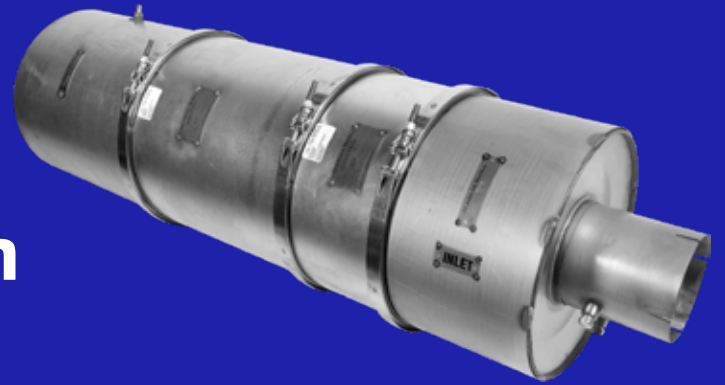


# JM

## CRT<sup>®</sup> Filter System



**The on-road verified benchmark technology for on-highway trucks, transit fleets, school buses, sanitation, etc.**

Johnson Matthey's 3rd generation CRT<sup>®</sup> filter (Continuously Regenerating Technology) has revolutionized modern diesel emissions reduction. The first filter verified for the EPA's voluntary retrofit program and the first filter verified by CARB, the CRT has become the industry benchmark for Heavy Duty Diesel Retrofit Technology. The CRT filter system reduces HC and PM by over 90% and CO by over 70%.



**Johnson Matthey**  
Inspiring science, enhancing life

## Technology driven

The CRT particulate filter utilizes Johnson Matthey's patented process which oxidizes soot with  $\text{NO}_2$  at a lower temperature than with oxygen. This lower temperature is compatible with typical diesel exhaust temperatures, so no supplemental heat is required.

The device is made up of two chambers. The first contains a substrate coated with a proprietary, highly-active platinum oxidation catalyst designed to oxidize a portion of the  $\text{NO}$  in the exhaust to  $\text{NO}_2$ .  $\text{NO}_2$  generation is the key to the oxidation of soot collected by the wall flow filter and the heart of the Johnson Matthey patent. The catalyst also converts  $\text{CO}$  and  $\text{HC}$  into  $\text{CO}_2$  and  $\text{H}_2\text{O}$ .

In the second chamber, exhaust flows through a wall-flow filter, where gaseous components pass through, but soot is trapped on the walls of the filter. The trapped soot is then destroyed by the  $\text{NO}_2$  produced by the catalyst in the first chamber.

## Benefits

- Verified by EPA and CARB as a Level 3+ System.
- Reduces  $\text{HC}$  and  $\text{PM}$  by over 90% and  $\text{CO}$  by over 70%.
- Meets both EPA and CARB  $\text{NO}_2$  slip requirements.
- Also verified for use with up to B20 biodiesel blend.
- Modular design for ease of installation and routine service.
- No electrical heaters or fuel injection required.
- Operates with Ultra Low Sulfur Diesel (ULSD).
- Monitored by the CRTdm diagnostic module, with data-logging and alarm capability.
- Maintenance is minimal. Clean the filter element approximately every 60,000 miles or annually, or as signaled from the CRTdm (whichever occurs first).

### Proven success

For 40 years, Johnson Matthey has been the global leader in the emission control industry. And when it comes to performance, our CRT<sup>®</sup> System is the most widely used diesel particulate filter (DPF) system in the world and is a patented Johnson Matthey technology.

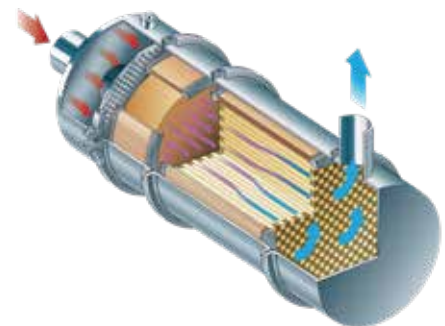
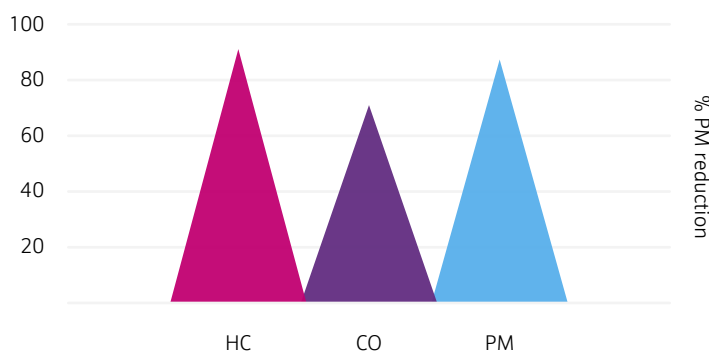
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## CRT<sup>®</sup> System test results



CRT<sup>®</sup> System diesel filter cutaway.