

+Performance +Reliability +Outstanding Technology +Verified +Expertise +Novel Approach



Johnson Matthey
Catalysts



catalysttechnology



A Proven Leader in Catalyst Technology

Johnson Matthey is the only global technology company that creates the catalyst inside that does all the magic and performs rigorous testing and durability on the systems we create. We take pride in our ability to apply our technology not only here in the U.S., but around the world.

When you need the best emissions control possible, contact Johnson Matthey – for our knowledge, for our expertise and for our award winning technology and products. Johnson Matthey has supplied hundreds of millions of catalysts and filters for more than forty years.

Johnson Matthey brings you, simply, the best catalyst technology in the world for emission control.

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The **A_{dv}CCRT™** System

Heavy Duty Diesel Engine Emission Control Retrofit



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Catalysts





systemmodels



A_{dv}CCRT Doser Combined Mount



A_{dv}CCRT Doser, Nozzle and LED Display



The Advanced CCRT® System

Johnson Matthey's Advanced CCRT (A_{dv}CCRT™) System is the most robust and durable diesel particulate filter in the world, performing where other filters can't. Based on the patented CCRT® filter, it maintains the CCRT filter's passive regeneration of particulate matter (PM) for both EGR and non-EGR engines while minimizing the amount of excess NO₂ slip from the tailpipe. Having been awarded verification by both the U.S. EPA and the California Air Resources Board, you are doubly assured that the Advanced CCRT System will perform.

The genius behind the design of the Advanced CCRT System is a two-stage filter arrangement, making our system unique in the industry. The first stage, which duplicates the CCRT filter's pre-catalyst and coated filter with proprietary catalyst formulations, reduces PM. The second stage reduces excess NO₂ with the injection of a tiny amount of hydrocarbon across a decomposition catalyst which converts NO₂ back into NO. Other systems reduce NO₂ in the filter limiting their ability to reduce PM in all applications.

While it is true that other filters have been verified for some of these MY engines, the Advanced CCRT System is the only filter that has undergone a very rigorous OE technical approval process making it unique amongst filters for retrofit applications. This process entailed a thorough dual technical review of the product; no other technologies can claim this level of review.

Additionally, the OE process brought in valuable Voice of the Customer information allowing Johnson Matthey to offer the highest standard PM product available for even the most challenging applications.

To ensure the Advanced CCRT System's secure fit to your vehicle, a rigorous bracket design review is completed by Johnson Matthey on a Distributor by Distributor basis.

When this is coupled with Johnson Matthey's major market position for supply of emission control technology to the engine manufacturers in North America and elsewhere, you have a combination that is hard to beat; high-level technical credibility and commercial strength.

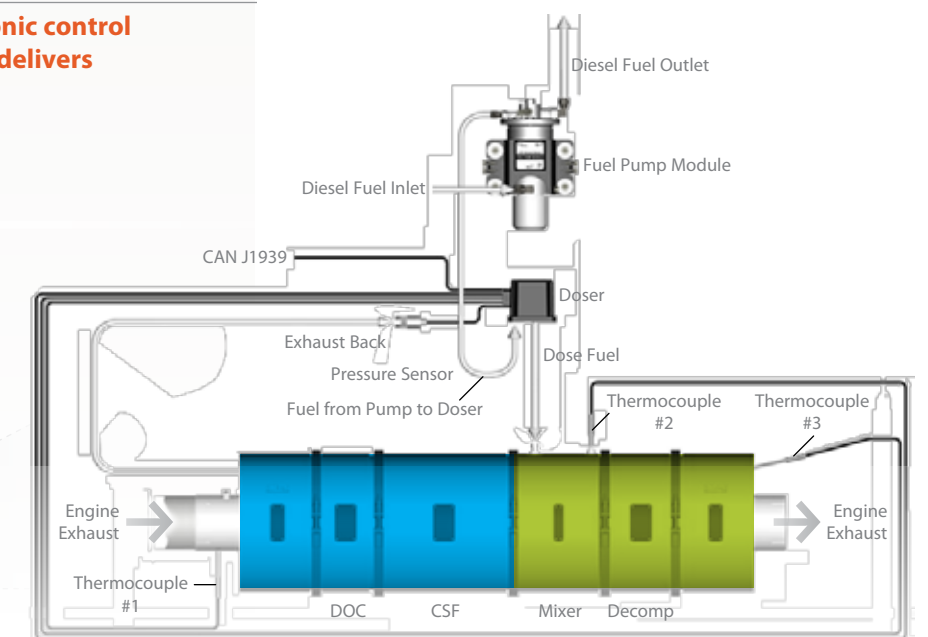
The Advanced CCRT System Features, Benefits & Specs

- ▶ **Second generation CCRT filter with 10,000+ retrofit applications for more than a decade**
 - Stage 1 reduces PM
 - Stage 2 reduces NO₂
- ▶ **Stage 1 PM reduction with CCRT filter**
 - Same basic system architecture used for OE filters
 - Over 1.5 million in service since 2007
 - JM technology can be found on more than 60% of the heavy duty vehicles on the road today
 - Passive regeneration
 - Coated filter and pre-catalyst maximizes the use of NO₂ allowing for proven performance on difficult applications, such as engines with low NO_x/PM ratios
- ▶ **Stage 2 NO₂ reduction with decomposition catalyst**
 - NO₂ reduced by the decomposition catalyst after PM has been reduced by more than 90%
 - No measureable impact on fuel economy
- ▶ **Verified by EPA for 90% PM reduction and by CARB as a Level 3+ PM filter for 2002 to 2006 MY engines**
- ▶ **Meets EPA and CARB 20% NO₂ slip requirements**
- ▶ **Applicable to both EGR and non-EGR engines**
 - 2.0 – 2.8 g/bhp-hr NO_x cert level
- ▶ **Performs where others do not**
- ▶ **Robust design and construction**
- ▶ **Modular for easy installation and routine service**
- ▶ **Monitored by a specially designed electronic control unit (ECU) which tracks performance and delivers diagnostics on the unit.**

benefits&specs



- Stage 1
- Stage 2



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emissioncontrol





The Advanced CCRT System Frequently Asked Questions

Q: **1. Is the Advanced CCRT System an active system?**

A: No. The Advanced CCRT System is a passively regenerated system.

Q: **2. Does the Advanced CCRT System increase fuel consumption?**

A: The effect on fuel economy is negligible.

Q: **3. Do any Advanced CCRT System parts require annual maintenance?**

A: Yes. For the Advanced CCRT System, JM recommends the filter be cleaned annually or every 60,000 miles. The filter may also need to be cleaned in the event of a high back pressure warning. Other maintenance items for the Advanced CCRT System include a fuel filter which needs to be replaced at 6 month intervals and a dosing nozzle every 50,000 miles.

Q: **4. Can the Advanced CCRT System be installed vertically as well as horizontally?**

A: Yes. The Advanced CCRT System can be installed in both a vertical and horizontal configuration. Please note however that a water trap outlet head will be necessary on vertical installations. During installation please keep in mind that the extra weight of the system must be taken into account when designing brackets.

Q: **5. Does filter effectiveness diminish over time?**

A: No. Tests show virtually no deterioration of the system performance over time.

Q: **6. Do I need to modify the exhaust system?**

A: Because of its larger size the installation of the Advanced CCRT System may require the exhaust system to be reconfigured. This might include the relocation of the tailpipe.

Q: **7. Are there any applications for which the Advanced CCRT System cannot be used?**

A: The Advanced CCRT System can be installed on a broad range of vehicles and applications. However, it is not applicable for use on school buses in California.

Q: **8. How long does it take to install the Advanced CCRT System?**

A: Installation time depends on the system model, type of vehicle and number of technicians doing the installation.

Q: **9. Will the Advanced CCRT System increase exhaust temperature?**

A: No. The Advanced CCRT System will not increase the exhaust temperature of your vehicle.

Highlights of the Advanced CCRT System

- Only technology verified by both CARB and EPA
- Reduces PM by over 90% – Level 3
- Passive system
- On board diagnostics for operator convenience
- Proven reliability and durability
- Competitively priced
- Expert customer support including:
 - extensive distributor and customer training
 - procedures and documentation
 - online help and field support
- Engine and after treatment expertise from our top-of-the-line distributor network
- Extensive distributor network covering the nation
- Easy cleaning service – allowing you to choose the vendor that's right for you, but supplying the procedures and specifications necessary to give you peace of mind that your filter is properly cleaned
- Works on difficult applications
- Backed by Johnson Matthey's 40+ years of experience in the emissions reduction market



highlights

Advanced CCRT System Application Checklist

To properly apply the Johnson Matthey Advanced CCRT System follow this easy checklist:

- I have datalogged all of the vehicles and they all meet the temperature requirement of 240° Celsius over 40% of the duty cycle.
- J1939 connectivity has been confirmed which will help ensure constant communication between the Advanced CCRT System and my vehicle engine for maximum performance.
- I have checked the dimensions of the Advanced CCRT System against the vehicle and confirmed that a length between 49" and 71" is appropriate.
- I have confirmed that the vehicle and bracket system proposed for use will support the 114 lbs. to 198 lbs. requirement.
- I have assessed the bracket needs and have determined we would like to use either bracketry offered through Johnson Matthey or bracketry designed by Johnson Matthey's qualified Distribution network who have gone through a stringent bracket review process.
- I have completed the entire pre-installation compatibility assessment and I'm ready to apply the Advanced CCRT System to my vehicles.

checklist

