Pollution Control Technologies for Stationary Engines and Turbines

AIRPROTEKT

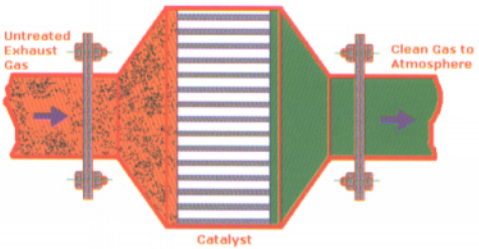
Why abatement?

Even with today's power generators offering extremely efficient internal combustion engines still emit pollution, exhausting various combinations of nitrogen oxides (NOx), monoxide (CO), and hydrocarbons (HC). With increased concerns about health risks, the environment and environmental legislation; controlling these emissions before they escape to atmosphere requires a cost effective solution.

CO & HYDROCARBON OXIDATION CATALYST FOR DIESEL & GAS ENGINES AND TURBINES

The principal of the **Honeycat® Oxidation Catalyst** is to reduce the levels of Hydrocarbons (Total & Non Methane) & CO emissions in an lean burn (gas or diesel) engine exhaust by passing the gases through a Johnson Matthey PGM based honeycomb catalyst encased in a bespoke engineered stainless steel reactor. The oxidation catalyst unit is simply installed into the exhaust system after the manifold without any requirement for modification to the engine controls.

REDUCTIONS ACHIEVED
CO 99% HC 80% NOx Zero



Why catalyst?

Utilising the engine exhaust temperature and a Johnson Matthey metal monolith catalyst. The HC, CO, & NOx simply undergo a chemical reaction on the catalyst surface which result in complete reduction of emissions to atmosphere. The Johnson Matthey manufactured catalyst, employ Platinum Group Metals (PGM's) to achieve the highest catalytic activity and resistance to poisoning. It's construction is a special stainless steel foil formed into honeycomb structure. The following advantages are achieved - high performance, low pressure drop, high resistance to thermal & mechanical shock and long life.

3 WAY NON-SELECTIVE CATALYTIC REDUCTION CATALYST FOR RICH BURN GAS ENGINES

The principal of the **Honeycat® 3way DeNOx** Catalyst is to reduce the levels of Oxide of Nitrogen (NO, NO2), Hydrocarbons (Total & Non Methane) & CO emissions in a rich burn (gas) engine exhaust by passing the gases through a Johnson Matthey PGM based honeycomb catalyst unit, which is simply installed into the exhaust system after the manifold. To achieve maximum three-way catalyst efficiency with minimum fuel usage it is vital that the engine exhaust entering the catalyst is maintained slightly to the fuel-rich side of stoichiometry. An automatic controller is available for this service.

REDUCTIONS ACHIEVED
CO 99% HC 90% NOx 99%

SCR SELECTIVE CATALYTIC REDUCTION CATALYST COMPLETE (UREA INJECTION SYSTEM) TURN KEY EQUIPMENT FOR LEAN BURN ENGINES & TURBINES

The principal of the **Honeycat** *SCR System is to reduce the levels of NOx emissions in an engine exhaust by passing the gases through a Johnson Matthey Zeolite based honeycomb catalyst and a controlled amount of reduction agent (**Urea**). The urea is injected into the exhaust system through an injection grid, it is pyrolised by the temperature to form **Ammonia**. The ammonia then reacts with the NOx on the active areas of the catalyst to give Nitrogen & water vapour. The complete engineered SCR package normally includes a urea injection & control system, NOx monitoring & control system and a SCR catalyst reactor.

- **REDUCTIONS ACHIEVED**
  CO ZERO HC ZERO NOx 95%

COMBINED CATALYST & SILENCERS FOR ENGINE SETS TO ACHIEVE A SPECIFIC NOISE REDUCTION LEVELS

COMBINED CATALYST & FILTER TO REDUCE PARTICULATE EMISSIONS ON DIESEL ENGINES

Using the Johnson Matthey CRT* principal or alternatively a fuel additive or preheat system with a wall flow filter. The unwanted soot particulates will be caught in the filter which then self cleans to allow continuous operation. The fully engineered package can incorporate a stainless steel reactor catalyst, wall flow filter, fuel additive injector & control system.

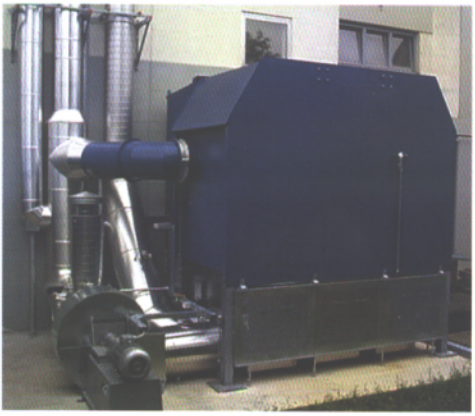
- **REDUCTIONS ACHIEVED**
  PARTICULATE 99%

MAINTENANCE AND SERVICING

Following installation and commissioning AirProtekt provides a comprehensive programme for maintenance and service. Annual servicing to customer schedule and breakdown maintenance.

REGENERATIVE THERMAL OXIDISERS FOR LANDFILL/BIOGAS ENGINE EMISSIONS

The Regenerative Thermal Oxidiser (RTO) is a complete turn key package which works on the principal of odour, total hydrocarbon & CO removal by a temperature controlled combustion chamber which thermally oxidises the landfill/biogas engine exhaust emissions (applications unsuitable for catalyst due to poisons). The RTO fully engineered package incorporates a containerised combustion complete with honeycomb ceramic heat recovery medium, preheater, changeover valves & control system.



Typical RTO installation suitable for a wide range of industrial applications.

DESIGN, SUPPLY AND INSTALLATION

AirProtekt offers a complete service for design, supply and installation of emission control systems. From definition of the critical process exhaust parameters through design of the optimum engineering package, taking account of any space restrictions, to installation and commissioning of the completed system.

AIRPROTEKT

AIR POLLUTION CONTROL TECHNOLOGIES FOR VOCs, CO and NOx

AirProtekt Newton Hall Newton Cambridge CB2 5PE United Kingdom
Tel: (+44) 0 1223 872933 Fax: (+44) 0 1223 872934
E-mail: sales@airprotekt.co.uk Our Website www.airprotekt.co.uk