



## Industrial & Marine Silencers

Exhaust Gas Silencers

Steam Vent Silencers

Air Intake Silencers

Air Inlet and Extract Attenuators

Weather Louvres

Acoustic Doors

Acoustic Canopies

Catalytic Converter Units

Particulate/ DPF Filters

Selective Catalytic Reduction Systems

Components and Ancillaries

Planning, Installation and Commissioning

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## Our Business

### Company Profile



**Established in 1991, we began by manufacturing exhaust gas silencers and air intake silencers for the power generation industry.**

The quality of our work and expertise in this industry soon led us to become a major player, providing equipment for all of the major diesel engine manufacturers, generator set builders and mechanical services installers.

Natural progression and overwhelming support from our existing clients allowed us to extend our product range over the years and we quickly became established suppliers of boiler blowdown and air, steam and gas vent silencers, small gas turbine silencers, stand-alone catalytic converters and combined catalytic silencer/soot filters.



Expanding order books and an ever expanding world-wide customer base saw us having to make our first premises relocation in 1994, followed swiftly by our second move to a purpose-built manufacturing plant. Our development story has continued in much the same vein and 2013 has seen us come to our current site in Shepshed – the town in which we started – which has the quality of facilities and potential for growth which should keep us contented for the next few years at least!

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## Welcome

### Industrial & Marine Silencers

**When it comes to the reduction of noise and other pollutions, IMS really are world class – although as you can imagine, it's not in our nature to shout about it!**

Our engineered solutions have a number of applications; from general volume minimisation to the management of more unusual noises; from particle removal to sophisticated control of emissions, we can custom make any of our units to fit an individual specification.

We manufacture exhaust silencers (both with and without spark arrestors), steam vent silencers, intake silencers, turbine silencers, emission reduction systems, generator enclosures and many more related ancillaries. Every step of the production process is carried out in-house at our purpose-built premises in the East Midlands, a central location with great transport links which allows us to service the whole of the UK and the wider world beyond.

Using our own teams of highly skilled engineers we can undertake total 'turn-key' projects from the design stage through installation, commissioning and on-site support. Our capabilities are not only limited to the technical and engineering aspects of a plant; we have a great deal of experience in working with local planning and environmental regulations across a very wide variety of countries (and conditions) throughout the world. This knowledge and earned respect within our field allows us to provide true project management including site surveys, problem analysis, structural calculations and foundation drawings.



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# Silencers

## Exhaust Gas Silencers

Our exhaust gas silencers have been installed all around the world within a number of diverse industries, from power generation and petro-chemical to railway and marine applications, including offshore. The range of silencers which we have developed makes use of both reactive and absorptive technologies; from the more basic FP industrial type to the advanced MRA3 critical models, each can meet the varying levels of demand placed upon them.

We can offer a selected range of this product with in-built spark arrestors certified to DNV or ATEX approval as well as removable catalysts which can be supplied in a separate housing or actually built within the silencers themselves. For maximum flexibility we can also manufacture two, three or four pass box silencers and can vary the positioning of the inlets and outlets where space is restricted. As with every one of our products, we can offer full installation of the exhaust silencers (complete with ancillary pipework) or simply supply the unit only.

## Steam Vent Silencers

IMS steam vent silencers are used to attenuate the noise which results from the expansion to atmospheric pressure of gas, steam or air at elevated temperatures. Applications normally fall into one of two categories, either the reduction of noise within the workplace or the management of noise which might otherwise be released into industrial or residential areas. Within the IMS range we provide vent silencers for steam ejectors, process vents, turbine and compressor bypass systems and safety/relief valves.

## Air Intake Silencers

The operation of large diesel and gas powered engines requires the intake of large volumes of air. This air, which is essential for combustion, can be introduced naturally or alternatively via turbo chargers or compressors, increasing the pressure to the cylinders and significantly improving performance. On the down side this also generates a large amount of noise which can radiate out into the surrounding environment.

IMS silencers are custom designed to fit the particular characteristics of the individual system flow and include both annular and rectangular options. Our FP type silencer is a simple 'straight-through' design but also within the range are the more complex FPC and FPS types.

These models offer additional features such as a central pod or annular splitters and can be placed between the engine and its corresponding filtration unit. For both the largest applications and those requiring very low pressure drops, we can provide single or multiple framed banked systems and rectangular parallel type splitters, all of which can be installed either before the filter housing or upstream from it.





## Ventilation

### Air Inlet & Extract Attenuators

Our air inlet and extract attenuators are designed and built to address the noise and ventilation issues associated with the operation of generators. Even when housed within purpose-built plant rooms, generators often have a requirement for additional ventilation and can still dissipate unsuitable levels of noise to the surrounding area.

The product range we have developed addresses these needs in a number of ways from basic sound attenuation and weather protection to the higher specification splitter models which will match the level of noise protection required by any set of operating conditions.



### Weather Louvres

To complement our range of attenuators we also manufacture fixed blade weather louvres and motorised gravity flap weather louvres. These can be constructed from various material options and can be provided in a variety of colours and finishes to match existing plant. The blade assembly uses a standard fixing flange which can also be drilled to suit any established mounting.

Single blade and chevron blade louvres are manufactured with a Zintec/galvanised steel top section containing an acoustic infill of resin-bonded mineral fibre which has a number of very favourable characteristics; As well as being chemically inert it is also non-combustible, non-hydroscopic, vermin-proof, rot-proof and will not support bacterial growth.

Where the local environment introduces its own challenges – for example where large amounts of dust and particles are created by industrial processes in the vicinity - we can supply motorised units and/or incorporate gravity flaps, sand traps and even penthouse-type louvres.





## Noise Management

### Acoustic Doors

With ever increasing focus on employees' health and safety in the workplace it has become more important than ever to ensure that noise is managed and appropriate protection is put in place.

To aid in this we are able to offer a full range of acoustic doors which can provide three levels of sound reduction from 30dB up to 45dB. Further flexibility is provided by a number of tailor-made features, including left and right handed versions, removable central pillars in our double doors and an extensive list of optional extras.

By offering a choice of paint finish, inclusion of single or double glazed windows, positive door stops, recessed sills, fixed lugs for incorporation into brickwork, sliding mechanisms and maximum compression door seals, we really do feel that we can provide a door to suit any application, regardless of how specific your needs are.



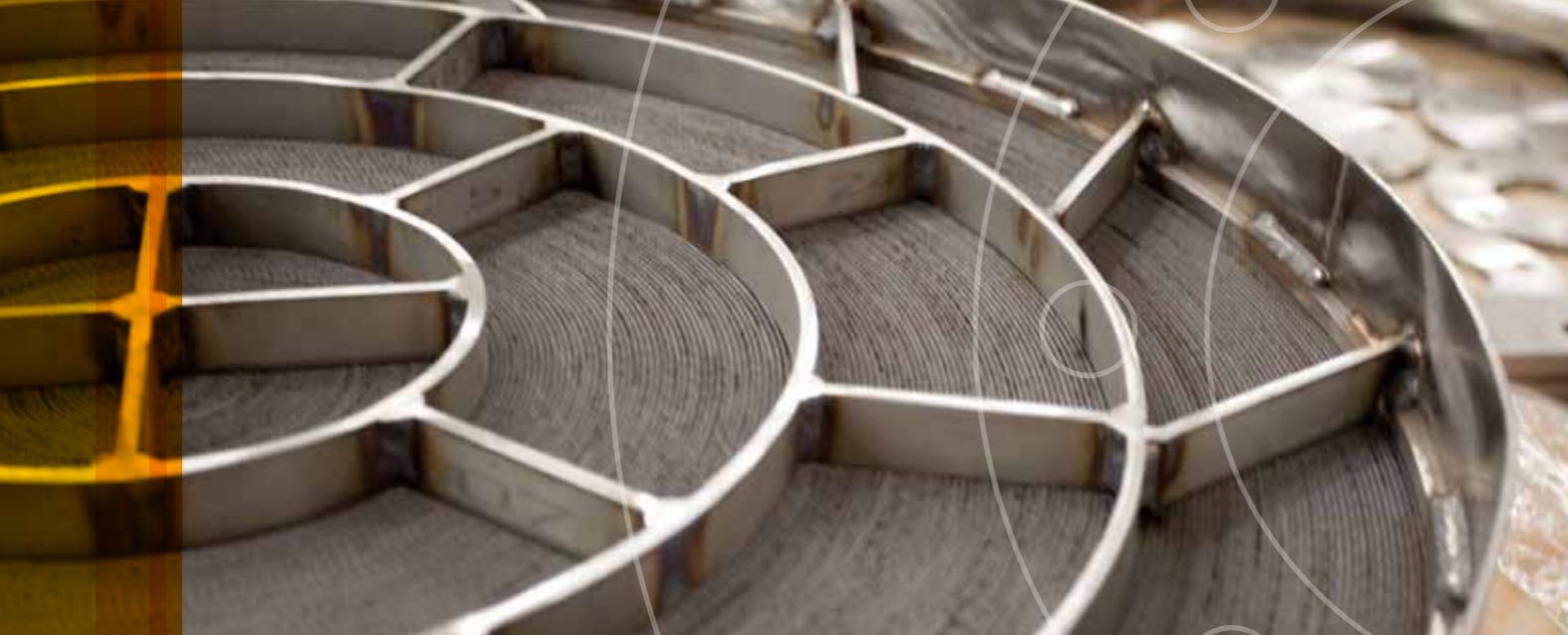
### Acoustic Canopies

The noise (and potential danger) which comes with a generator means that great care must be taken when considering how and where it is positioned. Our canopies not only ensure that employees are protected from the effects of noise, vibration and fire risk but they also offer protection to the generator itself. As well as this physical shelter from the elements and surroundings we can also incorporate security, safe access and appropriate ventilation requirements to achieve your exact specification.

IMS weather canopies are constructed using a Zintec steel body which is put together in individual sections and then welded together to give a strong and rigid final structure, even in the case of our de-mountable option. Air intake is via a series of either mesh or fixed louvred apertures and baffles whilst flexible canvas plenums are used to allow the connection of radiators to outlets.

As you would expect we have a range of options to allow a truly customised end product. Access doors can be positioned at either side and/ or the rear section and can incorporate viewing panels, AV mounts, slam lock fastening, compression-type seals and chrome finished handles. In every case the panels are constructed in fully non-combustible materials which ensures that they are in full compliance with Class 1 Spread of Flames requirements.





## Oxidation Catalyst

## Selective Catalytic Reduction

### Catalytic Converter Units

Catalytic converters have a wide variety of applications; some of these are close to our core activities such as electrical/generator power plants and combined heat and power plants but others are a little more diverse – locomotives, construction vehicles, ships, yachts, tractors, commercial vehicles, buses, greenhouses and waste incinerators to name but a few.

At IMS we manufacture two main types of exhaust gas catalytic converters. The first is a single stage converter unit which reduces levels of Carbon Monoxide whereas the second is a two stage converter which also reduces Hydrocarbons. Regardless of which option is required the design remains cutting edge with stainless steel substrate construction and optimised surface area to maximise efficiency of reaction; design which is applied to meet even the most stringent legislative requirements.

Catalytic converters can be installed as stand-alone units with coned inlet and outlet pipework to allow straight- forward insertion into the existing system. Alternatively they can be integrated within the exhaust gas silencer which eliminates the need for a separate housing.



### (SCR) Systems

Nitrogen Oxide (NOx) is the general name for any compound of Nitrogen and Oxygen and the two most common forms are Nitrogen Dioxide (NO2) and Nitric Oxide (NO). Both of these gases are produced during power generation which brings rise to environmental concerns about air pollution.

Our SCR systems can reduce such emissions by over 90%; the 3 stage unit reduces Carbon Monoxide, Hydrocarbons and Nitrogen Oxide. By the clever utilisation of a number of effective reagents dosed directly into the exhaust gas line we are able to convert the NOx to Nitrogen and water, both of which can be dissipated safely to the environment.

Just like our single and two stage catalytic converters our SCR products have very diverse applications, many outside of the power generation industry.





## Filtering

### Particulate / DPF Systems

**Our self-regenerating Active DPF Series filters really are a breed apart from the competition.**

The IMS approach to filters is to utilise only the most effective and reliable technology and that is why our patented systems utilise active rather than passive regeneration. Passive (or uncontrolled) regeneration can occur when a very specific series of conditions are met but when we consider the variation in load, ambient temperature, installation characteristics and operational patterns of a typical generator it is almost impossible to guarantee filter reliability or emergency power availability with this type of system.



The active regeneration process on the other hand involves the cleaning of the filters independent of factors such as the exhaust gas temperatures. Unfortunately it usually also introduces the need for electric heaters or complex fuel dispensing and burning systems prior to the siting of the filter to raise the temperature of the entire exhaust stream and this in itself requires large amounts of electrical power or fuel.

The advanced technology incorporated in our systems negates the need for this and therefore also moves away from the potential safety risk, high operating cost and general installation complexity which have traditionally been associated with the use of active filters.



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Within our Active DPF Series the application of an electrical current directly to the filter media means that accumulated soot can be oxidised at 700degrees in under 3 minutes and this is achieved whilst the filter is on-line, typically using less than 1% of the total generator output. A very clever built-in microprocessor allows the constant measurement of back pressure, temperature and even the time elapsed and therefore ensures that regeneration happens exactly when it needs to, efficiently, safely and with no costly down time or manual input being required. This controlled regeneration delivers uniform burn off of soot and maintains a low exhaust system back pressure; what's more the filter operates at any exhaust temperature, tolerates all fuel grades regardless of their sulphur content and utilises no precious metal catalyst. In short the IMS Active DPF Series allows the efficient and safe provision of standby power exactly when you need it.

### And speaking of competition...

Our technically advanced DPF Series filters made a very welcome appearance at the *London 2012 Olympic Games*. In conjunction with LOCOG (The London Organising Committee of the Olympic and Paralympic Games), we successfully installed our electrically self-regenerating Active DPF filters to 27 stationary generator-sets which were used over the entire duration of both the Olympic and Paralympic games. With the eyes of the entire world upon the event it was of utmost importance that everything ran smoothly and efficiently - an 85% reduction in particulate matter emission went part way to satisfying this need, but the fact that this performance could be delivered consistently, safely and efficiently was nothing short of world class!



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## Components & Accessories

## Summary



Our main aim at IMS is to offer you a total solution and we therefore complement our equipment range with the ancillaries and components which you may require to complete your installation. These components can either be supplied as individual items or part of a larger fabricated unit.

The most commonly manufactured accessories include:-

- Rain caps in pressed steel, cast alloy or stainless steel.
- Mild steel and stainless steel flanges, gaskets and bolt sets for BS10 Table D, ANSI 150, BS4505, PN6 – 16 and DIN 86044
- Mild steel and stainless steel pipework
- Twin wall stainless steel flues
- Stucco Aluminium exhaust cladding kits
- Expansion bellows
- Mild steel and stainless steel elbows
- Spring hangers
- Sockets and plugs in plain steel, BSP mild steel and stainless steel
- Vertical and horizontal brackets

IMS specialise in a range of products which are designed, manufactured and constructed in-house, utilising the best available materials and technology, supported by a team of highly skilled professionals dedicated to providing unrivalled customer service.

These include:-

- Exhaust Gas Silencers
- Steam Vent Silencers
- Air Intake Silencers
- Air Inlet and Extract Attenuators
- Weather Louvres
- Acoustic Doors
- Acoustic Canopies
- Catalytic Converter Units
- Particulate/ DPF Filters
- Selective Catalytic Reduction Systems
- Components and Ancillaries
- Planning, Installation and Commissioning







## Our Standards

*"We are a company who not only know where we are going but also understand exactly where we have come from and therefore what our true strengths and enduring qualities are. Despite being real specialists in our original chosen field we have remained flexible enough to recognise other areas where our skills could be utilised.*

*Never being happy with just being 'good' at whatever we do has stood us in good stead and not only allowed us to gain and keep the confidence of our existing clients but also introduced us to many new ones too. 'Innovative', 'Cutting Edge' and 'World Class' aren't merely our aspirations, they are the standards by which we measure ourselves in every aspect of our business."*



## Worldwide Installations

### From the East Midlands to the Antarctic

Our base in Shepshed is just 5 minutes from the M1 motorway in the heart of the UK – great in terms of servicing all locations on this fair isle but, just as importantly, an ideal place from which to access the rest of the world. Our equipment has quite literally been installed across the globe; culture and language might change from continent to continent but the need for innovation, quality and reliability always remains the same.

- |              |             |                      |                  |
|--------------|-------------|----------------------|------------------|
| • Antarctica | • Finland   | • Malaysia           | • Singapore      |
| • Argentina  | • France    | • Mexico             | • South Africa   |
| • Australia  | • Germany   | • Monaco             | • Spain          |
| • Austria    | • Gibraltar | • Netherlands        | • Sweden         |
| • Belgium    | • Greece    | • New Zealand        | • Thailand       |
| • Brazil     | • Hong Kong | • Nigeria            | • Turkey         |
| • Bulgaria   | • Hungary   | • Northern Ireland   | • UAE            |
| • Canada     | • Iceland   | • Norway             | • United Kingdom |
| • China      | • India     | • Philippines        | • USA            |
| • Colombia   | • Israel    | • Poland             |                  |
| • Denmark    | • Italy     | • Portugal           |                  |
| • Egypt      | • Japan     | • Russian Federation |                  |





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