



# EXHAUST SOLUTIONS:

Agriculture  
Construction  
Industry

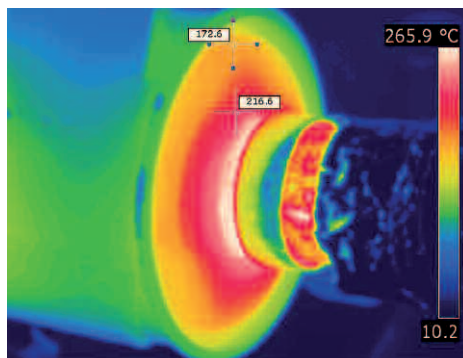
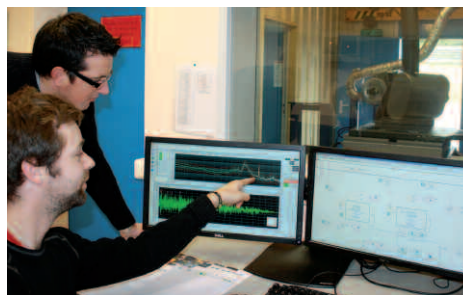
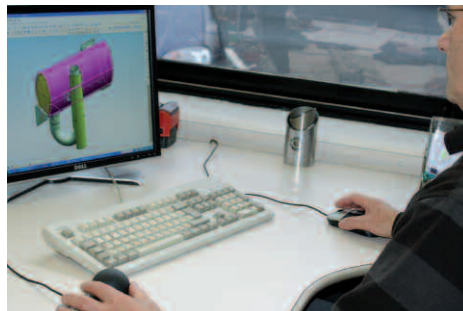


**For A Cleaner World.  
Improve. Enhance. Protect.**

# DESIGN

## Research & development

- Acoustic & vibration studies in laboratory and on-site
- Definition & integration in the customer environment (CAD)
- Simulation of fluid mechanics and structural durability (CAE)
- Prototyping



## Laboratory

### Measurement systems

- 12 channel data acquisition system
- Sensors: accelerometers (single axis and tri-axial), microphone, thermocouple, transducer...
- Impact hammer
- Infrared camera

### Vibration bench

- Testing of complete systems in hot condition
- Power: 55,6 kN
- Movement: +/- 31.75 mm

### Engine test bench

- Transmission loss and acoustic attenuation
- Tests on engine up to 745 kW



# EMISSIONS

## Technology

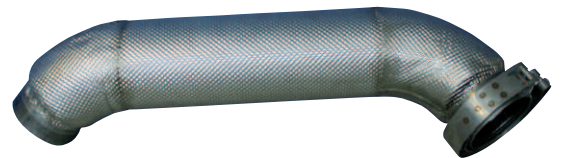
- SCR (Selective Catalytic Reduction) incorporating urea injection
- DOC: (Diesel Oxydation Catalyst)
- DPF: (Diesel Particulate Filter)



## Technical development

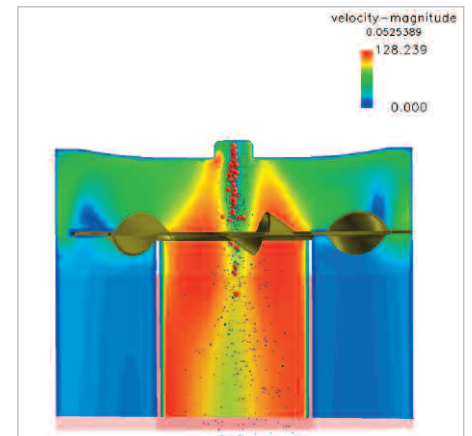
### High performance insulation solutions

- Integrated or removable solution



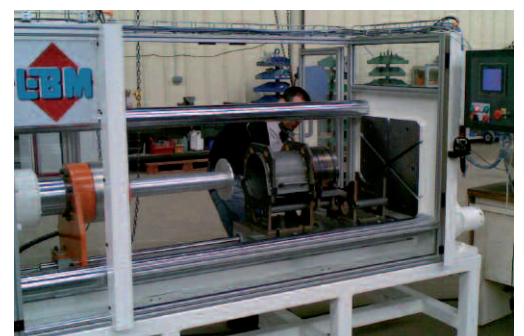
### Computational Fluid Dynamics (CFD)

- Simulation of flow distribution into the substrates
- Simulation of urea droplets mixing and evaporation



## Canning

- Encapsulation of ceramic substrates
- Donaldson's process ensuring the longevity of the exhaust line
- Traceability of each filter module and its manufacturing specifications



# PROCESSES

## Acoustic mufflers and spark arrestors

- Lockseamed, crimped and welded bodies
- Round, oval or square sections
- Robot or manual welding (steel or stainless steel)
- Finishing on products:
  - High temperature paint or unpainted
  - Aluminized steel or stainless
- Adapted production for small and medium production volume
- Production with or without assembly jigs
- Design and manufacturing of jigs



## Tubes



- Application: exhaust, air and water
- Bending diameter from 18 to 127 mm
- End forming: expansion, shrink, flared, bead...
- Finishing on products:
  - Electrophoresis
  - High temperature paint or unpainted
  - Aluminized steel or stainless
- Robot or manual welding (steel or stainless steel)

## Insulation

- Integrated technologies



- Removable technologies

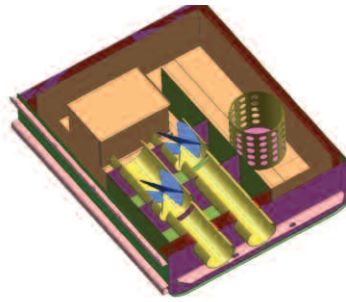




# SERVICES

## Quality

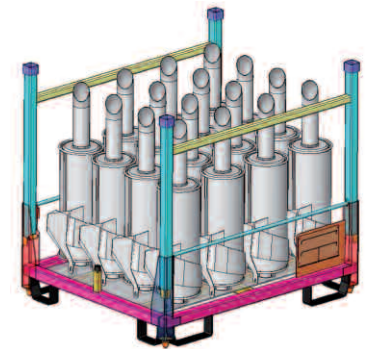
- Certification ISO 9001
- Certification ISO 14001
- Certification INERIS & DNV for the spark arrestors



## Packaging



- Development in partnership with customers / suppliers of specific containers
- Integration & management of packaging customers



## Logistics

- Logistics platform with an area of 2500 m<sup>2</sup>
- EDI (Electronic Data Interchange)





## Why Donaldson ?

- Technology provider, from design to manufacturing
- Global acoustic, emissions and filtration solutions
- Global presence with major manufacturers in construction, agriculture, industry ...
- Complete exhaust lines



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