

CREMATORIA MONITORING

CUSTOMER PROCESS BROCHURE

- **Acclaimed combustion analysis solution enables highly efficient combustion control, reducing fuels costs and NOx emissions**
- **Flexible Continuous Emissions Monitoring analyzer offers simultaneous measurement of carbon monoxide and flue gas oxygen**
- **Wide range of options and accessories available for individual process customization**

A modern crematorium utilizes an incinerator to burn the bodies of the deceased for cultural purposes or as an alternative to a coffin/casket burial. The majority of crematoria are gas fired, with the 'charge' (the deceased) itself acting as a secondary fuel to support combustion.

As with most combustion applications, it is just as important to maximize the efficiency of the process, as this reduces fuel costs, limits the production of emissions such as carbon monoxide (CO), and helps ensure the cremation process is complete and time-efficient. The

efficiency of a process can be maximized by measuring the oxygen (O₂) and combustibles (COe) levels in the exhaust gas stream, and using this data for direct damper/air flow control. This allows operation closer to the peak efficiency of the process whilst reducing emissions.

Stack emissions must also be monitored to ensure the crematorium meets its local environmental regulations. Continuous Emission Monitoring Systems (CEMS) are used to measure a range of gases including the commonly measured oxygen (O₂) and carbon monoxide (CO). Emissions readings are

often submitted to the local authority for review and crematoria can face fines or even lose their license if emissions are continually high. Excess oxygen (O₂) is a sign of complete combustion and carbon monoxide (CO) emissions should be kept to a minimum.

Servomex offers a proven two analyzer solution for managing combustion control and monitoring emissions, ensuring operators reduce fuel costs and meet local and national legislative requirements for emissions.



TYPICAL CREMATOR APPLICATION MAP

KEY:
APPLICATION TYPES:

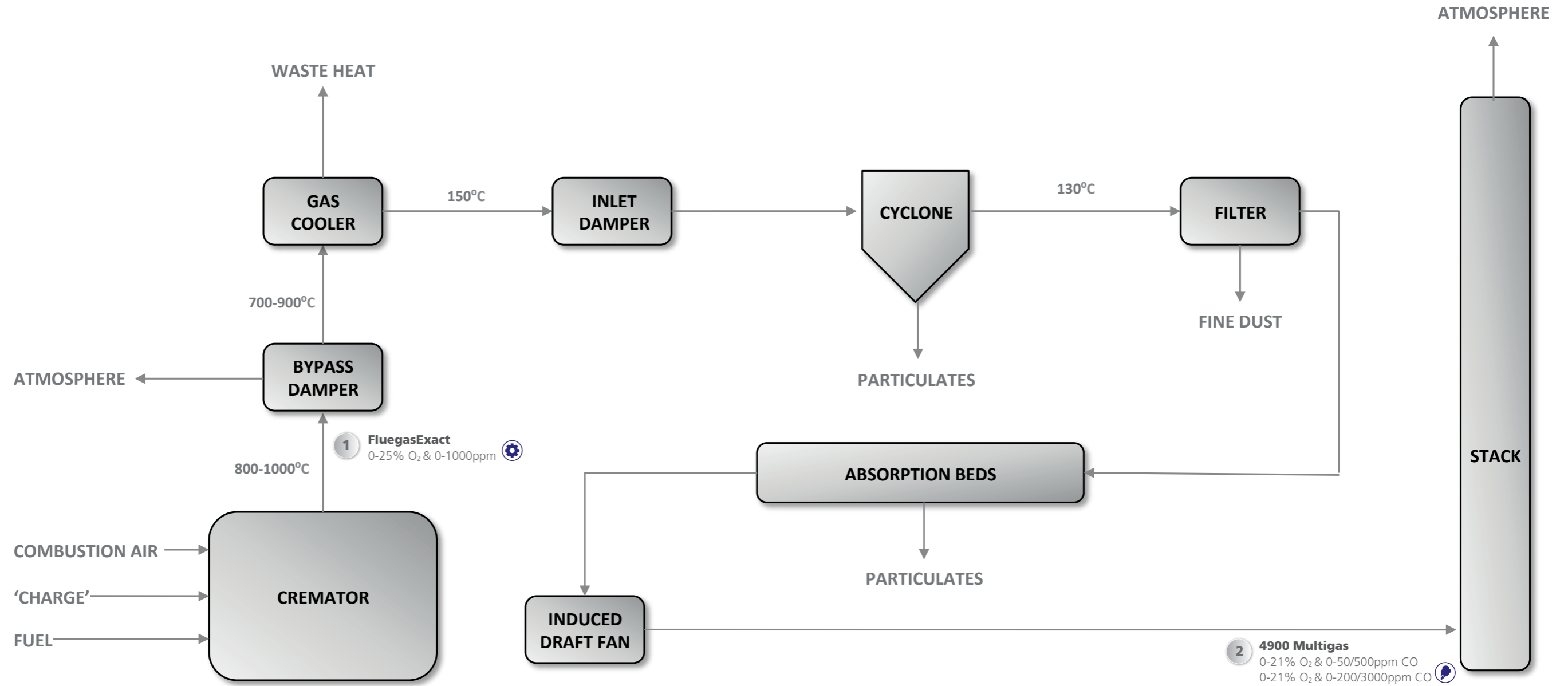
PROCESS CONTROL

QUALITY

SAFETY

EMISSIONS

COMBUSTION



PROCESS DESCRIPTION

The **SERVOTOUGH FluegasExact 2700** combustion analyzer is used to monitor both oxygen (O₂) and combustibles (COe) in the cremator exhaust gas (1). Due to the regulations involved crematoria require an accurate and reliable O₂ measurement to operate closer to their control point to achieve maximum attainable efficiency. The COe measurement is utilized to fine tune the process and detect COe breakthrough. This is a secondary indication that O₂ has decreased and unwanted emissions are beginning to form.

O₂ is measured using zirconium oxide (Zirconia) sensor technology, while COe are measured using a thick film catalytic sensor (Tfx) optimized for carbon monoxide (CO). These two measurement sensors are housed inside a sensor head typically mounted directly onto the cremator stack wall. The sensor head is a heated enclosure and its temperature is maintained above the dew point of typical flue gas, thus minimizing the risk of condensates forming. A sample is extracted via an aspirator and makes its way up a sample probe and into the sensor head for analysis.

The **SERVOPRO 4900 Multigas** analyzer is used to monitor both O₂ and CO in the process stack emissions (2). O₂ is measured using paramagnetic sensor technology, while CO is measured using infrared Gas Filter Correlation (Gfx) technology.

These two measurement sensors are housed inside a 19" rack mountable enclosure and often built into a rack along with a bespoke gas sample conditioning system.

This system is used to extract a hot, wet gas sample and dry it to remove the moisture content ready for analysis. The bespoke sample conditioning system that ships with each analyzer is designed to meet the specific needs of the customer and their particular process. This system sits between the **4900** and the process, handling sample extraction, filtering, moisture removal and pressure and flow regulation.

SERVOMEX ANALYSIS SOLUTIONS

FluegasExact 2700

SERVOTOUGH



THE WORLD'S MOST ADVANCED
FLUEGAS ANALYZER

4900 Multigas

SERVOPRO



MULTIGAS CONTINUOUS EMISSIONS ANALYZER



CPSPECT Rev. 0.03/19



ANALYZERS



SERVICE



SYSTEMS



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