



DESULFURIZATION

Traditionally, wet scrubbing and semi-wet desulfurization have dominated the market. However, that is expected to change in the coming years, as the advantages of Dry Injection Desulfurization (DID) become better known. Redecam considers DID to be the “state-of-the-art” technology and as its price tag has fallen, it is the only desulfurization system Redecam has chosen to offer. DID removes SO₂ (sulphur dioxide), SO₃ (sulphur trioxide), HCl (hydrochloric acid) and HF (hydrogen fluoride).

WHY CHOOSE OUR DRY INJECTION DESULFURIZATION SYSTEM?

Our high performance system

Our DID system is **up to 98% effective**, depending on which of our three models you choose and your plant's process parameters.

Our attractive price tag

Our DID system costs a fraction of the price of traditional desulfurization methods.

Our fast execution

Whereas a wet scrubbing system can require over a year from design to installation, our DID system requires months to complete.

Our efficient injections

Using our in-house simulation software, we calculate the optimal injection points to ensure a homogeneous gas distribution, garnering a more effective reaction.

Our compact system

Our DID has a very limited footprint compared to other solutions that require significant space.

Our system's low sorbent consumption

We can design a system that uses minimal reagent when paired with the recirculation option.

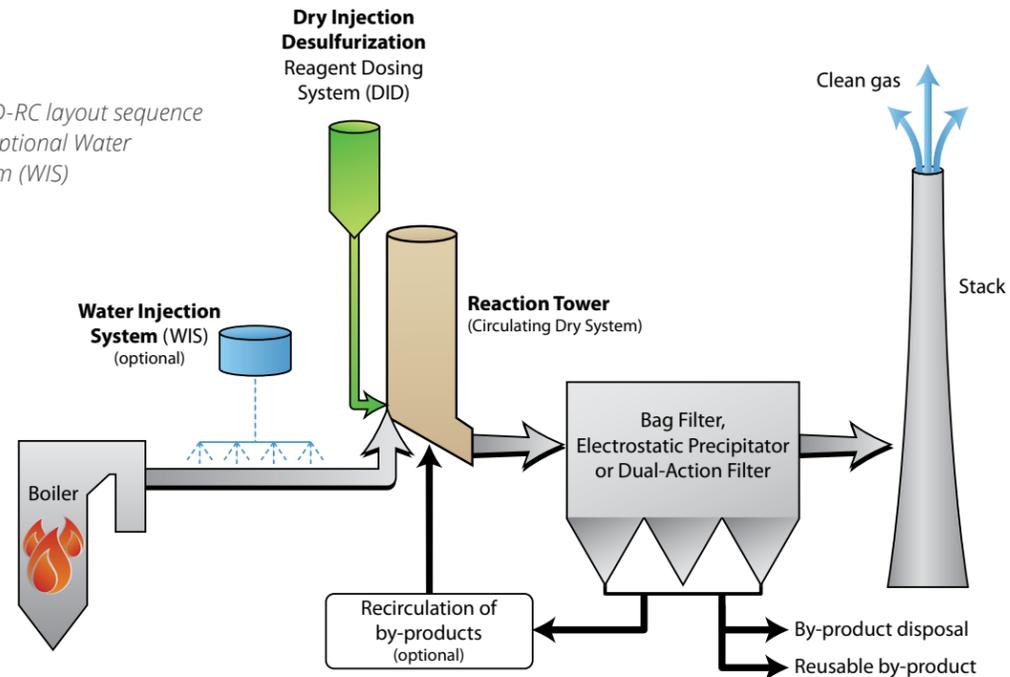


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OUR DRY INJECTION DESULFURIZATION SYSTEM

Our Dry Injection Desulphurization (DID) system removes gaseous pollutants that may cause acid condensation: SO₂ (sulfur dioxide), SO₃ (sulfur trioxide), HCl (hydrochloric acid) and HF (hydrogen fluoride). Regulations involving the emission of these gases are getting stricter and this technology is increasingly on the radar at many power, waste-to-energy, metals, mining, biomass and pulp and paper facilities as well as at cement plants, among others.

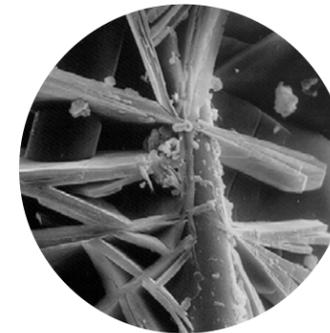
Example of DID-RC layout sequence featuring the optional Water Injection System (WIS)



STRATEGIC REAGENT SELECTION



Quicklime



Hydrated lime



Bicarbonate



Trona

Calcium-based reagents

Sodium-based reagents

A pure reagent is key to attaining the highest performance possible for your system. We do realize that very pure reagents are not always an option. We will therefore study and design solutions that will work with medium quality options, if applicable.

The reaction temperature will have implications on several aspects of the system including the efficacy of the reagents. Depending on what the temperature is, a conditioning system could be required. For example, lime requires a lower reaction temperature, necessitating our Water Injection System to cool the gas.

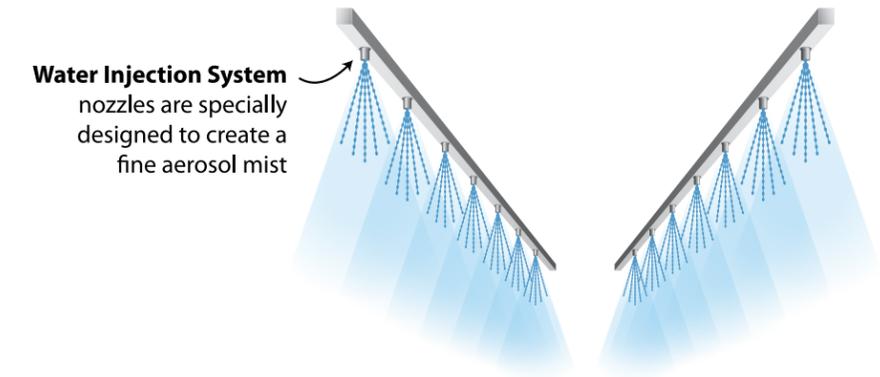
REDECAM OFFERS THREE DID MODELS:

<p>DID - WITH IN-DUCT LANCES</p> <ul style="list-style-type: none"> To consider in most applications, when the ductwork is long enough to allow gases to remain longer Ideal for retrofit applications as no extra-footprint is required Fly ash removal in a single step Low treatment time (at times less than 1s) Capable of supporting multi-pollutant removal 	<p>DID-R - WITH REACTION TOWER</p> <ul style="list-style-type: none"> To consider in incineration, biomass or waste-to-energy (WTE) plants as well as in facilities (such as cement plants) needing high performance systems Fly ash is removed with an air filtration system after sorbent is injected and SO_x, HCl and HF are removed Low treatment time (1-3 s) Capable of supporting multi-pollutant removal 	<p>DID-RC - WITH REACTION TOWER AND RE-CIRCULATING SYSTEM</p> <ul style="list-style-type: none"> To consider in power, incineration, biomass and WTE plants Enhanced performance and lower OPEX as by-product recirculation reduces the amount of reagent needed and improves abatement efficiency Low condensation, with conservative approach to saturation temperature Fly ash is removed with an air filtration system after sorbent is injected and SO_x, HCl and HF are removed Low treatment time (1-3 s)
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Advantages of our DID vs. Wet Flue Gas Desulfurization (Wet FGD):

- 1 CAPEX is usually 4 times less, but in some cases can be 1/10 the price
- 2 Significantly more compact: requires a dosing silo and at times a reactor vs. a footprint of up to 5,000 m² (54,000 ft²)
- 3 OPEX for water and electricity is much lower
- 4 Minimizes the production of nitrogen oxides (greenhouse gases) due to low operating temperatures

OUR MARKET-LEADING WATER INJECTION SYSTEM (WIS)

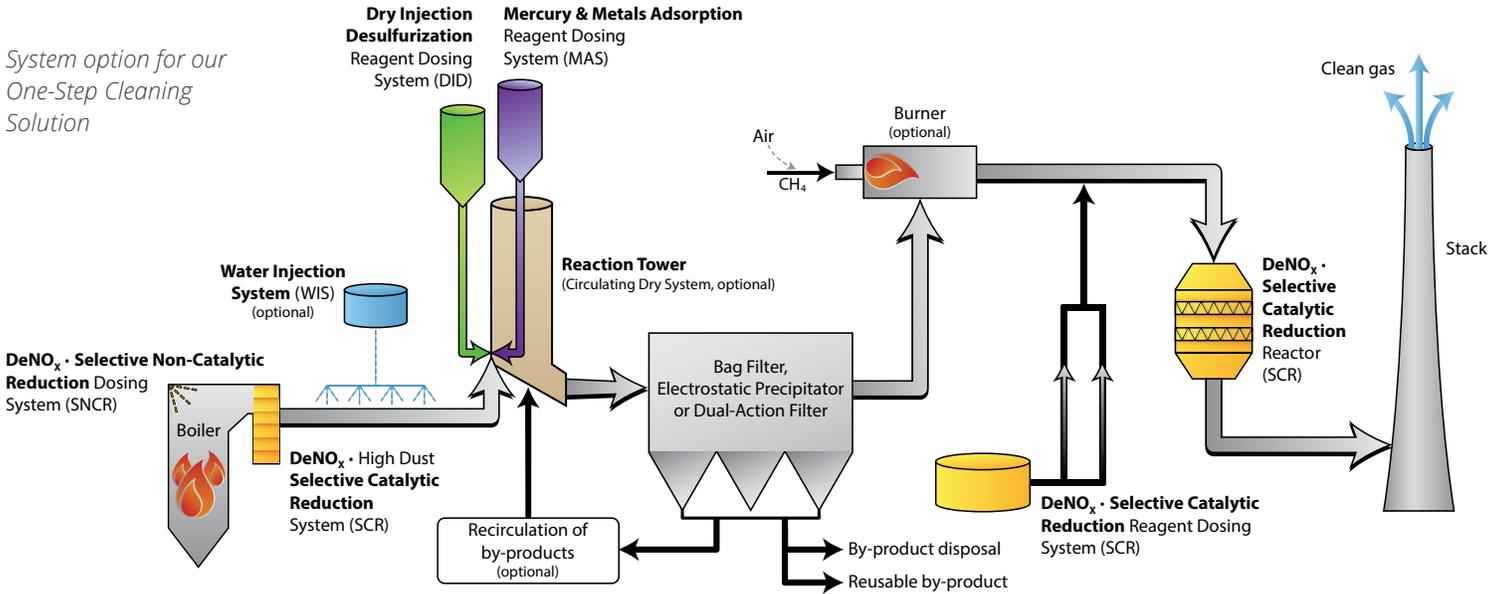


Our Water Injection System (WIS) can be added to your system to control the temperature and re-activate the sorbent, if necessary. Our WIS has special nozzles that convert the water into a fog, giving us the highest evaporation rates on the market. Our WIS can, in certain cases, be key to an optimal desulfurization process, as desulfurization is highly dependent on the relative humidity of the flue gas (the higher the humidity, the higher the desulfurization efficiency). Our experts will study your process parameters and system targets and suggest whether a WIS is necessary for your system.

Advantages of our Flue Gas Treatment Solutions

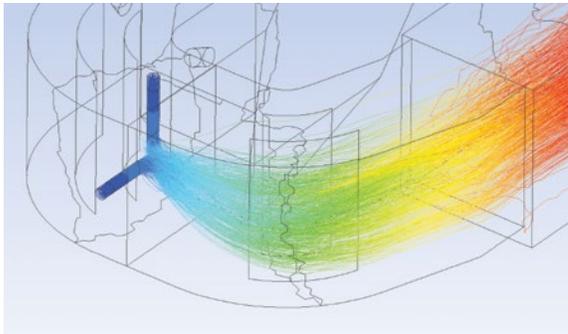
OUR COMPLETE PRODUCT PORTFOLIO

Our highly efficient and innovative filtration solutions can secure a better reaction from your flue gas treatment (FGT) system. From design to commissioning, we can provide everything necessary to optimize your emissions reduction system from air filtration to flue gas treatment, including conditioning, storage and handling systems.



OUR ONE-STEP CLEANING SOLUTION

Our proven system removes all pollutants (dust, SO_x , NO_x , mercury, HCl, HF, dioxins, furans, heavy metals), while offering an easy, low-cost installation and a highly compact design. Whether to meet current air emission reduction targets – or to prepare for future regulations – our One-Step Cleaning Solution is a cost-effective way to adhere to all environmental legislation.



MODELLING

We use Ansys's Fluent software to accurately design and study every solution. This allows us to engineer and analyze each system's broad physical capabilities, optimize the fluid dynamics and study the efficiency of pollutants removal. When a computerized simulation is not sufficient, we undertake a physical simulation on a 1:7 scale in our Milan workshop.

Redecam offers a comprehensive portfolio of air filtration, flue gas treatment (FGT), gas conditioning and transportation, handling & storage products. Please contact us to see how we can take care of all your air pollution control needs.



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Visit our website to learn more at
www.redecam.com
 or scan this code:



ITALY (HEADQUARTERS)
 ☎ +39 02 243491
redecam@redecam.com

BRAZIL
 ☎ +55 11 3044.4125
redecam.brazil@redecam.com

U.S.A.
 ☎ +1 704 969.8811
redecam.usa@redecam.com

CHILE
 ☎ +56 2 2789 0358
redecam.chile@redecam.com