CTP-DUMAG COMBUSTION TECHNOLOGIES

Firing for your processes

Sulphur

Spent Sulphuric Acid

CTP-DUMAG burners and CTP-DUMAG burner-combinations for spent sulphuric acid plants

Spent sulphuric acid injected via lances in the burner or lances in the burner chamber

Atomization of the spent sulphuric acid by CTP-DUMAG® -ultrasonic nozzles of the jet nozzle or tulip nozzle variety featuring distribution inlays specifically constructed for contaminated media

Applicable to the whole power output range of CTP-DUMAG burners

Burner dimensioned as combined fuel burner, spent sulphuric acid combined with

- oil
- sulphur
- fuel gas

or spent sulphuric acid combined with

- sulphur and gas or oil
- or might also be combined with the combustion of sour gas or H_2S-gas

More than 30 years of experience in the combustion of spent sulphuric acid in various combinations

Advantages

- Stable free flame without flame holder plates at burner outlet thanks to highly turbulent CTP-DUMAG® ultrasonic atomizer nozzle – decreases contamination, maintenance rate, blackouts
- New developed CTP-DUMAG®-ultrasonic atomizer nozzles with increased control range 1:7
- Controllable flame length and temperature distribution via burner swirl and adjustable nozzle for optimization of the system
- No rotating parts in the hot combustion chamber – no abrasion caused by rotating parts
- Low combustion air pressure loss above the burner reduces investment cost and operating expenses of ventilator

CTP-DUMAG Services

- Basic and detail engineering
- Layout of the plant
- Computational Fluid Dynamics CFD
- Delivery of a ready-for-use burner system including control and safety technology
- Delivery of valve rack with all necessary controls, including heated controls, piping system and flanges to ensure constant viscosity of sulphur
- Delivery of combustion chamber
- Mechanical testing in the CTP-DUMAG workshop – also for big burners
- Documentation
- Supervision of erection
- Commissioning
- Service and remote maintenance of the burner plant
- Revamp

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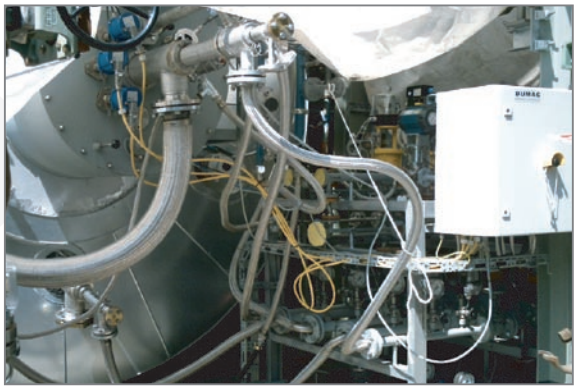
COMBUSTION TECHNOLOGIES

Firing for your processes

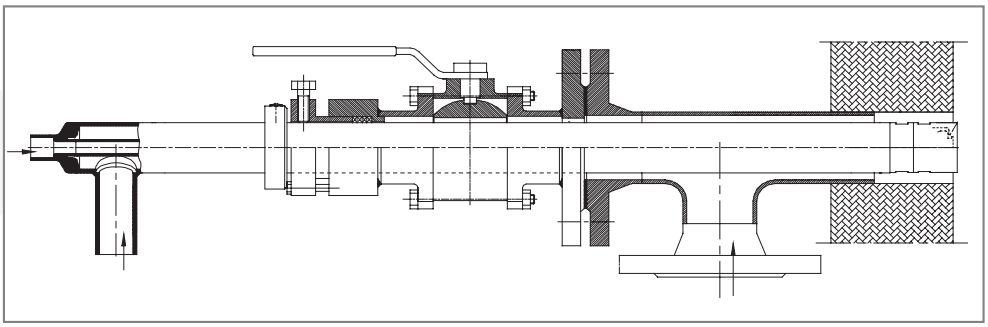
Sulphur

CTP-DUMAG – **Burner as Support Burner for Sulphuric Acid Combustion**



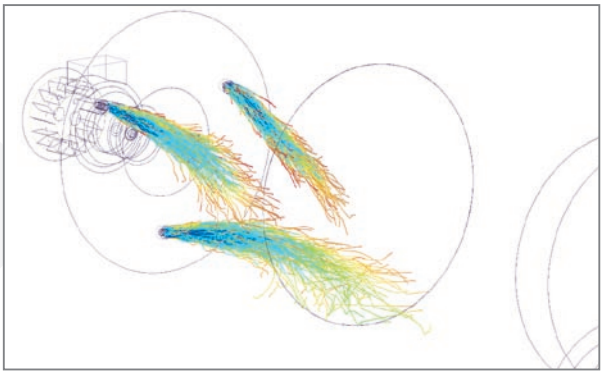
Burner for sulphur with fuel oil lances and 3 gas lances for spent sulphuric acid. Gas lances mounted symetrically around the burner in the front plate of the combustion chamber

Ultrasonic Nozzle featuring Lance for the Injection of Spent Sulphuric Acid



3 to 5 lances positioned in the front plate of the combustion chamber, placed symetrically around the main burner. With the possibility to seal off the opening of the burner chamber after extracting the atomizer lance out of the combustion chamber wall. Equipped with cooling air connection for cooling of lance and ball valve closing-off

Computational Fluid Dynamics CFD



Particle tracks for injected droplets, coloured by droplet temperature for spent sulphuric acid

CFD-simulation by the TU Vienna includes simulation models of burner and burner chamber (with and without perforated walls) and the lateral injection into the burner chamber including the spatial distribution of

- SO_2, SO_3
- sulphur
- temperature
- radiation
- velocity
- concentration
- hydraulic residence time
- droplets

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