



Spraying Systems Co.®
Experts in Spray Technology



SULFUR BURNING NOZZLES & GUNS

If you're spraying molten or spent sulfuric acid and need to improve performance and/or increase production, we can help. We have the industry's largest selection of sulfur burning nozzles and guns and a proven track record.

HYDRAULIC NOZZLES

- BA WhirlJet® hydraulic nozzles have been the industry standard for decades. These offset hollow cone nozzles produce small drops and feature open flow passages to resist clogging. Flow rates up to 38 gpm (144 lpm)



AIR ATOMIZING NOZZLES

- Air atomizing nozzles with SU89 spray set-ups produce smaller drops than hydraulic nozzles and with flow rates up to 3.7 gpm (14 lpm)
- Similar to standard air atomizing nozzles, FloMax® nozzles produce small drops but can operate at higher flow rates. Plus, these nozzles feature high turndown ratios to ensure consistent performance over a wide operating range. Available in many sizes and materials, FloMax nozzles can operate up to 30 gpm (114 lpm)



NEW HYBRID SULFUR GUN HYDRAULIC AND AIR ATOMIZING IN A SINGLE GUN

Watch a demonstration: spray.com/hybridgun

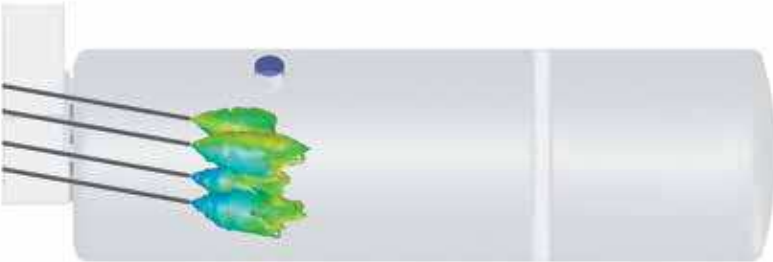
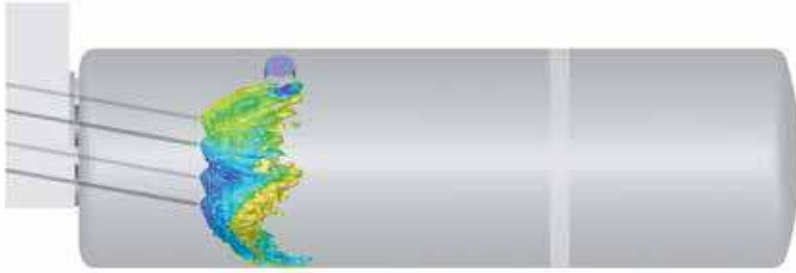
- Guns are designed for quick changeover from BA WhirlJet hydraulic nozzles to FloMax air atomizing nozzles
- Install the guns in one furnace. If performance expectations aren't met with air atomizing nozzles, quickly and easily convert back to hydraulic nozzles
- Hybrid and traditional sulfur guns are available for all of our nozzles and can be manufactured in many different lengths and materials and in compliance with ASME® B31.3-2010 standards
- Guns feature a special packing gland design to simplify maintenance and repair. Bellows design is also available

IDEAL FOR SPRAYING

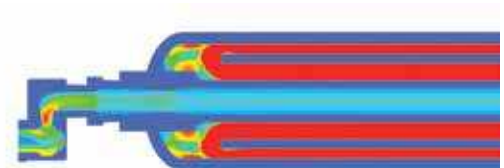
- Molten sulfuric acid
- Spent sulfuric acid

MODELING TOOLS HELP OPTIMIZE SPRAY PERFORMANCE, IDENTIFY POTENTIAL PROBLEMS

Optimizing sulfur spraying is dependent on many variables including atomization, drop size, residence time, placement of the gun and operating conditions in the furnace. Computational Fluid Dynamics (CFD) modeling can be used to improve performance. Common studies look at gun placement to avoid sulfur impingement on walls and drop size to determine the optimal size for full combustion and complete vaporization. Fluid Structure Interaction (FSI) modeling can also be used to evaluate the thermal and structural properties of sulfur guns to avoid failure due to temperature, vibration, pressure and stress.



CFD shows the difference in wall impingement when using a hydraulic nozzle (top) and air atomizing nozzle (bottom).



FSI analysis of sulfur gun in harsh combustion environment. Top illustration is a thermal analysis; bottom illustration shows velocity.

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