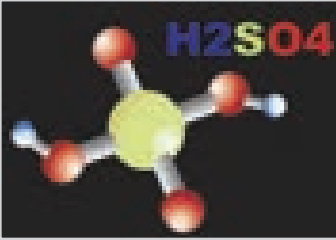


Sulfuric Acid Manufacturer Increases Revenue by More Than US\$40,000 per Year with New Spray Injectors

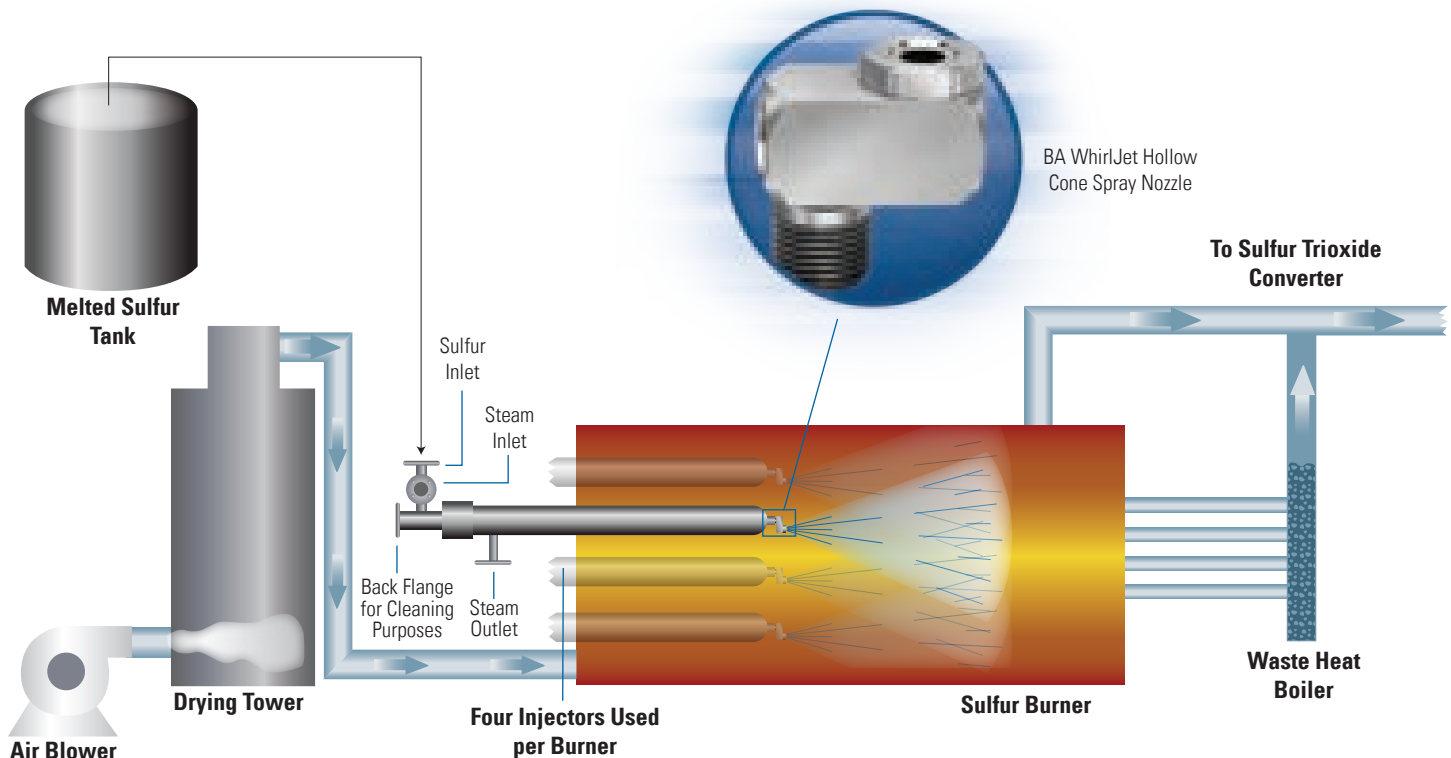


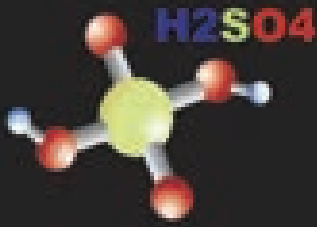
Problem:

Jordan Phosphate Mines Co. (JPMC), a leading producer of sulfuric acid, was using steam-jacketed injectors to spray molten sulfur in furnaces to form sulfur dioxide (SO₂). Four injectors were used in each furnace. The injectors had an internal bellows for thermal expansion. However, steam leaked from the bellows and compromised worker safety. Excess moisture was also created which increased maintenance time.

Solution:

Spraying Systems Co. developed a new injector design for JPMC. A special packing gland design is used, eliminating the need for the bellows joint and the leaking problem. The injectors are steam-jacketed and equipped with hydraulic BA WhirlJet® nozzles that produce a hollow cone spray. In addition, the injectors are designed to be more space-efficient to help simplify and reduce maintenance time.





Sulfuric Acid Manufacturer Increases Revenue by More Than US\$40,000 per Year with New Spray Injectors – Continued

Results:

JPMC has been using the injectors for more than two years and has experienced trouble-free operation. Steam leaks have been eliminated, worker safety improved and maintenance time decreased. As a result, production time has increased and is valued at approximately US\$42,000 per year. In addition, the injectors from Spraying Systems Co. cost less than the previously used injectors, an additional savings of US\$12,000.

A CLOSER LOOK AT THE SYSTEM

Sulfur spraying requires nozzles that produce small, consistently-sized drops that vaporize rapidly to prevent build-up in the furnace. BA WhirlJet® hydraulic nozzles have been the industry standard for decades. These inline nozzles produce small drops and feature open flow passages to resist clogging. Flow rates range from .21 gpm (.79 lpm) to 38 gpm (144 lpm). Sulfur guns can be equipped with a variety of nozzle types and are available in many different lengths and materials. The guns are typically manufactured in compliance with ASME® B31.3-2010 standards.



ASME® is a registered trademark of The American Society of Mechanical Engineers



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