ENGINEERING
YOUR SPRAY SOLUTION

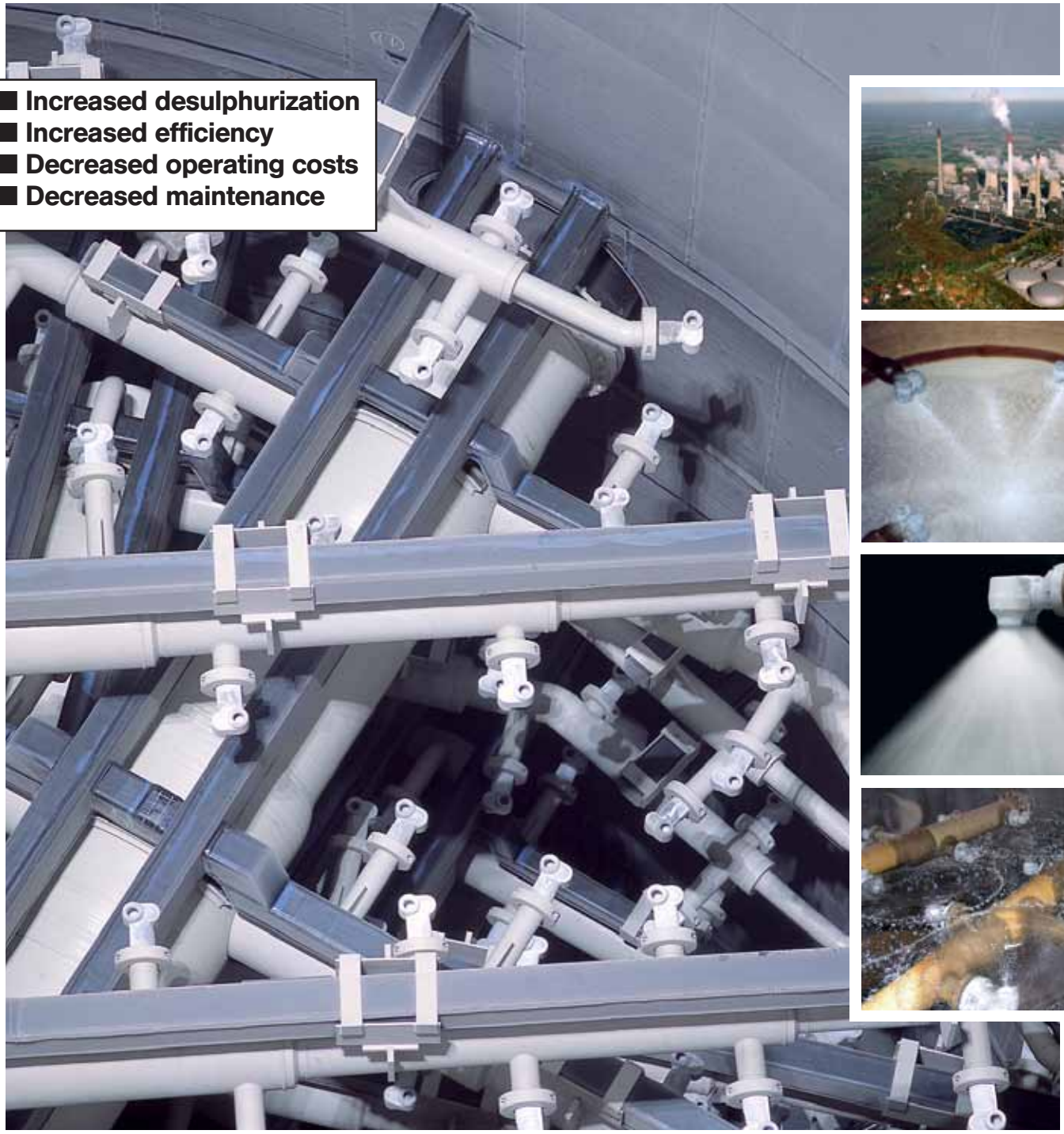
LECHLER

Patented!

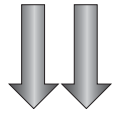
TwinAbsorb®

Advanced Technology for efficient Flue Gas Desulphurization

- **Increased desulphurization**
- **Increased efficiency**
- **Decreased operating costs**
- **Decreased maintenance**



TwinAbsorb®-EV Equilateral Full Cone Nozzle



The proven equilateral Full Cone Nozzle TwinAbsorb®-EV generates two full cones by using one single supply.

Advantages

- Creates smaller Sauter Mean Diameter (SMD d_{32}) through independent spray chambers.
- Increases flow rates per nozzle.
- Improves mass transfer by increasing droplet surface area.
- Promotes an even gas distribution over the scrubber cross-section.
- Rotation of spray transferred to gas flow is now compensated within the nozzle.
- Reduces gas sneakage along scrubber wall.
- Reduces slurry loss at scrubber wall in comparison to hollow cone nozzles.
- Reduces erosion of scrubber wall in comparison to hollow cone nozzles.
- Minimizes torque applied to pipe branches.
- Continues the following realized advantages of Lechler tangential flow full-cone nozzles currently in the field:
  - Completely self draining
  - Large free passages
  - Non-clogging design

Efficient use of atomized slurry

Easy installation and retrofit

TwinAbsorb®-EH Equilateral Hollow Cone Nozzle

The proven equilateral Hollow Cone Nozzle TwinAbsorb®-EH generates two hollow cones by using one single supply.

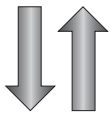
Advantages

- Creates smaller Sauter Mean Diameter (SMD d_{32}) through independent spray chambers.
- Increases flow rates per nozzle.
- Improves mass transfer by increasing droplet surface area.
- Rotation of spray transferred to gas flow is now compensated within the nozzle.
- Intensive secondary atomization creates more surfaces for increased mass transfer.
- Increased turbulence within the droplet allows reaction surface to re-activate.
- Promotes an even gas distribution over the scrubber cross-section.
- Provides a duplicate hydraulic spray level in comparison to a single spray level.
- Minimizes torque applied to pipe branches.
- Continues the following realized advantages of Lechler tangential flow hollow-cone nozzles currently in the field:
  - Completely self draining
  - Large free passages
  - Non-clogging design

Increased secondary atomization

Extra overlapping area

TwinAbsorb®-V Bi-directional Full Cone Nozzle

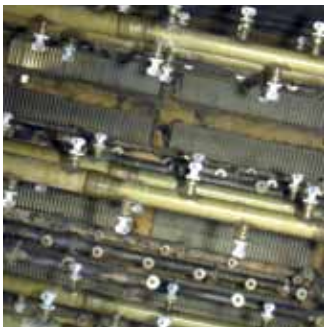


The proven bi-directional Full Cone Nozzle TwinAbsorb®-V generates two counter-rotating full cones.

Advantages

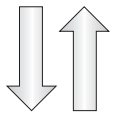
- Creates smaller Sauter Mean Diameter (SMD d_{32}) through independent spray chambers.
- Improves mass transfer by causing a higher relative velocity of liquid to flue gas.
- Rotation of spray transferred to gas flow is now compensated within the nozzle.
- Increased turbulence within the droplet allows reaction surface to re-activate.
- Droplet reaction time increased due to upward spray.
- Promotes an even gas distribution over the scrubber cross-section.
- Provides a duplicate hydraulic spray level in comparison to a single spray level.
- Pressure losses are reduced vs. a fully counter-current gas flow.
- Reduces slurry loss at the scrubber wall in comparison to hollow cone nozzles.
- Minimizes wall erosion in comparison to hollow cone nozzles.
- Minimizes torque applied to pipe branches.
- Continues the following realized advantages of Lechler tangential flow full-cone nozzles currently in the field:
  - Completely self draining
  - Large free passages
  - Non-clogging design

Customized configuration using state-of-the-art technology



Technically superior nozzle design to improve even a well-engineered system

TwinAbsorb®-H Bi-directional Hollow Cone Nozzle



The proven bi-directional Hollow Cone Nozzle TwinAbsorb®-H generates two counter-rotating hollow cones.

Advantages

- Creates smaller Sauter Mean Diameter (SMD d_{32}) through independent spray chambers.
- Improves mass transfer by causing a higher relative velocity of liquid to flue gas.
- Rotation of spray transferred to gas flow is now compensated within the nozzle.
- Intensive secondary atomization creates more surfaces for increased mass transfer.
- Increased turbulence within the droplet allows reaction surface to re-activate.
- Droplet reaction time increased due to upward spray.
- Promotes an even gas distribution over the scrubber cross-section.
- Provides a duplicate hydraulic spray level in comparison to a single spray level.
- Pressure losses are reduced vs. a fully counter-current gas flow.
- Minimizes torque applied to pipe branches.
- Continues the following realized advantages of Lechler tangential flow hollow-cone nozzles currently in the field:
  - Completely self draining
  - Large free passages
  - Non-clogging design

Customized configuration using state-of-the-art technology

Technically superior nozzle design to improve even a well-engineered system

www.LechlerUSA.com

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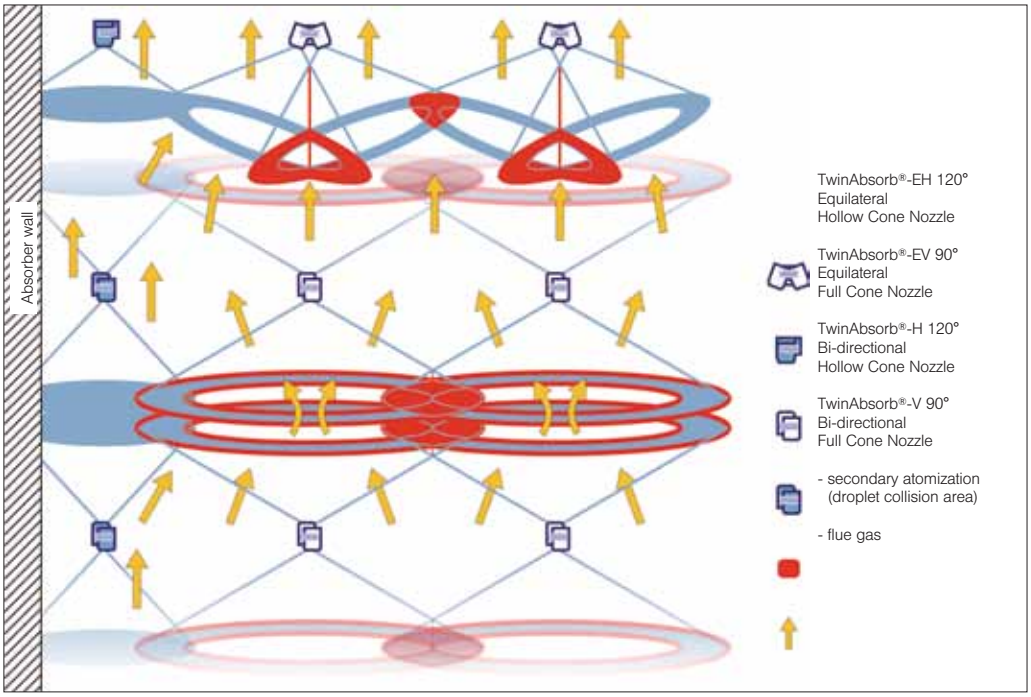
Customized configurations to meet stringent process demands



- Promotes better gas distribution
- Highly efficient secondary atomization
- Improved mass transfer
- Balanced rotation of sprays on all spray levels

In addition to the TwinAbsorb® series Lechler offers a wide range of traditional nozzles for flue gas desulphurization, in different designs and materials, tailor-made for your application.


Nozzles made of SiC


Nozzles made of SiSiC


Helix nozzles made of SiSiC/ ReSiC


Helix nozzles made of Stellite

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