

ENGINEERING  
YOUR SPRAY SOLUTION

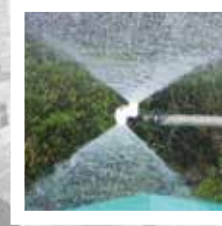


# TwinAbsorb<sup>®</sup>

PATENTED

Advanced Technology for efficient  
Flue Gas Desulfurization

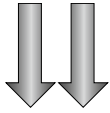
- Increased desulfurization
- Increased efficiency
- Decreased operating costs
- Decreased maintenance



TwinAbsorb<sup>®</sup>



## TwinAbsorb®-EV Equilateral Double Full Cone Nozzle



The proven equilateral double full cone nozzle TwinAbsorb®-EV generates two full cones by using one single supply.

### Advantages

- Provides smaller Sauter diameter (SMD  $d_{32}$ ) caused by dual cones.
- Particularly advantageous not only for high flow rates per nozzle.
- Improved mass transfer caused by increased specific surface area.
- Supports an even gas distribution over the scrubber cross-section.
- Rotation impact onto the gas flow is compensated within the nozzle.
- Better coverage of scrubber wall section.
- Reduced slurry loss at the scrubber wall in comparison to hollow cone nozzles.
- Reduced stress at scrubber wall in comparison to hollow cone nozzles.
- Reduced torque onto the pipe branches.
- Keeps the advantages of Lechler tangential flow full cone nozzles
  - completely self draining
  - large free passages
  - non-clogging designed



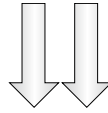
High efficient use of atomised slurry



Successful installed



## TwinAbsorb®-EH Equilateral Double Hollow Cone Nozzle



The proven equilateral double hollow cone nozzle TwinAbsorb®-EH generates two hollow cones by using one single supply.

### Advantages

- Provides smaller Sauter diameter (SMD  $d_{32}$ ) caused by dual cones.
- Particularly advantageous not only for high flow rates per nozzle.
- Extra overlapping area for highly intensive secondary atomization.
- High efficient generation of new stimulated reaction surface without additional energy input.
- Increased turbulence within the drop achieves reactivity of reaction surface.
- Improved mass transfer caused by increased specific surface area.
- Rotation impact onto the gas flow is compensated within the nozzle.
- Better coverage of scrubber cross-section.
- Reduced torque onto the pipe branches.
- Keeps the advantages of Lechler tangential flow hollow cone nozzles
  - completely self draining
  - large free passages
  - non-clogging designed



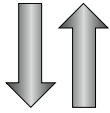
Increased secondary atomization



Extra overlapping area



## TwinAbsorb®-V Double Full Cone Nozzle



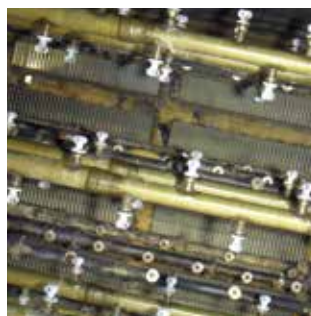
The proven double full cone nozzle TwinAbsorb®-V generates two counter rotating full cones by using one single supply.

### Advantages

- Improved mass transfer caused by higher relative velocity of liquid to flue gas.
- Rotation impact onto the gas flow is compensated within the nozzle.
- Increased turbulence within the drop for highly active reaction surface.
- Increased residual time of drops during the process.
- Duplication of hydraulic spray level in comparison to single spray nozzles.
- Reduced pressure loss in case of counter current gas flow.
- Reduced slurry loss at the scrubber wall in comparison to hollow cone nozzles.
- Better coverage of scrubber wall section.
- Provides smaller Sauter diameter (SMD  $d_{32}$ ) caused by dual cones.
- Reduced stress at scrubber wall in comparison to hollow cone nozzles.
- Reduced torque onto the pipe branches.
- Keeps the advantages of Lechler tangential flow full cone nozzles
  - completely self draining
  - large free passages
  - non-clogging designed



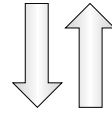
Spray pattern with two counter rotating full cones



The nozzle follows the technical demands



## TwinAbsorb®-H Double Hollow Cone Nozzle



The proven double hollow cone nozzle TwinAbsorb®-H generates two counter rotating hollow cones by using one single supply.

### Advantages

- Improved mass transfer caused by higher relative velocity of liquid to flue gas.
- Rotation impact onto the gas flow is compensated within the nozzle.
- Intensive secondary atomization results in an increased surface for faster mass transfer.
- Increased turbulence within the drop for highly active reaction surface.
- Increased residual time of drops during the process.
- Supports an even gas distribution over the scrubber cross-section.
- Duplication of hydraulic spray levels in comparison to single spray nozzles.
- Reduced pressure loss in case of counter current gas flow.
- Provides smaller Sauter diameter (SMD  $d_{32}$ ) caused by dual cones.
- Reduced torque onto the pipe branches.
- Keeps the advantages of Lechler tangential flow hollow cone nozzles
  - completely self draining
  - large free passages
  - non-clogging designed



Spray pattern with two counter rotating hollow cones

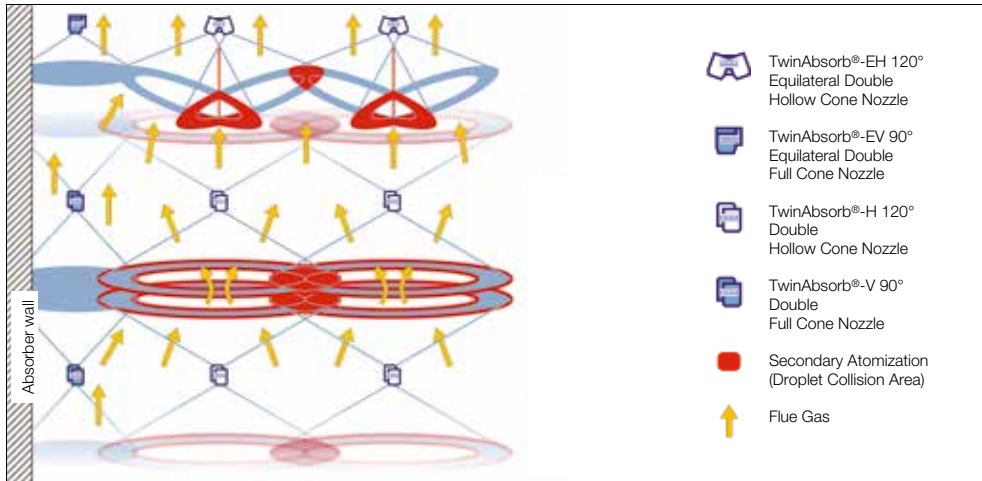


Successful installation






## Customized configuration following the process demands




- Support of better gas distribution
- High efficient secondary atomization
- Improved mass transfer
- Compensation of rotation impact

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



### Twin4Absorb

Twin4Absorb nozzles are a further development of the Twin-Absorb® nozzle series. Four overlapping spray cones generate additional jet collisions and thus a more active reaction surface. Thanks to the enhance spatial distribution, the Twin4Absorb nozzles are ideal for optimizing existing scrubbers.



### Talk to us

Are you not sure which configuration best meets your requirements? We will gladly advise you. Just give us a call.



**Nozzles made of SIC**



**Nozzles made of SISIC**



**Helix nozzles made of SISIC/ReSIC**



**Helix nozzles made of Stellite**

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