

Wet scrubber

We make air work for you



Wet scrubbers

– the specialists for difficult materials

Various types of wet scrubbers are used for a variety of applications. Especially for materials which are impossible or very difficult to separate out using a conventional fabric filter. This includes explosive materials, materials which present a fire risk, dust containing flying sparks or sticky dust, greasy vapours, smoke or fumes.

For these rather difficult materials, Venti wet scrubbers are a prime choice.

The condition for wet scrubbing to work is that the liquid used must be able to wet the dust concerned. If this is ensured, then the small dust particles combine with the droplets of liquid due to inertial impaction and can be separated.

Venti Oelde will check whether a wet scrubber or another separating system is best for your company during an exact analysis of the process concerned. This helps to choose the correct type of wet scrubber, the required separation capacity and the type of sludge removal.



Grinding



Polishing



Deburring

Cutting



Cooling



Coating



Milling



Shredding

Rolling



The wet scrubbing principle

– great washing capacity within a small space



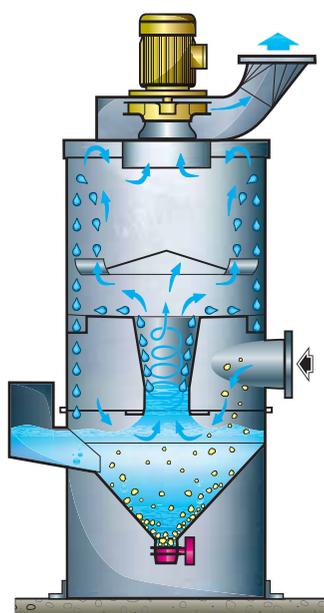
Venti Oelde wet scrubbers offer you decisive benefits:

- Compact, space-saving design
- Economic operation due to low pressure loss and carefully adjusted control of water level
- Low investment costs
- Maintenance and cleaning are easy thanks to large service doors and a rotating droplet eliminator.

The Venti wet scrubber has a cylindrical housing with an integrated water trap and a sludge removal system. The fan is positioned horizontally on the upper part of the wet scrubber, enabling an extremely compact design.

The modular all-in-one design does not require much space and installing and setting up are easy, just 'plug and play'.





The process is well-proven and, with suitable fine adjustment, will always produce the best results. First the flow of dusty, untreated gas is fed tangentially into the wet scrubber's housing. The centrifugal forces immediately separate the coarser dust particles which are wetted by the water, where they then form a sediment. The gas flow with the finer particles is then fed to the venturi scrubbing zone inside the unit. The fine particles here have to pass through a water fountain or vortex produced by low pressure which leads to them being very intensively washed out of the gas. This dust also forms a sediment in the water.

The gas flow then goes through the droplet eliminator section (expansion chamber with lamellar vanes). At this point, tiny water drops carrying dust are separated out of the gas flow. They flow, together with the dust they contain, down the walls of the housing to the main body of water. After the expansion chamber, a flow straightener ensures that the flow of air through the fan is always optimised.

Only the small amount of water which is lost through evaporation and sludge removal is replaced.

Venti wet scrubbers are supplied made of coated materials. For higher corrosion protection requirements, hot-dipped galvanised and stainless-steel versions are also available.

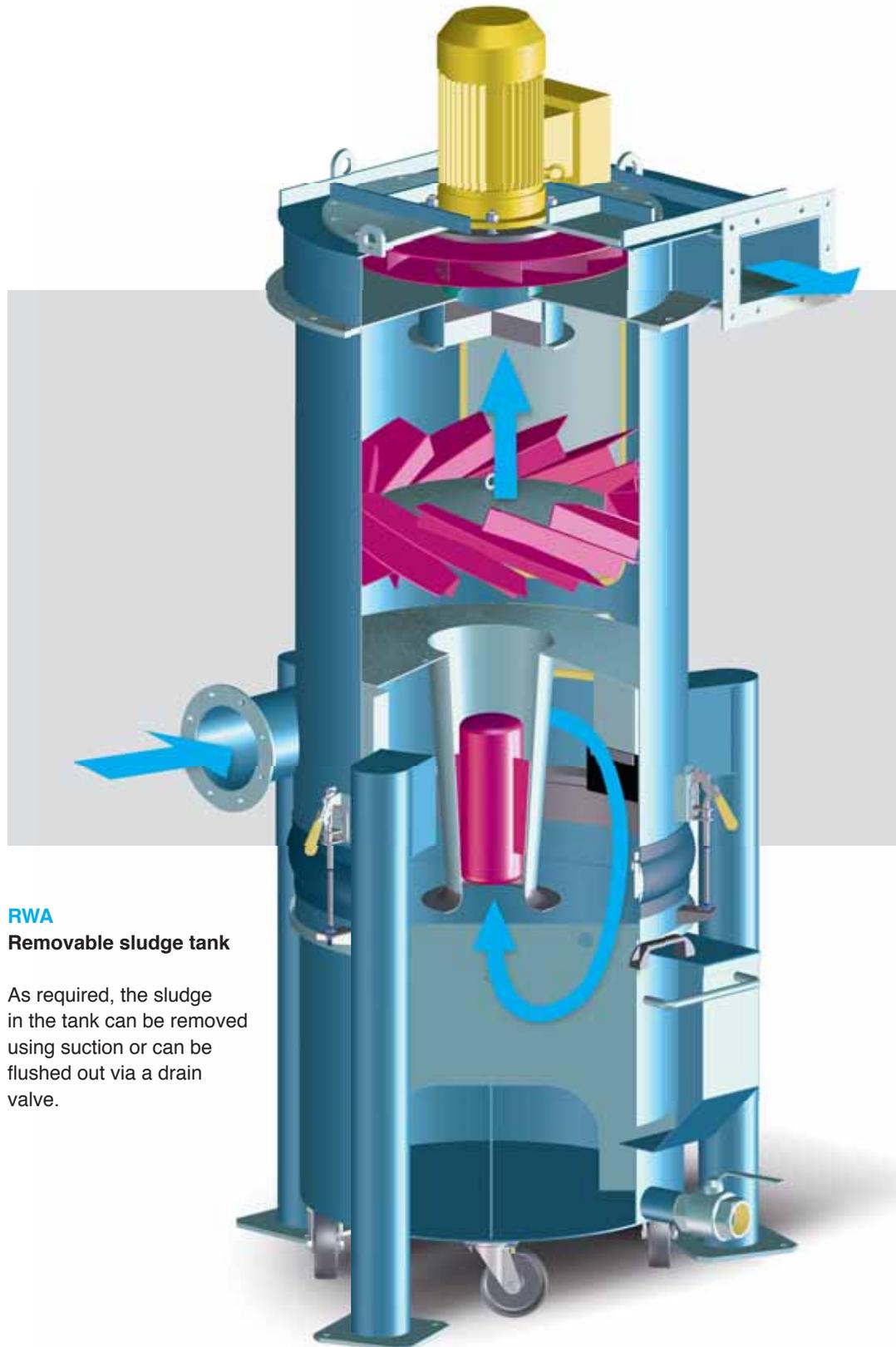
To guarantee troublefree operation, regular inspection and maintenance of the wet scrubbers is vital. The risk of unexpected loss of production can be significantly reduced with a maintenance contract with Venti Oelde.



Types of unit and installation options – suitable for every need

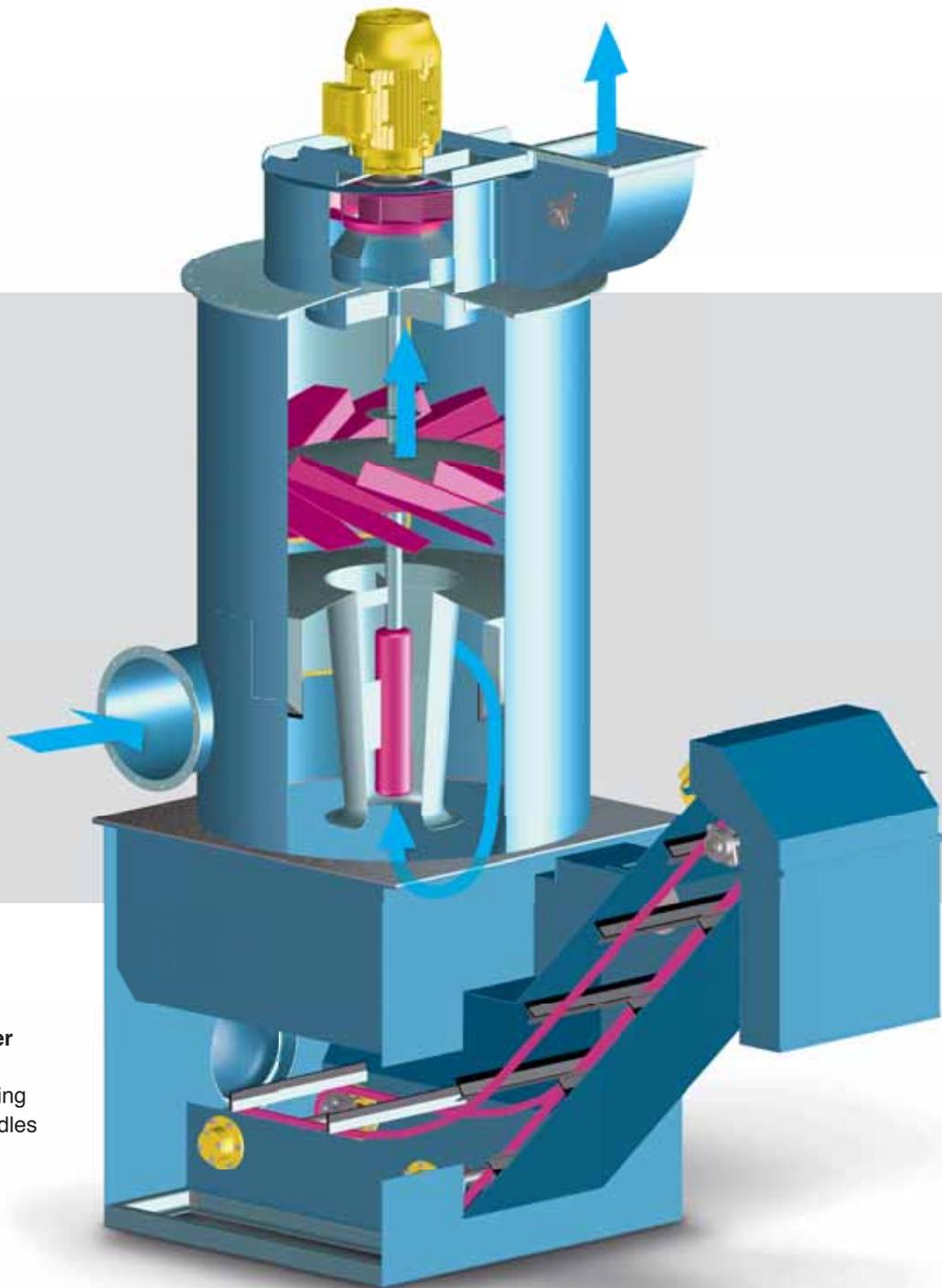
Wet scrubbers from Venti Oelde are the solution to removing numerous difficult types of dust. However, the resulting sludge must then be removed at regular intervals, or even continuously, so as to guarantee the flawless functioning of the wet scrubber. The amount of sediment or sludge to be removed varies depending on the flow rate and on the amount of dust it contains.

Venti Oelde, therefore, offers different ejector options to handle the sludge, depending on the volume of sludge produced and on the local situation.



RWA **Removable sludge tank**

As required, the sludge in the tank can be removed using suction or can be flushed out via a drain valve.



RSA
**Sludge settling pool
with a sludge dredger**

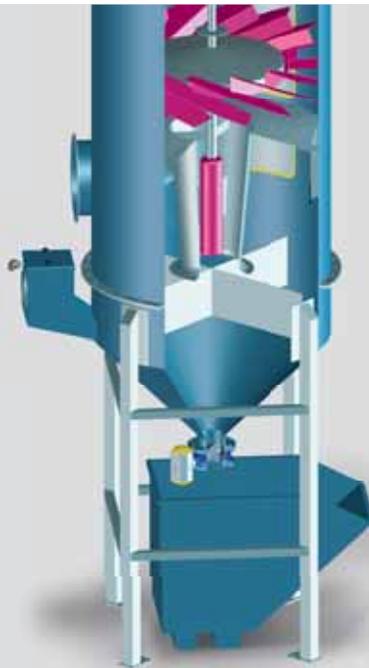
Sludge is removed using
scraper conveyor paddles
mounted on a chain.



RTA-B

Sludge hopper with shut-off valve and big bag

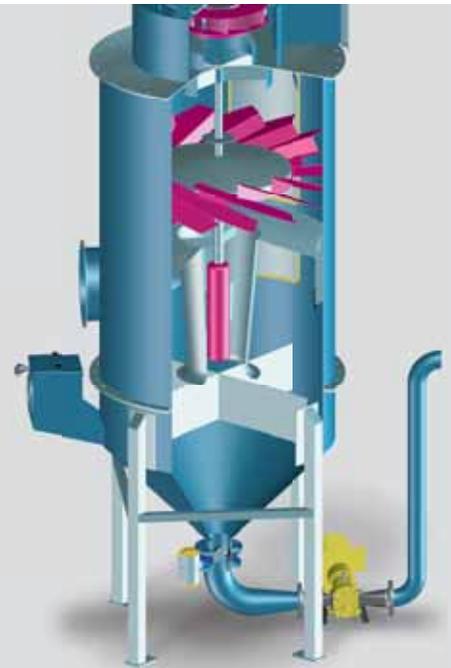
Sludge is ejected into a big-bag. The excess water from the big bag is collected in a tank and is then returned to the scrubber via a connecting line. When its maximum fill level is reached, the full big bag is removed and replaced by an empty one.



RTA-C

Sludge hopper with shut-off valve and sludge discharge into a dewatering container

The dewatering container is equipped with a screen. An immersion pump is used in the clear water area to return the water to the scrubber to be used again in the process. Once the level in the container reaches its maximum, the sludge can be removed via a simple tilt mechanism.



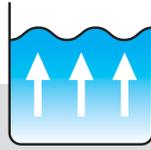
RTA-P

Sludge hopper with a shut-off valve and pump

The sludge is removed non-continuously using a pump. The mixture of sludge and water is fed to an on-site water treatment plant.

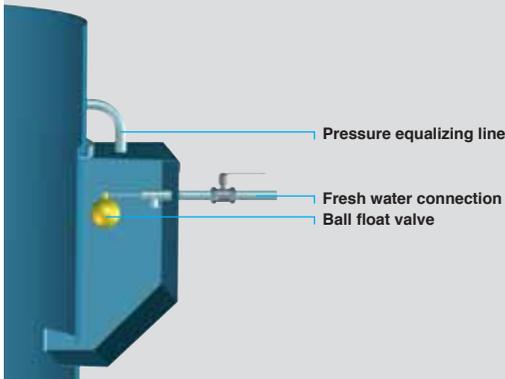
Optional extras

– you can set your own standards

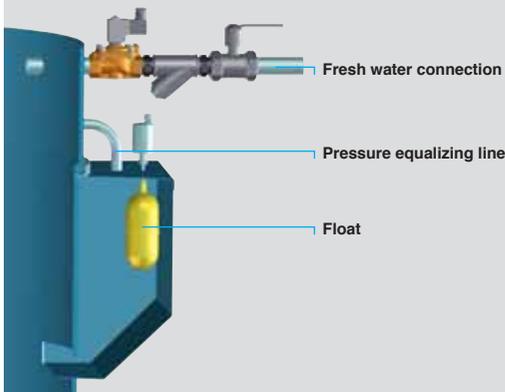


Water level control

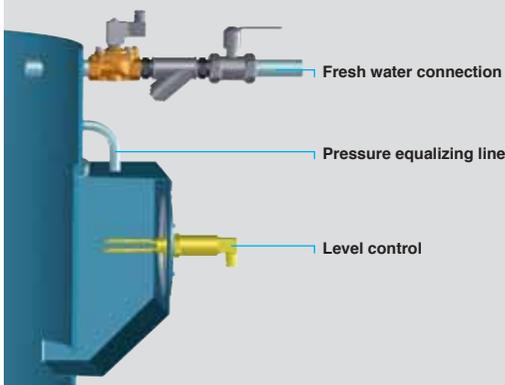
Mechanical water level control



RWA electrical water level control



RTA/RSA electrical water level control
with a level limit switch



Equipment for explosive dust



Our wet scrubbers are fitted with the following special equipment to exhaust and collect explosive dust:

- Ventilation openings prevent the accumulation of dangerous hydrogen/air mixtures
- In case of a persistent water shortage, the upstream machine tool will be automatically switched off via an electrical water level monitor
- The air speed is monitored in the pipes carrying dust
- The components are made in accordance with the ATEX guidelines for the classification of the zone concerned

In Germany, the rules in BGR 109 are taken into account for aluminium and aluminium alloy dust.



Frost protection



If a wet scrubber is used out of doors, it must be protected from frost to ensure that it works properly. To this end, Venti Oelde offers suitable thermal insulation and additional heaters.

Electrical parts

The measuring and control equipment required for the operation of the wet scrubbers will be selected to meet the requirements and the customer's wishes. Our wet scrubbers are connected up via terminal boxes as standard.



Recovery of heat

The use of efficient heat recovery technology in wet scrubbers is made significantly more difficult due to the high levels of residual moisture in the exhaust air. Venti Oelde offers an efficient heat recovery from the exhaust air from wet scrubbers due to special design modifications on the inlet of the rotating heat exchanger as well as the use of cleaning mechanisms for the heat exchanger wheel.

The clean air is fed through the Rotovent rotating heat exchanger wheel and is then passed via the air discharge pipe to the outside. The air supply system fitted in front of the rotating heat exchanger feeds fresh air over the thermal wheel's rotary storage unit. The temperature difference results in a transfer of heat into the airflow.



My enquiry to Venti Oelde

Company name _____
Street _____
Post code / Town / Country _____
Contact person _____
Phone / Email _____

General data

Installation location _____

Height above sea level _____ m Air pressure _____ Pa

Ambient temperature max. _____ °C min. _____ °C

Operating voltage _____ V Frequency _____ Hz

Design data

Application _____

Flow rate _____ Bm³/h

Operating temperature _____ °C max. temperature _____ °C

Negative pressure _____ Pa at inlet spigot of wet scrubber

Type of dust _____ Amount of dust _____ g/m³ Particle size _____ μm

Noise level requirements Sound pressure level _____ Lp (A) dB (A) at a distance of 1 m or

Sound power level _____ Lw (A) dB (A)

Zoning of hazardous areas where equipment is to be installed _____ No zone classification _____ 0 _____ 1 _____ 2
_____ 20 _____ 21 _____ 22

Other _____

Type

- RSA (sludge settling pool with dredger)
- RTA (sludge hopper with shut-off valve)
- RTA-B (sludge hopper with shut-off valve and big bag)
- RTA-C (sludge hopper with shut-off valve and dewatering container)
- RTA-P (sludge hopper with shut-off valve and pump)
- RTA-S (sludge hopper with dredger)
- RWA (removable sludge tank)

Other _____

Scope of delivery

- Inlet duct
- Collection units
- Air discharge duct
- Noise insulation
- Switchgear assembly

Other _____

Additional information

By fax, smartphone or computer



Please fill out the form completely,
cut along the perforated line
and send it to:

+49 (0)2522 755 34.

We will send you an answer without delay.



Scan the QR code* with your
smartphone or tablet and you
will be directed straight to our
online form.

*QR code app required.



To enter on a computer, you will find
the online form at:

www.venti-oelde.com/WS_Questionnaire

- Industrial fans
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- Ventilating, heating and air conditioning plants
- Recycling and waste processing plants
- Surface technology



Ventilatorenfabrik Oelde GmbH
P.O. Box 37 09
59286 Oelde, Germany
Phone: +49 (0)2522 750
Fax: +49 (0)2522 752 50
info@venti-oelde.de
www.venti-oelde.com