

A large industrial waterjet cutting machine is shown in a dark blue, semi-transparent view. The machine's internal components, including various pipes, valves, and a control panel, are visible. The control panel features a screen displaying technical diagrams and the 'ANT' logo. The background is a solid dark blue color.

THE MOST EFFICIENT WAY OF WATERJET CUTTING

ConSus

Continuous Suspension

ConSus

ConSus - a cut ahead

The subsidiary ConSus

ConSus-ANT Stationary Cutting Solutions GmbH is a subsidiary of ANT Applied New Technologies AG.

Based on more than 20 years of experience of ANT AG as technology leader with the Water Abrasive Suspensions (WAS) cutting process in mobile applications, we have now further developed this technology for stationary applications in the machining industry and industrial manufacturing: ConSus.



Waterjet cutting with ConSus

ConSus is an innovative and worldwide patented abrasive mixing unit which enables permanent water jet cutting in the Water Abrasive Suspension (WAS) process.

ConSus is technologically and economically superior to the conventional water abrasive injection (WAIS) process, especially for thick materials and high-strength materials.

The most efficient solution for your challenges

ConSus provides the decisive upgrade for your manufacturing processes and productivity, where other separation technologies reach their limits.

ConSus ensures precise, reliable and economical cutting for both standard applications and the most demanding tasks.

- High-strength material
- Brittle material
- Thick material up to 500 mm
- Composite materials such as CFRP, without delamination
- Sandwich and hollow structures

ConSus Advantages

- Up to 3 times faster
- Up to 70% energy savings
- Up to 50% CO₂ savings
- Up to 50% cost savings
- Only 1.500 bar
- Reduced Abrasive consumption*
*80% recycling rate

ConSus Efficiency and Sustainability

Higher performance, lower emissions and lower cost

High performance, quality and cost-effectiveness combined with optimal user protection and minimal environmental impact - with ConSus, this is not a contradiction.

A study by the Fraunhofer IPT compares the emissions, costs and performance of „ConSus 1500“ with the injection process and shows the decisive advantages of the Water Abrasive Suspension (WAS) process with ConSus:

- Reduced noise and particle emissions during waterjet cutting thanks to the two-phase suspension jet of water and abrasive without air.
- WAS systems show a considerably higher cutting performance (stock removal rate).
- Very low fragmentation of abrasive ensures more economical cutting and a recycling rate of more than 80%.
- ConSus uses both dry and wet abrasive.

[Download Whitepaper](#)

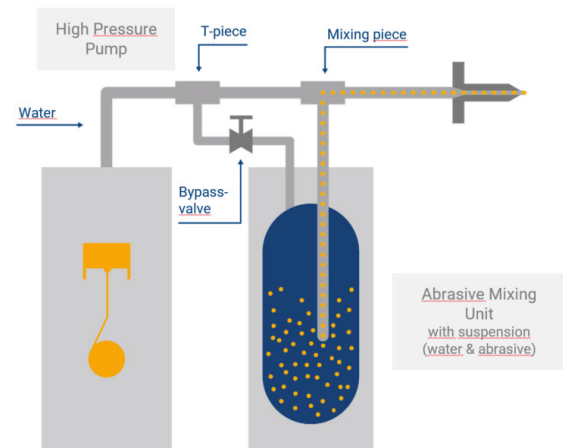


ConSus Technology & Mode of Operation

Wasser Abrasive Suspension (WAS)

In the Water Abrasive Suspension (WAS) cutting process part of the pressurised water flows via a bypass valve into a high-pressure vessel where water and abrasive form a suspension. This is then directed to the nozzle where it is accelerated. The result is a two-phase cutting jet consisting of approximately 97.5 percent by volume of water and 2.5 percent by volume of abrasive.

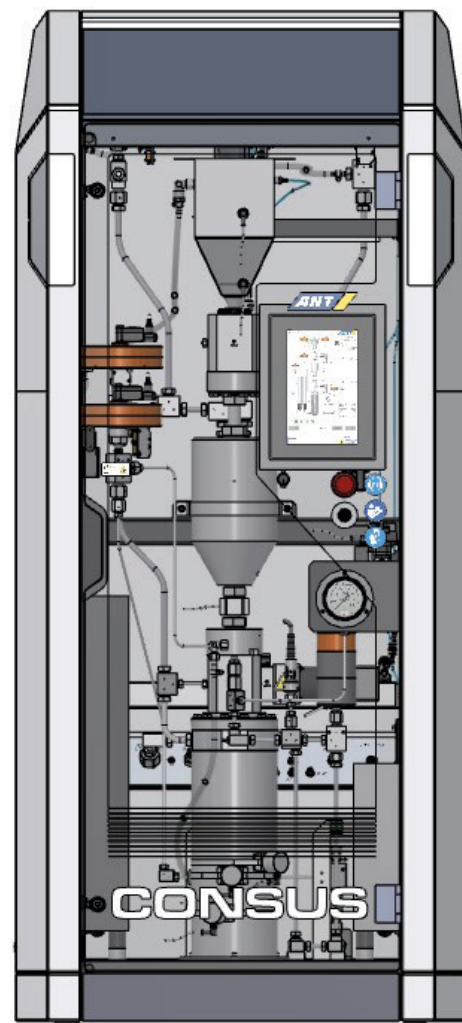
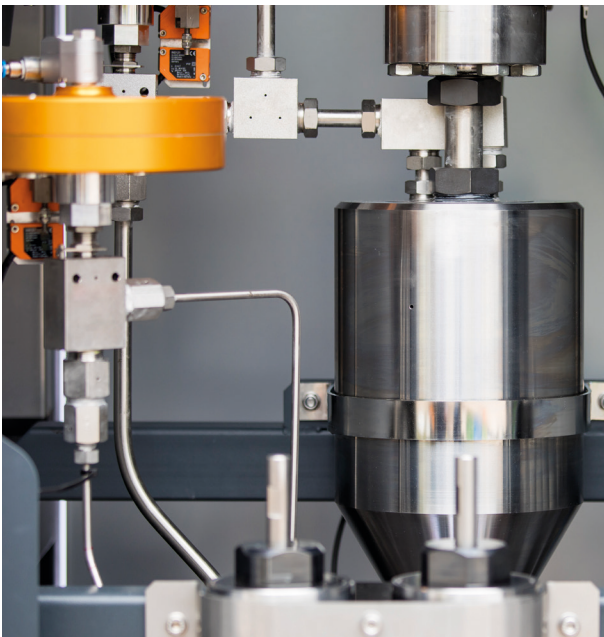
The decisive advantage over the injection jet: The suspension jet is significantly more stable, precise and powerful due to the centered abrasive particles.



Continuous Suspension (ConSus)

A worldwide patented lock system enables a continuous supply of the abrasive into the high-pressure vessel, thus ensuring an uninterrupted cutting process.

The abrasive is filled from a hopper via a ball valve into an intermediate pressure vessel. From there it passes under pressure through another ball valve into the high-pressure vessel. Subsequently, the suspension is fed to the main water jet via the bypass valve.



ConSus Operation & System Integration

Compact and user-friendly

ConSus convinces with optimised design:

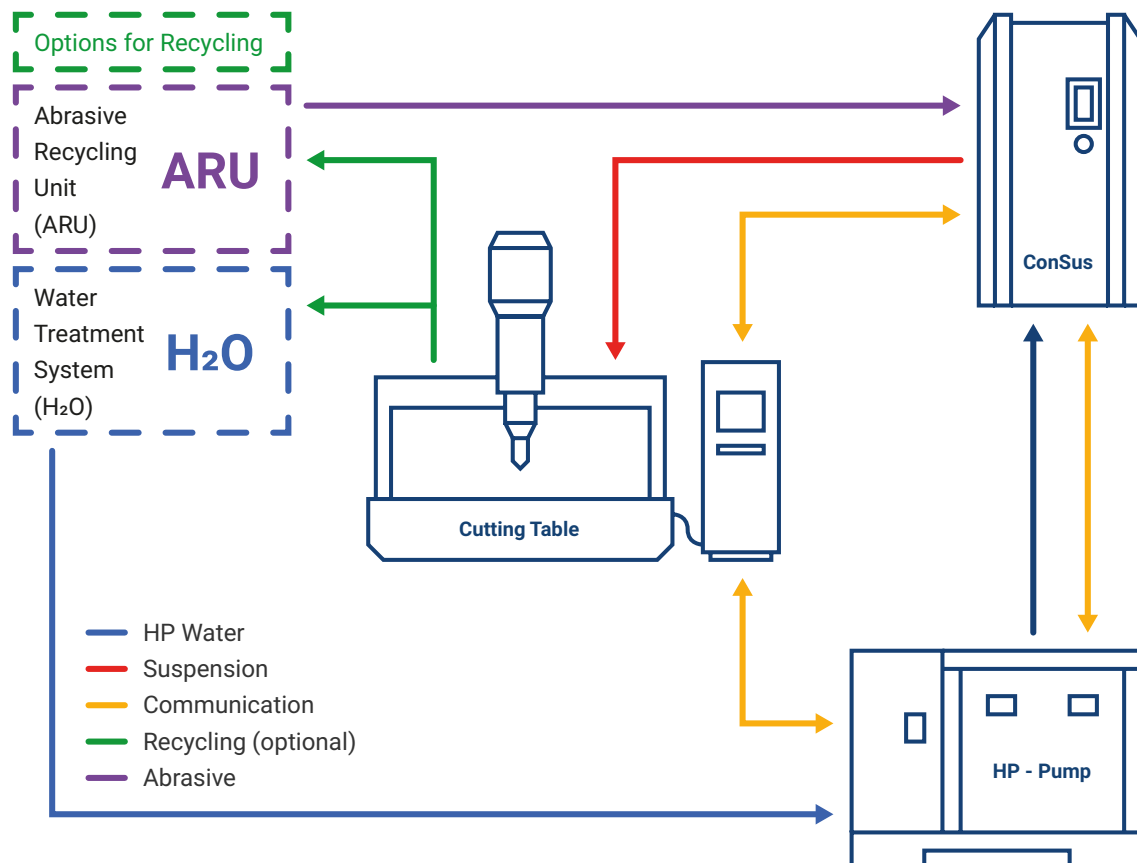
- Compact and space-saving
- Simple control via an integrated control panel
- The „Smart-Client“ enables monitoring and control also via PC and smartphone
- Alternative: Control of ConSus directly via your cutting system
- Emergency stop and signal lights for the interlock status clearly visible



Your individual configuration

A water abrasive suspension (WAS) cutting system consists of ConSus, a cutting device (e.g. cutting table) and a pump. Optionally, an abrasive recycling unit (ARU) and/or a water treatment system can be integrated.

Depending on your requirements, ConSus is integrated as an upgrade into an existing waterjet cutting system or offered as new, complete WAS cutting system.



Abrasive Recycling Unit ARU

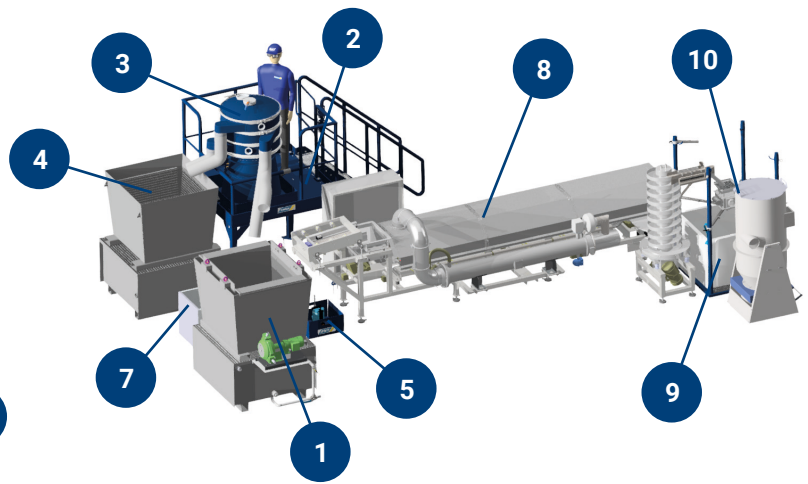
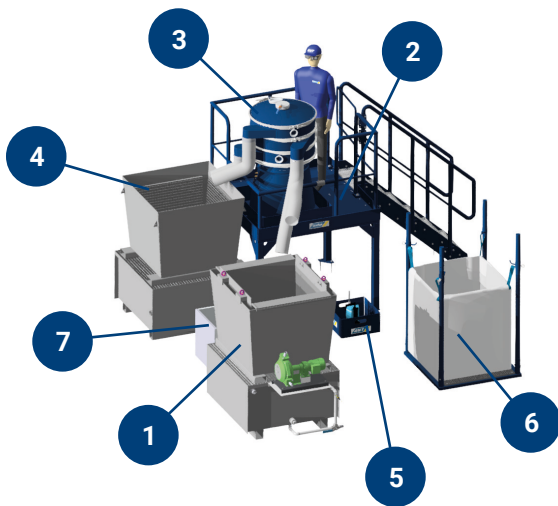
Sustainable, efficient abrasive cycle

ARU

The greatest possible efficiency and sustainability is achieved by combining ConSus with the abrasive recycling unit ARU. The **recycling of more than 80% of the abrasive** used with ConSus significantly reduces the costs of consumption, storage and disposal of abrasives. In a ConSus cutting system, the moist recycled abrasive can be fed **directly and without drying** back into the cutting process.

ARU with drying unit

Likewise, the abrasive previously used in a WAIS system is recyclable with the abrasive recycling unit ARU. However, due to the massive abrasive grain size reduction in the acceleration process within the mixing chamber of the injection, usually less than 50% can be recycled. If the recycled abrasive is to be reused in a WAIS system, the ARU can optionally be expanded with a drying unit.



ARU	
Installation space ARU ca. 4 m x 3 m x 4 m (L x B x H)	
1	Wet hopper for feeding used abrasive into the processing unit
2	Working platform
3	Wet screening machine
4	Big bag for oversized and undersized grain
5	Water overflow with recirculation
6	Big bag for recycled abrasive
7	Settling tank

ARU with drying unit	
Installation space ARU + drying unit ca. 8 m x 5 m x 4 m (L x B x H)	
1	Wet hopper for feeding used abrasive into the processing unit
2	Working platform
3	Wet screening machine
4	Big bag for oversized and undersized grain
5	Water overflow with recirculation
7	Settling tank
8	Drying unit
9	Big bag for dried, recycled abrasive
10	Cyclone filter/cascade separator

Garnet - a finite raw material

Why recycle abrasive?

The abrasives used today are a finite resource. The most commonly used is garnet sand, which is imported from Australia, India, China and South Africa at great logistical expense. The abrasive grains vary in shape from round to sharp-edged as well as in size. In industrial manufacturing, the grain size Mesh 80 is usually convincing.

Sustainability as well as efficiency with regard to consumption, storage and disposal costs are important competitive factors, therefore recycling of the abrasive is recommendable.

ARU Advantages

- ✓ Sustainable and efficient
- ✓ Low energy consumption
- ✓ Reduced cost of consumption, storage and disposal
- ✓ Autonomous process
- ✓ Eligible (BAFA)
- ✓ At least 100 kg/h recycled abrasive
- ✓ 80 % recycling rate possible*
*abrasive used by ConSus
- ✓ Dry and free-flowing recycled abrasive**
**used with drying unit

✓ **Video: ARU**
Introducing the ARU



ConSus Quality & Service

Our solution for your challenges

Intensive and individual customer care is a matter of course for us. Our experienced team provides you comprehensive advice and an individual solution to suit the specific requirements of your business. We are ready to meet your challenges and happy to offer you individual sample cuts.

Request sample cut
sales@consus-gmbh.com

High quality and reliability of all ConSus products and solutions as well as the professional competence of our service team ensure highest efficiency of your production.



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A CUT AHEAD

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