

# THE INNOVATIVE SOLUTION TO MEET YOUR CHALLENGES

ULTRA-ROTOR pulverising and grind-drying technology

ZÄCKERING

ALTENBURGER MASCHINEN

# OUR IDEA SETS THE WORLD IN MOTION.

## Technology and functionality of our products.

We have been manufacturing our highly specialised ULTRA-ROTOR air turbulence mill since 1955. We have continued to develop the technology ever since. The principle it works on is as follows: inside the machine, a **high-performance rotor** rotates at high speed. At the same time, a **downstream fan** ensures a **high through-put of air**. This, in connection with the special design of the inner milling chambers, creates **extreme air turbulence**. This turbulence is the basis for the milling process in the ULTRA-ROTOR.

### Efficient and gentle pulverising

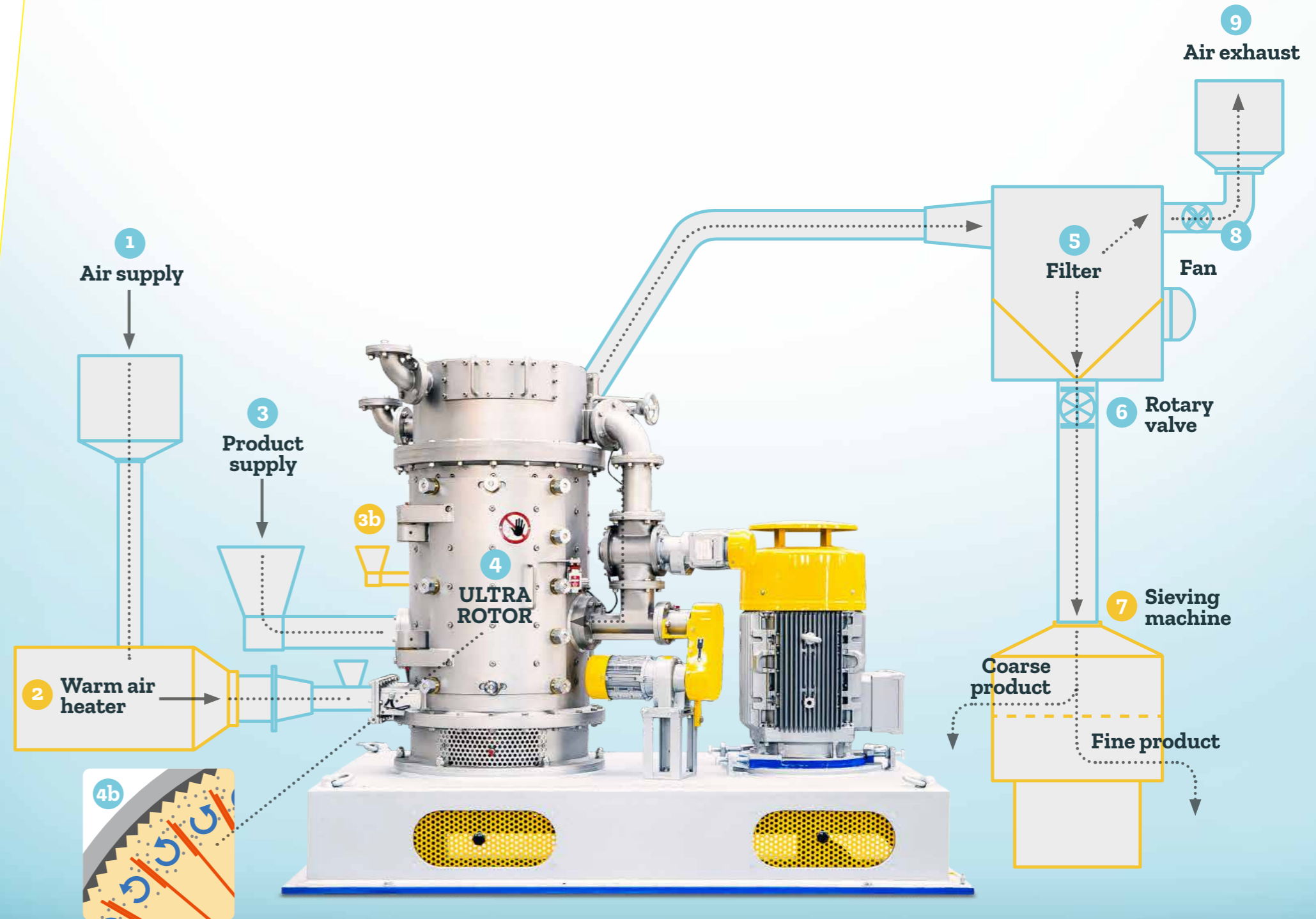
During the milling process, the turbulent air directs the **particles** in such a way that they **collide with each other again and again**. This **impact effect** causes them to break at their natural breaking points. Mostly, it is the mass of the particles themselves that provides the necessary breaking force. Compared to other pulverising systems, our ULTRA-ROTOR mills the product in a particularly gentle fashion. The milling heat that is generated is discharged very effectively via the large volumes of air used in the milling process.

### Milling and drying in one work step

A special function of our ULTRA-ROTOR technology is the **simultaneous grinding and drying process**. This makes it possible to mill and dry a damp product in only one work step during the milling process. This is achieved by passing the process air through an upstream heating unit before the air enters the ULTRA-ROTOR. **The thermal impairment of the processed product is minimal for two reasons:** firstly, the product is only in the machine for a few fractions of a second and, secondly, evaporative cooling takes place as the water evaporates. This means that our dryer-pulveriser system is also suitable for processing temperature-sensitive products.

### Versatile, efficient and successful worldwide

Our ULTRA-ROTOR air turbulence mills have been used for decades all over the world. Their particular user-friendliness and flexibility make them so popular. Additional options include simultaneous **coating**, an **integrated sifter** as well as **inert or cryogenic processing**. Our machines offer an extremely diverse field of application. This is why, in our technical design, we concentrate fully on the **specific wishes and requirements** of our customers and implement **customised process solutions**.



**1** The required air is drawn in from outside. If necessary, it can be cleaned with an air intake filter.

**2** For the drying-pulverising process, the air flow can be heated to a temperature of **up to 450°C**. An electric heating register, a steam heat exchanger, a gas or oil firing system or waste heat from other parts of the system can be used to heat the air.

**3** To obtain the dosage of raw material, suitable dosing devices are used, depending on the character of the products.

**3b** As an option, an additional dosing unit can be used for **coating** the product particles.

**4** **Ultrafine milling and drying-pulverising** take place in the grinding chamber of the ULTRA-ROTOR (Fig. 4b)

**5** In the filter cyclone, the dried and pulverised product is separated from the air stream.

**6** Finally, the product is discharged through the rotary valve.

**7** Optionally, a **sieve unit** can be installed e.g. to separate the milled product according to different particle size or to recycle the coarse material.

**8** The fan generates the process air. The air transports the milled product and also absorbs the evaporated water during the drying-pulverising process.

**9** The process air, which is partly loaded with water, is returned to the atmosphere via the discharge side of the fan. Depending on the process conditions, it is also possible to implement **heat recovery** and **recirculation** of the carrier gas.

Some examples before and after processing.



## WE DO OUR BEST SO OUR MILLS PERFORM THEIR VERY BEST FOR YOU:

**Series of tests on your raw material –  
for optimum results.**

Innovative, powerful, robust: tried and tested for decades in our own affiliated company, our air turbulence mills offer you many advantages. As state-of-the-art and individually adapted to meet the specific requirements, they combine maximum performance with highest efficiency. We perform extensive series of tests in our well equipped trial center using your raw material to determine the specific requirements of your application as precisely as possible and take these into account in a customised design of your system.

### **Test milling or simultaneous grinding and drying in two steps**

To obtain the most meaningful and accurate test results for later use in practice, we set up our test center, with regard to size, output etc., in line with the parameters dictated by your specific raw material. As a rule, our team carries out the tests in two steps:

#### **Step 1:**

In a feasibility study, we check whether your raw material can be processed to your satisfaction in our ULTRA-ROTOR. Depending on the moisture content of the test product, we will need around 25 to 50 kg of your material to implement this stage of the process.

#### **Step 2:**

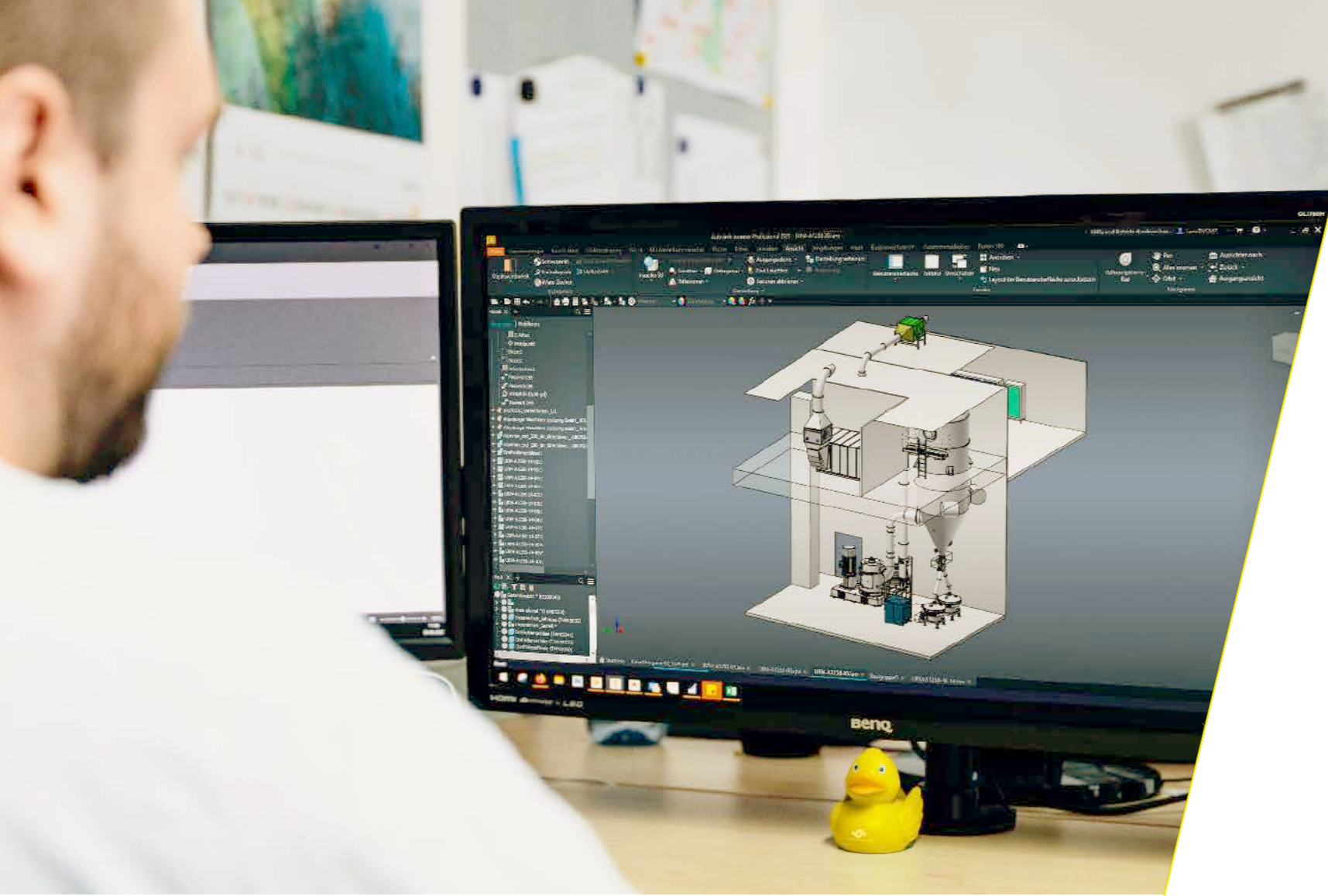
In order to achieve optimal results, we recommend performing a second series of tests. These tests help us evaluate the specific long-term behaviour and further parameters of the process. Here, we will need several hundred kilograms of your material.

After each series of tests, we provide you with an extensive report. If you would like to observe these tests in person, we would be delighted. Then we will be able to discuss the results with you directly.

*Our specialists will be pleased to use their training and experience to help you find a solution to your specific problem.*

*Have we woken your interest?  
Please feel free to contact us today –  
use the QR code to take you  
straight to the enquiry form:*





## WE DEVELOP SOLUTIONS TO GUARANTEE YOUR SUCCESS.

Efficient pulverising and grind-drying technology for specific applications and processes.

Our powerful machines form the basis for manufacturing many products. But each application has different process technology requirements. The pulverising and grind-drying technology that we manufacture in-house using air turbulence technology are based on decades of experience. Tailored to your requirements and well thought through, right down to the last detail, this means that you receive competent support and 3D planning, to installation and commissioning work, to after-sales service. The competence of our experienced and long-serving employees results in highly specialised solutions for your applications, plant and systems. Pioneering and always state-of-the-art, to guarantee your long-term success. This makes us your ideal partner for pulverising and grind-drying systems for the production of various products made from main product and by-product streams.



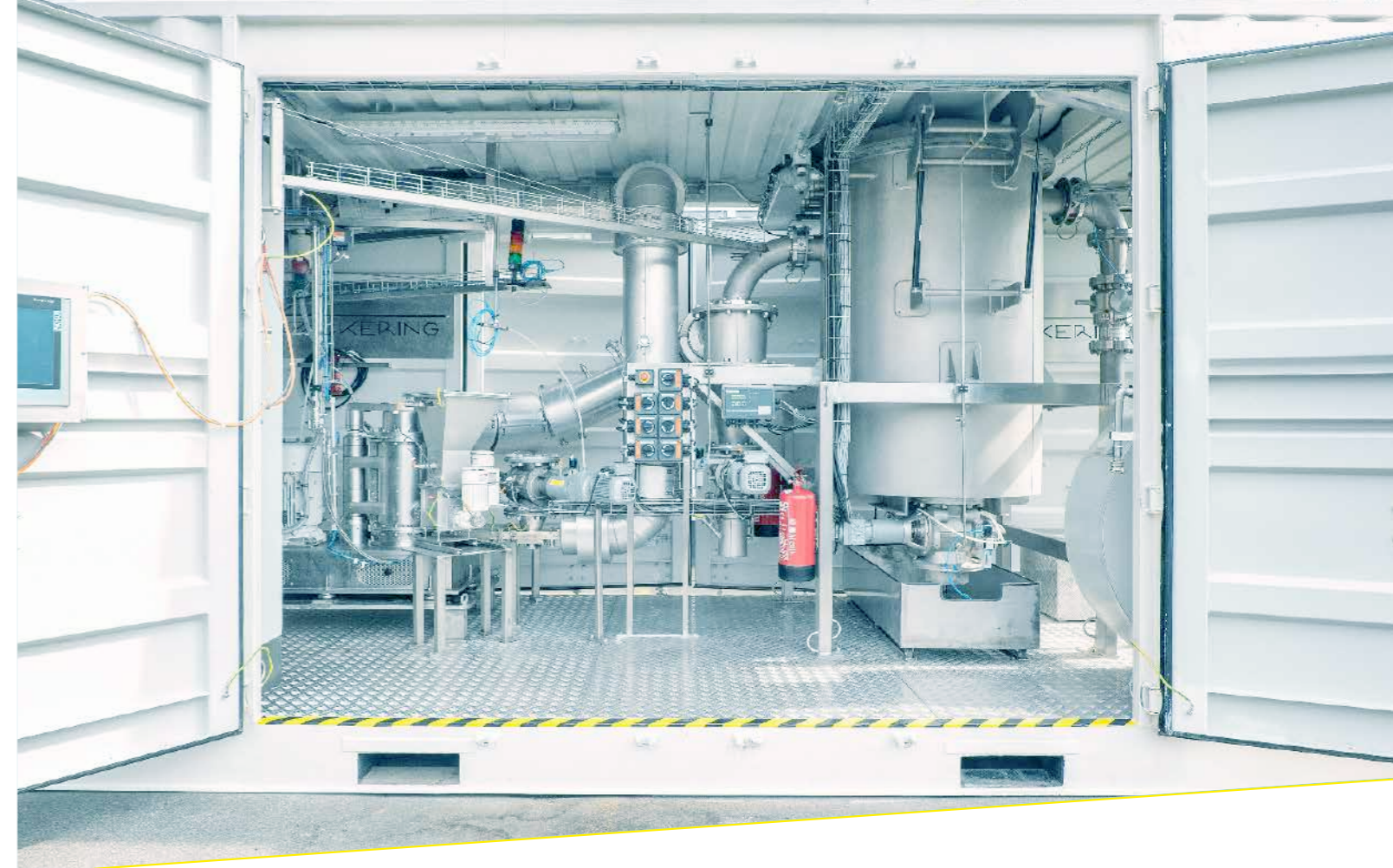
# INDIVIDUALITY IS OUR STRENGTH.

## Tailored products for your applications.

We offer high-precision machines for customised process solutions. This is why we produce our sophisticated ULTRA-ROTOR solutions as tailored, one-off systems. When adapting our products to your specifications, we take empirical test data and the individual requirements of our customers into account in equal measure. The following table shows a selection of the various basic versions and available size increments. Special designs are available on request.

Size	Dimensions	Typical output	Maximum drive size	Typical water evaporation
ULTRA-ROTOR, Model I	1400 x 1000 x 920 mm	100 kg/h	22 kW	20 kg/h
ULTRA-ROTOR, Model II	1590 x 990 x 1480 mm	200 kg/h	45 kW	100 kg/h
ULTRA-ROTOR, Model IIIa	2610 x 1360 x 1740 mm	1,500 kg/h	132 kW	200 kg/h
ULTRA-ROTOR, Model V	3110 x 1610 x 2200 mm	5,000 kg/h	315 kW	750 kg/h
ULTRA-ROTOR, Model VI	3650 x 2150 x 2300 mm	10,000 kg/h	630 kW	1,500 kg/h
ULTRA-ROTOR, Model VII	4200 x 2360 x 3700 mm	20,000 kg/h	1,150 kW	3,500 kg/h

Special models on request.



## TEST OUR PERFORMANCE – ON YOUR PREMISES.

### Mobile ULTRA-ROTOR container system.

If your raw material is not suitable for test milling in our test centre or you are only looking to process small quantities without the risk of a large investment, we can provide you with our compact ULTRA-ROTOR dryer-pulveriser system in a 20' high cube container. This allows you to process fresh raw material, for example, to let you optimally assess the milling and drying behaviour and properties of the end product. The system includes an intake filter, warm air heater, dosing unit, cyclone, filter, sieve and control cabinet. It is made of stainless steel and meets the most stringent hygiene requirements. We will be pleased to provide you with information on rental conditions and availability on request.

# WE ARE THERE FOR YOU TO PROVIDE DIVERSE SUPPORT.

## The companies of the Jäckering Group.

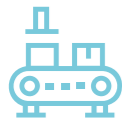
We live in a time of rapidly changing markets. That is why the Jäckering Group provides a wide range of services to meet tomorrow's requirements today. The Jäckering Group encompasses the following largely independent divisions:

### Jäckering Mühlen- & Nahrungsmittelwerke GmbH



Your premium provider of high-quality starches, proteins and animal feed. We ensure the highest level of process reliability by using powerful equipment to reliably and flexibly provide a consistently high quality standard for customers in the processing industry.

### Altenburger Maschinen Jäckering GmbH



Your partner - since 1955 - when it comes to developing individual processes based on air turbulence mill technology. With efficient pulverising and grind-drying technology systems for manufacturing new products from main product and by-product streams.

### Jäckering Grund- und Rohstoffverarbeitung GmbH & Co. KG



Your specialist for processing and preparing thermoplastics - particularly from by-product streams of the PVC industry. Every year, thousands of tonnes of material are processed using the ULTRA-ROTOR technology.

### Jäckering Processing GmbH Toll manufacturing



The reliable industrial partner for product processing in the non-food sector - especially in the chemical and building materials industry. With the unique ULTRA-ROTOR dryer-pulveriser systems, practically all materials can be processed particularly quickly and efficiently.

  
Jäckering Mühlen- & Nahrungsmittelwerke

  
Jäckering Grund- & Rohstoffverarbeitung

  
Altenburger Maschinen Jäckering

THE  
**JÄCKERING**  
GROUP

  
Jäckering Processing



# JÄCKERING

Altenburger Maschinen Jäckering GmbH  
Vorsterhauser Weg 46  
D-59067 Hamm  
Telephone +49 (0) 2381-422-121  
Fax +49 (0) 2381-422-136

Mailing address for test drying-pulverising  
and production site:  
Altenburger Maschinen Jäckering GmbH  
Hafenstraße 21 / Entrance left-hand  
harbour gate  
On the premises of Thyssen  
Department Test Facility  
D-59067 Hamm

[www.jaeckering.com](http://www.jaeckering.com)

[jaeckering@jaeckering.de](mailto:jaeckering@jaeckering.de)

