

Gentle drying. Consistent quality. Future-ready solutions.

PROCESS-RELIABLE AIRGENEX[®]PET DEHUMIDIFICATION
DRYING TECHNOLOGY FOR PET FOOD, ENSURING THE
PRESERVATION OF PRODUCT QUALITY, AROMA AND NUTRIENTS.
ENERGY-EFFICIENT · NO EXHAUST AIR · RELIABLE · SUBSIDIZED



FOR PROCESS STABILITY AND HIGH PRODUCT QUALITY



OUR WAY OF DRYING PET FOOD
IS SPECIAL BECAUSE IT IS:

VERY SAFE.

VERY FAST.

VERY GENTLE.

VERY EFFICIENT.



HARTER DRYING SOLUTIONS – COMPETENCE IN ALL ASPECTS OF DRYING.

- » Gentle drying in a temperature range between 30 °C and 75 °C
- » High energy efficiency through targeted dehumidification technology
- » Significantly reduced energy consumption and CO₂ emissions
- » Uniform and reproducible drying results for consistently high product quality
- » Drying in a closed system (no exchange with ambient air – preventing dust and microbial contamination, independent of climatic conditions, and ensuring consistently high product quality with zero emissions)
- » Clean, hygienic, and emission-free drying – ideal for premium pet food products
- » Customized drying solutions, optimally tailored to products, formulations, and processes

FAST AND RELIABLE DRYING

Drying pet food gently, energy-efficiently and with maximum process reliability – this is precisely what our Airgenex®pet condensation drying technology has been developed for. The process not only optimizes the drying stage itself, but also ensures long-term stability of the entire production process.

Whether conventional dry pet food, pellets, chew products or nutritional supplements: our systems ensure uniform, product-friendly drying and fully reproducible results – even for sensitive formulations. Drying takes place in a closed-loop air system.

This enables optimal preservation of valuable ingredients, vitamins and aromas. Climatic and seasonal influences are eliminated, ensuring consistently stable and reliable processes – for high-quality pet food with uniform structure and appealing appearance.

The closed-loop design operates entirely without exhaust air. As a result, there is no need for biofilters, air scrubbers or downstream exhaust air treatment systems. This significantly reduces both capital and operating costs while simplifying overall system design.

PRODUCT QUALITY AND PROCESS RELIABILITY

- » Short drying times and consistent, reproducible results
- » Gentle drying – even for sensitive products (extrudates, pellets, flakes or coated products)
- » Precisely controlled residual moisture distribution – ideal for premium pet food applications
- » Low drying temperatures to ensure maximum product integrity

Drying systems precisely tailored to specific products and processes:

- » Designed for integration into existing production lines
- » Enabling increased production capacity
- » Delivering significant energy savings

Drying in a closed-loop air system:

- » No exhaust air – resulting in zero emissions, no odors, no moisture discharge and no energy losses
- » Optimal preservation of vitamins, aromas and nutrients
- » No interaction with ambient air
- » Process-reliable drying, independent of climatic conditions



H01 batch dryer with tray trolley

OUR DRYING TECHNOLOGY ADVANTAGES

VERY GENTLE

Airgenex[®]pet typically operates within a low-temperature range of 30-75 °C. This enables maximum preservation of vitamins, aromas and valuable components, while maintaining product integrity. Depending on process requirements, operation outside this temperature range is also possible. Furthermore, dedicated post-drying cooling can be integrated into the system.

VERY RELIABLE

The dehumidification process takes place within a closed-loop air system. This ensures independence from climatic and environmental influences, enabling consistently reproducible results.

Fluctuations in residual moisture and quality losses are avoided, ensuring uniform, process-reliable drying while supporting both increased capacity and enhanced process stability.

VERY EFFICIENT

The heart of our drying systems is a highly efficient heat pump-based dehumidification technology, featuring premium components – some specifically engineered for our applications – and high-grade materials. This is combined with an advanced airflow

management system, ensuring that dehumidified air is precisely guided to the areas where moisture removal is required. Only the optimized interaction of dehumidification and airflow enables our drying technology to deliver maximum performance.



-75%

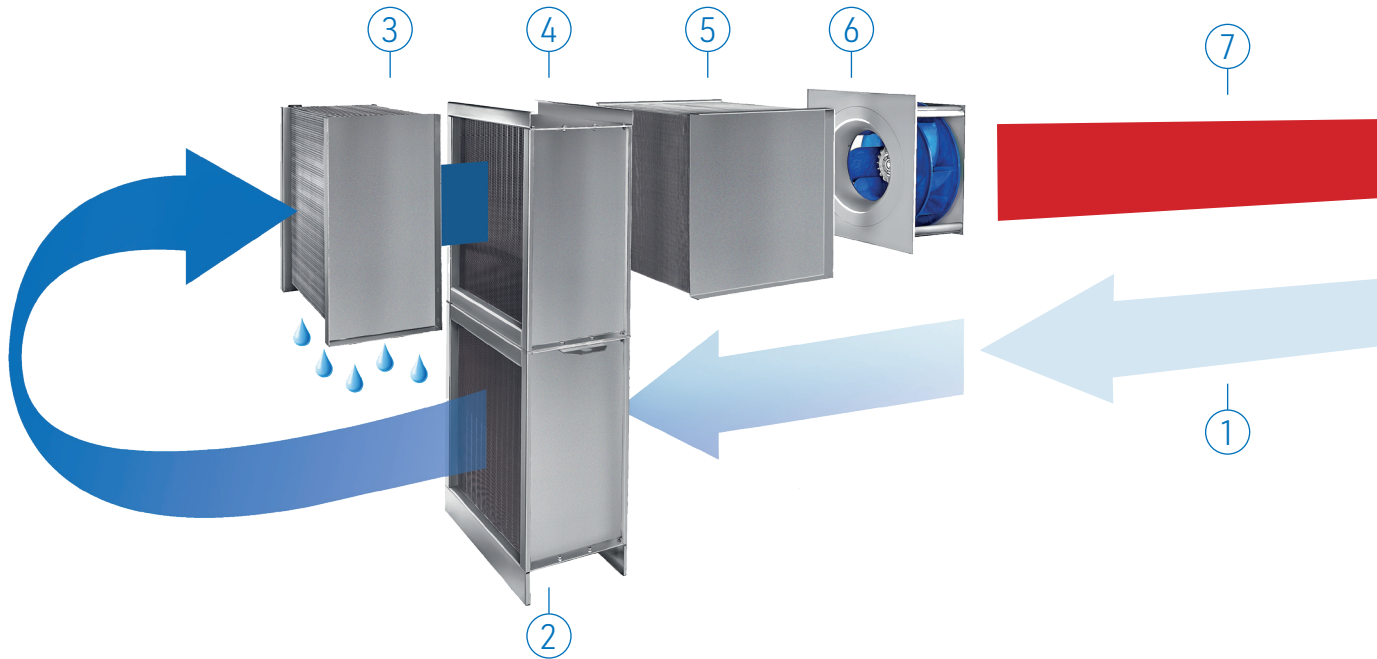
-75%



Energy efficiency has always been a core focus of our work. From the very beginning, this commitment has driven the development and continuous advancement of our drying technology. The growing awareness of energy consumption and finite resources is an important and necessary development – and a key prerequisite for a sustainable future.

Reinhold Specht, Managing Director, Harter GmbH

AIRGENEX[®] – THE PROCESS



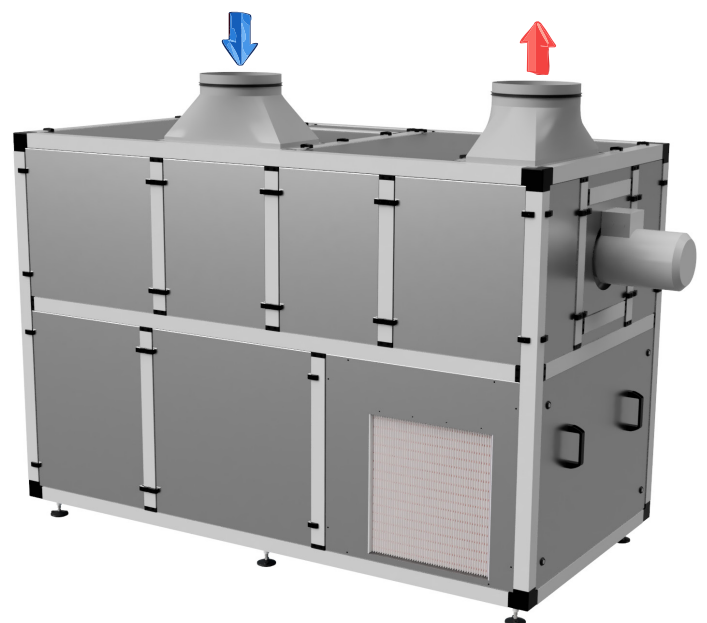
With our energy-efficient drying systems, products of all types are dried quickly and reliably. The use of heat pump and heat pipe technology significantly reduces energy consumption.

- ① Interface Airgenex[®]pet dehumidification module / dryer: humid air is extracted from the drying chamber and directed to the dehumidification system.
- ② The pre-cooler, as part of the heat pipe, pre-cools the air in an initial stage without additional energy input.
- ③ Moisture condenses on the air cooler fins and is removed from the drying system via the condensate tray and drainage outlet.
- ④ The pre-heater, integrated into the heat pipe system, provides passive preheating of the cooled, dehumidified air without external energy input.
- ⑤ The air heater heats the air to the specified process temperature.

- ⑥ The process air fan ensures the required air exchange between the Airgenex[®]pet dehumidification module and the drying chamber.

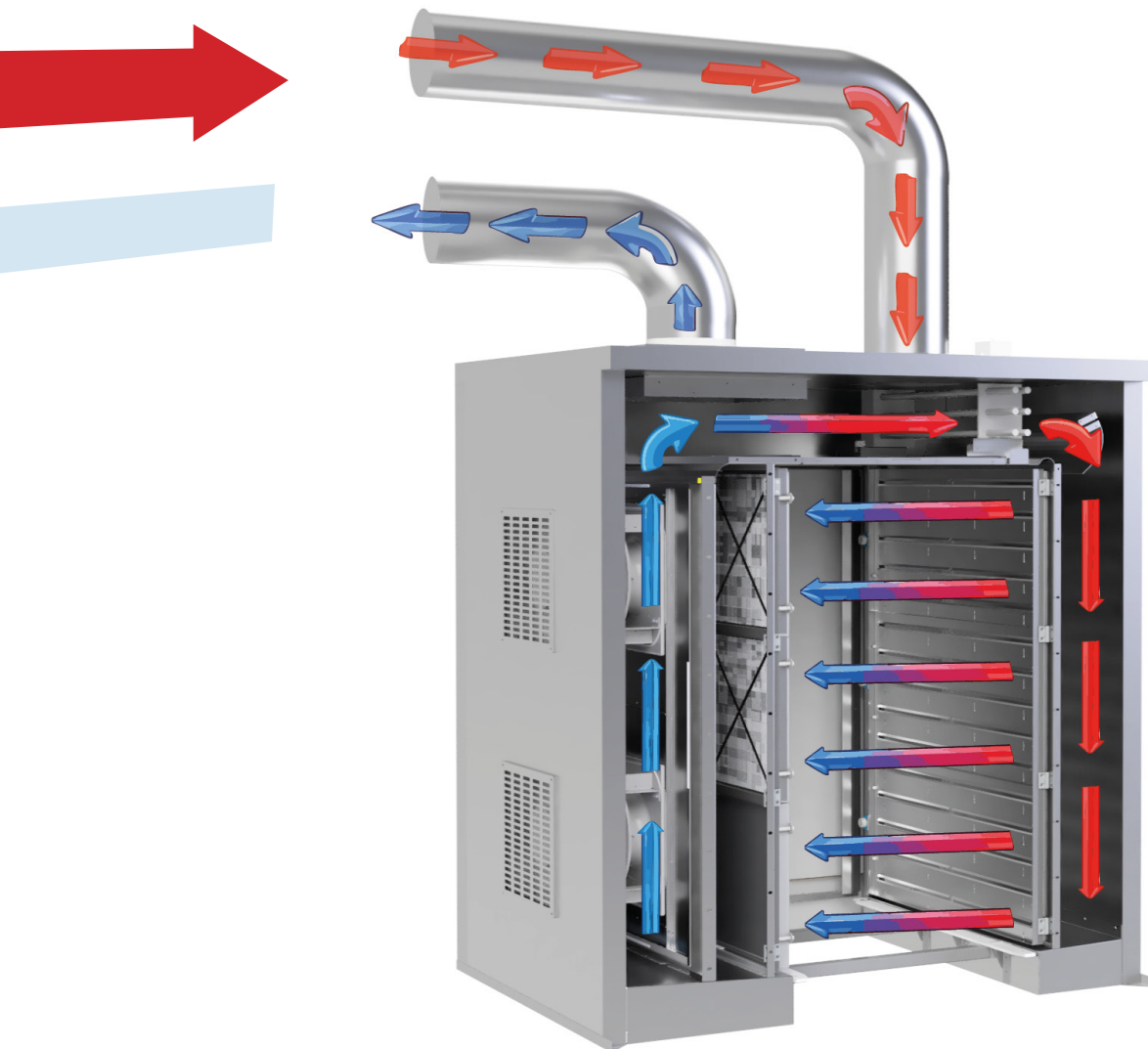
- ⑦ The dry, unsaturated air is subsequently supplied to the drying chamber.

This completes the closed-loop system.



Airgenex[®]pet dehumidification module

STANDARD AND SPECIAL SOLUTIONS - SUITABLE FOR ANY APPLICATION



We develop drying systems tailored to the specific requirements of your pet food production and integrate them seamlessly into existing processes - from batch drying of sticks and chew products to integration into continuous production lines.

Whether extrudates, pellets, flakes, coated products or functional snacks - each product places individual demands on temperature control, airflow management, moisture removal, residence time and capacity.

Additional factors such as bulk density and product geometry are precisely taken into account during system design. Our drying systems operate in a closed-loop air system

using energy-efficient heat pump technology. The process air is specifically dehumidified and conditioned to create constant and reproducible conditions - independent of ambient climate and seasonal variations.

All relevant parameters, including air volume, air velocity and temperature, are precisely matched to the product and target moisture content. This results in a stable, energy-efficient and product-friendly drying process with consistently defined residual moisture and high product quality.

The typical temperature range is between 30-75 °C; project-specific adjustments beyond this range can be implemented at any time.

TRAY DRYER / CHAMBER DRYER

The tray / chamber dryer is the ideal solution for batch drying processes requiring a high degree of flexibility. Products are evenly distributed, depending on the application, on trays, in pans, baskets or on customer-specific carriers, and then loaded into the drying chamber as a defined batch. Loading is typically carried out using multi-level tray trolleys, ensuring optimal utilization of the available drying space.

Depending on product requirements, airflow is directed either horizontally across trays or vertically through bulk products. The precisely controlled process air flows uniformly through each level, ensuring homogeneous moisture removal throughout the entire batch.

This results in uniform residual moisture profiles and reproducible drying results, even for sensitive products or varying batch sizes.

The systems are individually tailored to specific products, process parameters and available space. In addition to standard tray trolleys, existing trolley, basket or customer-specific carrier systems can be integrated, allowing existing logistics and handling processes to be maintained.

The modular design of the tray dryer enables flexible capacity adjustments. The H01 configuration represents a single tray module; additional modules can be added as required. This allows drying capacity to be expanded in line with increasing production demands.

Upon request, HARTER supplies the systems complete with customized loading units and integrated conveying technology.

This enables seamless integration into existing production processes and supports manual, semi-automated or fully automated operation.



H01 tray dryer for batch operation



Chamber dryer for batch operation

BELT DRYER

The belt dryer is a high-performance system designed for industrial production processes with continuous material flow, and can be operated both continuously and in batch mode.

The product is evenly distributed onto a perforated conveyor belt and passes through the drying section under precisely controlled continuous operating conditions.

Residence time is precisely controlled via the belt speed. Multiple adjustable process zones along the system enable an individual drying profile – from initial dehumidification to the exact adjustment of the target residual moisture content.

Temperature control, air volume and airflow direction are configured according to specific product requirements. Belt width, length and zone configuration are individually designed to achieve the desired throughput capacity.

DRUM DRYER

The drum dryer is a drying system that can be operated both continuously and in batch mode, in which the product is gently moved and uniformly mixed within a rotating drum. The continuous rotation ensures constant turning of the material, supporting uniform moisture removal across the entire product surface.

The process air is precisely guided through the barrel and adjusted to product load, particle size and target residual moisture. Rotation speed, residence time and air parameters are fully controllable, enabling individual adaptation to different formulations and bulk materials.

The drum dryer is particularly suitable for free-flowing, robust products and is designed for both batch processes and continuous production with a consistent material flow.



Belt dryer for continuous and batch processes

The result is an energy-efficient, process-reliable solution designed for continuous operation, delivering high capacities and consistently uniform product quality.



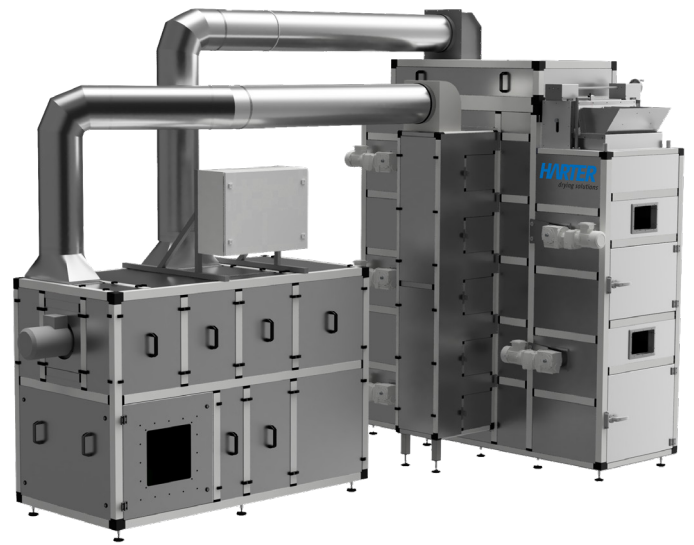
Drum dryer for batch and continuous processes

Its compact design and controlled product movement ensure stable drying results and reliable integration into existing production lines.

RETROFIT OF EXISTING DRYING SYSTEMS

Many existing drying systems have evolved over time and were originally designed to meet earlier requirements. However, rising energy costs, increased quality demands and changing process conditions often mean that these systems no longer operate at optimal efficiency. A complete replacement is not always necessary - and in many cases not economically viable.

As part of a retrofit, we conduct a comprehensive analysis of your existing drying process and evaluate, together with you, whether the integration of our Airgenex®pet dehumidification technology is technically and economically feasible. Early coordination ensures that investments are made in a targeted manner and deliver sustainable benefits. Depending on the initial situation, we integrate the heat pump module into existing dryers. The existing mechanics, conveying systems and overall plant structure are retained, while dehumidification, airflow management and control systems are modernized and optimized. This results in



Airgenex®pet dehumidification module (left) for retrofitting an existing drying system (right).

stable, reproducible process conditions combined with significantly reduced energy consumption. In this way, we sustainably enhance the performance of existing systems - with a manageable investment, minimal disruption to ongoing production and a cost-effective modernization concept.

AIRGENEX®PET CUSTOM SOLUTIONS

Every drying task is as individual as the production process itself. That is why we develop customized drying solutions precisely tailored to your specific requirements.

From the design of drying parameters and integration into existing production lines to the consideration of space and infrastructural conditions - we engineer systems that integrate seamlessly into your processes.

Key factors such as available space, material flow, existing peripherals, safety requirements and climatic conditions are carefully taken into account.

Based on our many years of experience and modular system design, we deliver customized, future-proof solutions that ensure maximum process stability, energy efficiency and product quality - even for complex or specialized applications.

Our technology also allows for easy integration of a cooling stage into the drying process, if required by the application.

INNOVATION AND TEST CENTER

Test series conducted in our technical center provide reliable insights and process security. We evaluate your product with regard to temperature, time, moisture content, air velocity and air volume flow. Particular attention is also given to airflow within the dryer, as it is a key factor for successful drying. For this purpose, we operate several multifunctional dryers that our engineers adapt to the specific application.

In some cases, a single test series is sufficient to identify the optimal solution. In others, multiple test runs with different configurations are required. This is where our experts come in - applying creative and alternative approaches to always find the best possible solution.

Since 1991, we have conducted thousands of drying tests in our technical center. The experience and expertise gained form a valuable knowledge base - one that directly benefits your application.



A DAY BEYOND TECHNOLOGY

You are welcome to participate in the test runs. See for yourself the performance of our heat pump dryers and the innovative solutions we develop.

We provide valuable insights into drying technology tailored to your specific product. At the same time, we place great importance on professional support and a welcoming atmosphere - ensuring your visit is both pleasant and productive.

OUR SPECIAL SERVICE

If required, drying trials can be conducted directly at your site using our rental equipment. Larger-scale pilot setups can also be realized in coordination with your requirements.

WHERE DRYING BECOMES AN EXPERIENCE

Manufacturers of extrudates, pellets, flakes or snacks are facing increasing demands in terms of product quality, process stability and energy efficiency. Long drying times, fluctuating residual moisture and high energy consumption negatively impact both productivity and product quality. Changes in formulations, new product

shapes or increased throughput require exact coordination of temperature control, airflow management and dehumidification. In our pilot plant, we test and optimize your processes under realistic conditions. Based on these results, we develop customized, energy-efficient solutions for stable and future-proof production.

INCREASING PROFITABILITY THROUGH DRYING

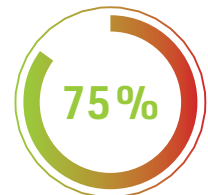
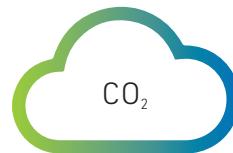
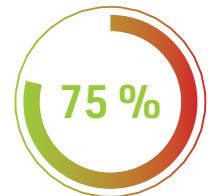
Our Airgenex®pet dehumidification module offers not only ecological but also significant economic advantages:

- » Improved product quality
- » Increased process reliability
- » Reduced operating costs
- » Lower resource consumption
- » Independence from fossil energy sources and climatic influences

SAVINGS POTENTIAL



ENERGY



ASSESS FUNDING OPPORTUNITIES

In many countries, funding programs are available to support investments in energy-efficient technologies.

Whether and to what extent funding is available for your project depends on location, application, and specific conditions, and should be carefully evaluated in advance. We are happy to support you with our experience in assessing your opportunities.



Our CO₂- and energy-efficient drying technology was recognized as a future-proof solution in the D-A-CH region as early as 2017. Since then, many of our customers have successfully applied for and received government funding. Explore your available funding opportunities.

Regina Mader, Managing Director, Harter GmbH



ON THE SAFE SIDE LATER ON – OUR AFTER-SALES SERVICE

Do you want your drying system to consistently deliver optimal results for your product over the long term?

We provide the highest quality systems – and maintaining this performance is in your best interest. For this purpose, we offer a comprehensive service package.



PERFORMANCE SERVICE

Unlock the full potential of your system.

As part of regular maintenance, our technicians inspect all system components for reliability and performance.

If required, key parameters are precisely adjusted to ensure that the full performance of your dryer is consistently maintained.

EXPERT SERVICE

Do you require technical support?

Is your dryer not performing as expected? For all urgent issues, our ASS team is your first point of contact. You will receive competent assistance from our technical support, including remote diagnostics with direct evaluation where necessary.

CUSTOM SERVICE

If requirements change.

Have product shapes or formulations changed? Are you looking to reduce drying times, increase through put, or stabilize your processes? Whatever your requirements may be, our experienced team supports you in optimizing, modifying, and specifically upgrading existing drying systems.

LIFETIME SERVICE

To ensure consistent quality at all times.

Long-term, continuous operation inevitably leads to wear, even on high-quality components. We ensure high availability of spare and wear parts, enabling reliable production throughout the entire lifecycle of your drying system.



DRYING EXAMPLES





Since our founding in 1991, HARTER has stood for innovative and energy-efficient drying technology. With in-depth process expertise and many years of experience, we develop and manufacture high-quality drying systems for a wide range of products and materials.

Our objective is to realize the optimal drying concept for every application - efficient, process-reliable and sustainable. This results in customized solutions with reproducible results and high economic efficiency in continuous industrial operation.





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