
Synthetic Rubber
and Copolymers.
Thermal
processing
technologies.
BÜHLER
Innovations for a **better world.**

Thermal Processing for Rubber.
Robust. Clean. Efficient.

High Capacity Designs for Advanced Material Handling.

With over 70 years of manufacturing and production experience, and installations with every major global producer of synthetic rubber, Bühler has a long history in rubber production, providing advanced thermal processing systems for NBR, SBR, SBS, and specialized polymers, in all grades, standard and oil extended.

Bühler has supplied some of the largest dyers in the world, with systems producing up to 175,000 tons/year on a single line. Size is not the only measure though, AeroDry's advanced air management offers the highest productivity per square meter available on the market today. Bühler's advanced dryer design enables rubber production lines to be started up quickly and run for extended periods for a profitable operation.

AeroDry's modular construction technique provides for pre-assembly of critical components. This modular approach simplifies shipping and onsite logistics, reducing install time. Onsite, modules are joined together for a smooth interior surface that eliminates many product hold-up points.

Heavy-Duty Construction.

AeroDry's reinforced, walk-on roof platform serves as a structural element, as well as a thermal barrier, while the heavy-gauge doors provide an air tight seal around the dryer, preventing air leakage and thermal loss.

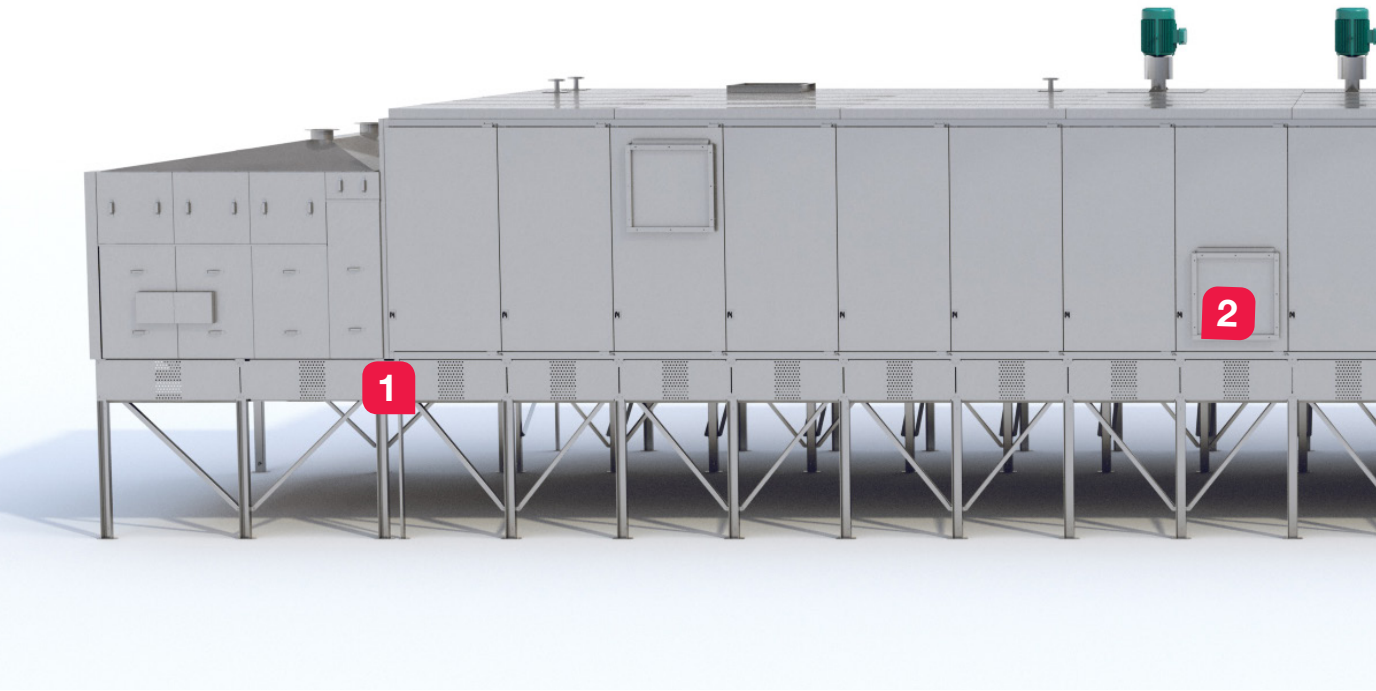
Reinforced Conveyor System.

The conveyor's reinforced roller chainrides on a self-cleaning rail, ensuring clean, positive conveyor travel and tracking down the entire length of dryer. A controllable chain lubrication system enables precise lubricant application without the fear of product contamination resulting from over oiling. A heavy duty, reinforced dual drive system drives the conveyor from both sides, ensuring precise and uniform chain loading on even the longest dryers.

Designed for Clean Operation.

An easy-to-clean design ensures access to both sides of the floor, conveyor and fan spaces for cleaning; easily accesible sliding filture provide protection from fines fouling the coils; a smooth interior discarge end ensures maximum access to rotating equipment like doffers and breakers; and a scraper for the conveyor allows for continuous cleaning during operation. These features and more combine to maxmize process uptime.

Efficient and innovative peripherals.
Optimizing the process.



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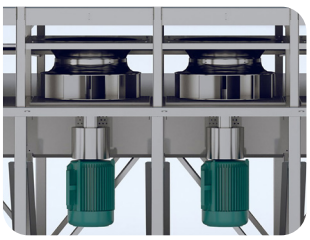

Circulation fans.

Direct drive, variable speed circulation fans provide the needed airflow throughout the process zone. These fans provide greater energy efficiency and less maintenance than pulley driven fans.

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Conveyor chain.

Built to withstand the rigors of extended use in harsh environments, our conveyor chains keep the product moving reliably through the process zones.

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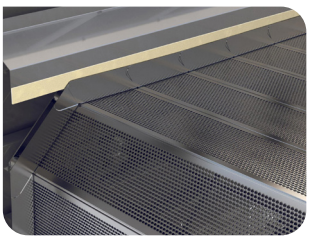
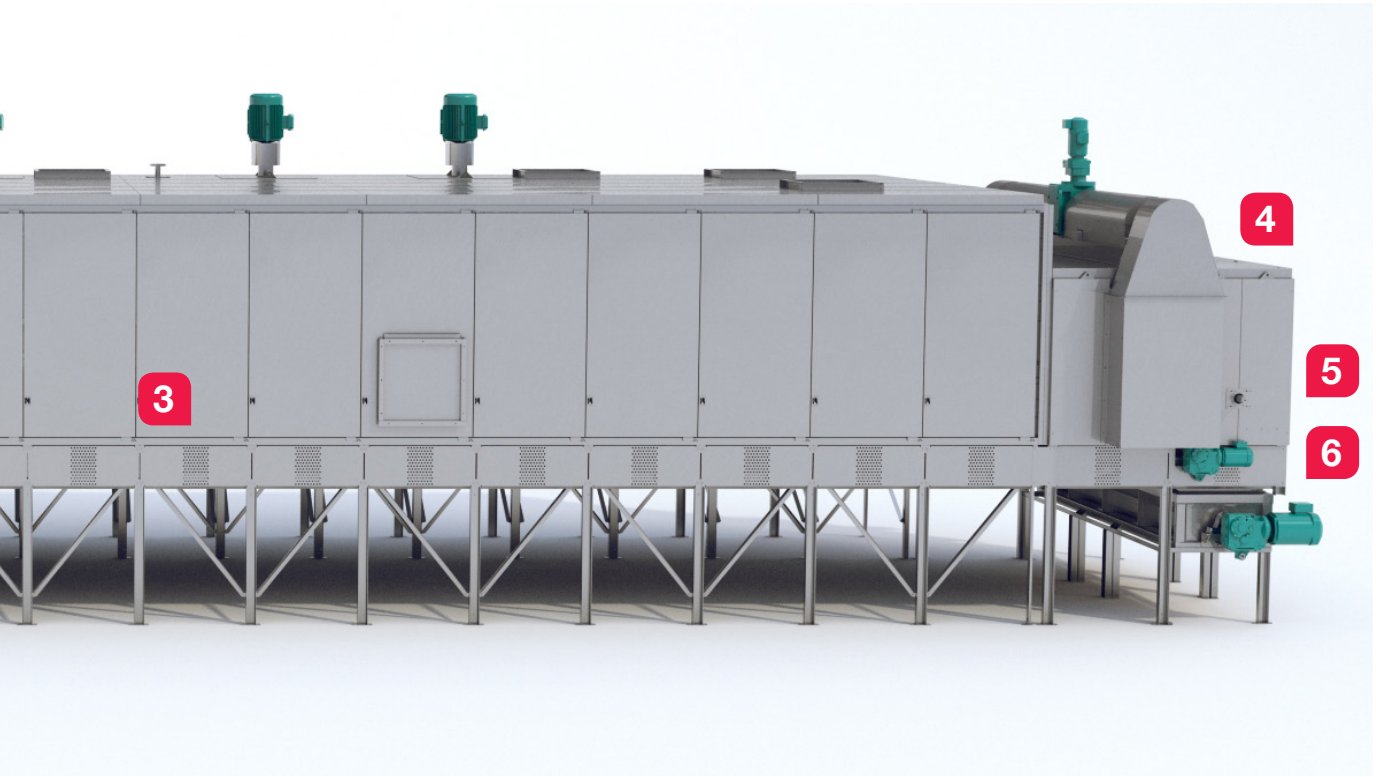


Conveyor bedplates.

Perforated metal interlocking or pinless slip hinge bedplates deliver consistent performance, while a deep truss arrangement ensures heavy loading capability.



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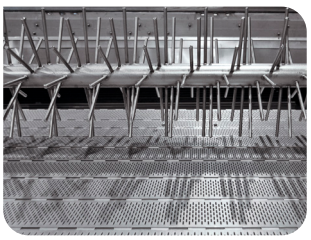

Picker.

For applications requiring aggressive handling, specially designed rotating pickers can be added to loosen the product on the conveyor.

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Doffer.

An optional rotating doffer is positioned at the dryer discharge to assist in releasing product from the bedplates, making sure it stays in the product stream, and keeping the dryer efficiency high.

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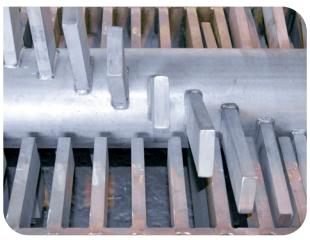

Rotating tine breaker.

A heavy duty reinforced rotating blade and tine breaker system provides initial product size reduction, reducing particulate to a consistent size and breaking up clumps, for downstream conveying.

Designed to Maximize Production.
Worry-free for the long term.

Oscillating Vibratory Feeder for Precision Control.

Bühler's thermal processing systems can be fitted with a hydraulic oscillating vibratory belt feeder, or bias cut feeder to load the dryer downstream of expander/extruders. A precision control system ensures uniform conveyor loading and maximizes the overall consistency of the polymer's final moisture content

Process Knowledge and Testing Capabilities.

We collaborate with your team to incorporate knowledge from current processes or trials in Bühler test equipment to match the needs of your specific application. Tests are conducted at your site to ensure consistency of rubber crumb. Pilot dryers are staged at Bühler sites globally for easy transport to customer plants.

Test equipment allows variable operating conditions to model full size dryers and accurately determine drying characterisitcs. Additional customer tests can be conducted for oil penetration, color, durometer, cooling, etc.

Pilot drying data can be compared with data measured by Bühler technicians on existing full-scale dryers for debottleneckinng and optimization.

Material Handling Designs Available to Process a Wide Range of Materials.

Conveying system and material handling devices are selectable to compliment a wide range of synthetic rubber crumb and co-polymer products.

Slide out cartridge style breaker design allows ease of cleaning and maintenance. Optional high pressure conveyor bed cleaning systems available to optimize operating time between deep cleanings.

Global Presence, Local Support.

Twenty-four hour support draws from the expertise of more than 1,200 field engineers around the world. Bühler conducts field evaluations for drying processes, mechanical performance, and energy optimization. It also offer parts, retrofits and expansion support regardless of the dryer make or model.

Processing Education and Training.

Bühler knows the drying step like no other. Specialized seminars help processors learn the theory of drying and how to apply it, to ensure product yield and profit margins. Customers frequently discover opportunities to improve processing operations and maximize uptime and productivity.

Built in sustainability for new and existing dryers. **Products and services that support your sustainability iniatives.**

As the world's leading provider of thermal process technologies, we believe we have a responsibility – and an opportunity – to impact our customers' sustainability initiatives. Drying is resource-intensive, but it allows us to develop tailored solutions to reduce CO_2e emissions, greenhouse gases, energy costs, and waste. Knowing each process is unique, we use proven technologies to fit your specific application. To improve your organization's ecological footprint, we offer services to determine the best solutions and monitor your efforts to ensure your investments perform as expected and hit your targets. Your success is our goal.

Heat recovery

Installing a heat recovery system enables the use of air to air and fluid loop heat exchangers on our conveyor dryers, a proven energy saving technology resulting in **20% energy use reduction.**

Electrification and alternative fuels

Replacing burners or fluid-heated coils with electric heaters enables **full decarbonization**, as well as increased safety and hygiene.

Heat pumps

Using a heat pump and coil loop to preheat make up air, along with pulling waste heat from the dryer exhaust, can provide **energy savings of up 30%**, and increase decarbonization by reducing dependency on other fuels.

Analysis/ROI/Option Matrix

Provides you with an analysis of your needs and data around Capex, Opex, ROI and CO2e quantification based on your specific conditions, local energy costs, and availability of alternative energy sources.

Digital Services

Bühler Insights is our central platform for connected products and services, optimizing your plant's efficiency by reducing energy consumption and waste.

Energy and CO_2e audits, and dryer evaluations

An audit of your dryer's current energy usage and recommendations for optimization or heat conversions. A process evaluation will ensure optimal parameters are used and identify opportunities for upgrades or improvements.

Bühler

100 Aeroglide Drive
Cary, NC 27511 USA

T +1 919 851 2000
F +1 919 851 6029

info.dryingsolutions@buhlergroup.com
buhlergroup.com/drying