



Dryers and humidifiers



Dryers and humidifiers

DRYTEC has designed and manufactured dryers and humidifiers since its inception in 1995. Its product portfolio ranges from proven standard systems to special units for specific tasks.

DRYTEC, with the extensive expertise of its employees and its international presence, is the market leader in this field.

DRYERS AND HUMIDIFIERS

for the paper and film processing industry



KROENERT ♦ BMB ♦ DRYTEC

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Expertise and Development

Years of application experience of DRYTEC specialists in line engineering, process technology and thermodynamics forms a sound basis for the development of pioneering technologies and innovations.

This is supported by the largest production scale test line in the world at KROENERT's Technology Center. It also serves as a development platform for DRYTEC and makes possible, at production speeds of 3 - 1.610 m/min, trials and tests under realistic conditions.



Efficiency and Commercial Viability

Drying plays a significant role in the efficiency and viability of a complete line. Topics such as air flow, and recovery, air-tightness, thermal insulation and nozzle technology enjoy special attention in the development and manufacturing processes of compact dryers.

This is complemented by a high degree of individuality and flexibility in system controls. Every individual segment of the dryer is regulated separately. The advantage for the user: optimum alignment to the manufacturing process. The result: minimized costs.

Another guarantee for economical operation with a high degree of efficiency is the wide range of drying systems, ensuring customized configuration.

DRYTEC lines are designed for the best efficiencies combined with long-term, low-maintenance, reliable and resource-friendly completion of their tasks.

More importantly, flexibility is a key criterion: it is possible, with one and the same line, to process materials with thicknesses ranging from 3 μm up to 1.000 μm . This gives rise to a clear performance advantage to the customer, ensuring continuous production and making the system sustainably competitive, even with changing requirements.

DRYTEC offers a comprehensive range of dryers and humidifiers, such as the FLOATEC air floatation dryer, the ROLLTEC roller supported dryer and the STEAMTEC steam humidifier.

General Features of DRYTEC Dryers

The dryer is an important, performance-defining component in a coating line. With DRYTEC dryers, water and solvent-based materials, as well as pre-polymer systems (100 % compound) can be dried or cured.

DRYTEC dryers are characterized by their high drying capacity, top accessibility and ease of maintenance. They also offer the following advantages (partly optional):

- Compact dryer, i. e. heating coil, circulation blowers and motor in dryer housing
- Parallel lifting of dryer top parts (450 or 600 mm)
- Combined lifting of multiple dryer sections
- Individually controllable air speed per section, of up to a maximum of 50 m/s, with frequency-controlled motor
- Homogenous air distribution using nozzles
- Individually controllable temperature per section
- Homogenous temperature profile in transverse and longitudinal direction
- Circulating air and web temperature measurement
- Gas, thermal oil, steam or electric heating of dryer
- Side extraction of circulating air
- Individually adjustable fresh or circulating air volumes
- Side glass windows for observation of web when dryer is closed
- Inlet and outlet sluices to prevent loss of pressure

- All nozzles with quick release, can be removed and installed without tools
- Different and interchangeable nozzle profiles and shapes
- Substrate transport with low or high web tension
- Precise controls and insulation for energy saving

DRYTEC customers also benefit from proven security components, such as:

- Active security, e. g. through all-round contact strips, safeguards against lowering and redundant solvent measurement
- Passive security by verification of explosive distortion in extreme cases
- Constant monitoring of all operating parameters using the PROLINE visualization system
- Definition of interfaces to solvent incinerators or recovery plants

Technical Data

Werkung width 500 - 3.300 mm

Production Speed up to 1.610 m/min

Heating gas, thermal oil, steam, electric

Substrate

| | |
|--------------|----------------------------|
| Paper | 17 - 180 g/m ² |
| Cardboard | 180 - 500 g/m ² |
| Polymer film | 3 - 500 μm |
| Metal foil | 6 - 150 μm |



Floatation Dryer (FLOATEC)

- Non-contact, sinus-shaped web guiding through dryer
- High-tech floating nozzles ensure efficient drying of coating



FLOATEC HD 350

Roller Dryer (ROLLTEC)

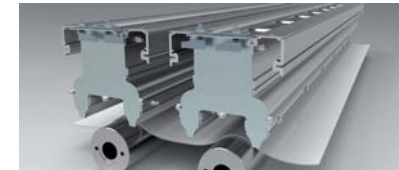
- Driven guide rollers to transport web through dryer
- Drying air is supplied from top



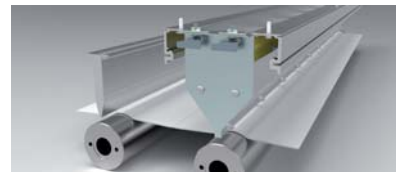
ROLLTEC HD 250

Nozzle Shapes

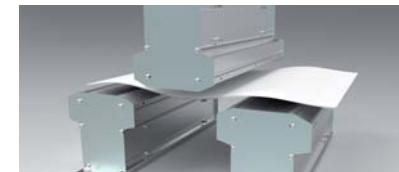
Nozzle shapes are selected on the basis of the drying task and dryer type. DRYTEC nozzles are characterized by a high level of heat transfer and allow stable substrate transport through the dryer. An extruded aluminum profile is used for the manufacturing of the nozzles, targeting unsurpassed nozzle precision and performance. Low web tensions protect the substrate during the drying process.



Double impingement nozzle



Impingement nozzle



Floatation nozzle



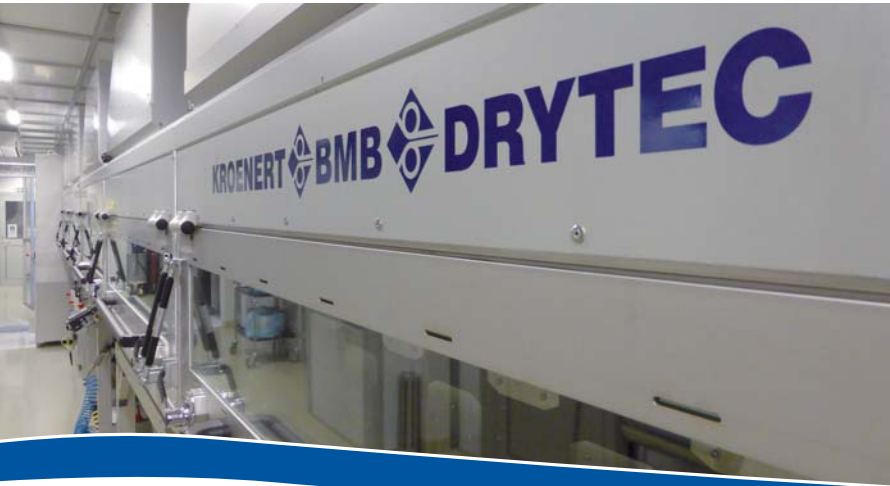
CONTEC nozzle



Changeover nozzle (with belt)

Technical Data

| | |
|------------------|-----------------------------------|
| Workung width | 500 - 3.300 mm |
| Production Speed | up to 1.610 m/min |
| Heating | gas, thermal oil, steam, electric |
| Substrate | |
| Paper | 17 - 180 g/m ² |
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Special Dryers (CONTEC)

- Drying technology for thick coatings and for coatings with tendency of skinning
- For water and solvent-based materials
- Special bottom nozzles allow higher air volumes on substrate bottom without lifting web
- Despite low pressure environment web remains on guide roller (patent)
- Laminar air flow or changeover nozzle/direct jet nozzle/floating nozzle on upper side for blister-free drying



Drive side of dryer

Belt dryer (BELTEC)



BELTEC

- For very sensitive materials
- Substrate is placed on a belt and guided through dryer
- Drying air is supplied from above
- Belt can, with appropriate recirculation, be used for preheating or cooling of substrates from bottom

DRYTEC also manufactures specialized dryers:

- For use in high temperatures of up to 350 °C
- For inert gas drying
- In line with FDA and GMP guidelines
- With separate temperature and air flow top and bottom of substrate (DUOTEC)

Humidifier (STEAMTEC)

The STEAMTEC humidifier is used for the rehumidifying and flatness control of web-like paper. Contact-free humidification of the material web with steam, on one side (STEAMTEC 0.5) or on both sides (STEAMTEC 1.0), is possible. STEAMTEC makes it possible to achieve defined, adjustable and reproducible humidification of paper webs in both longitudinal and transverse direction.



STEAMTEC

The STEAMTEC is divided, depending on working width, into multiple segments. The steam quantity is regulated by motorized GS valves with approximate linear characteristics. Extraction at the top and bottom of the steam unit can be adjusted separately by manually operated valves.

The STEAMTEC is further characterized by following:

- Uniform steam distribution in longitudinal and transverse direction
- Simple, user-friendly adjustment of humidification parameters
- Flexible applications for different substrates
- For high speed applications
- Sturdy construction
- Low maintenance
- Good availability

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