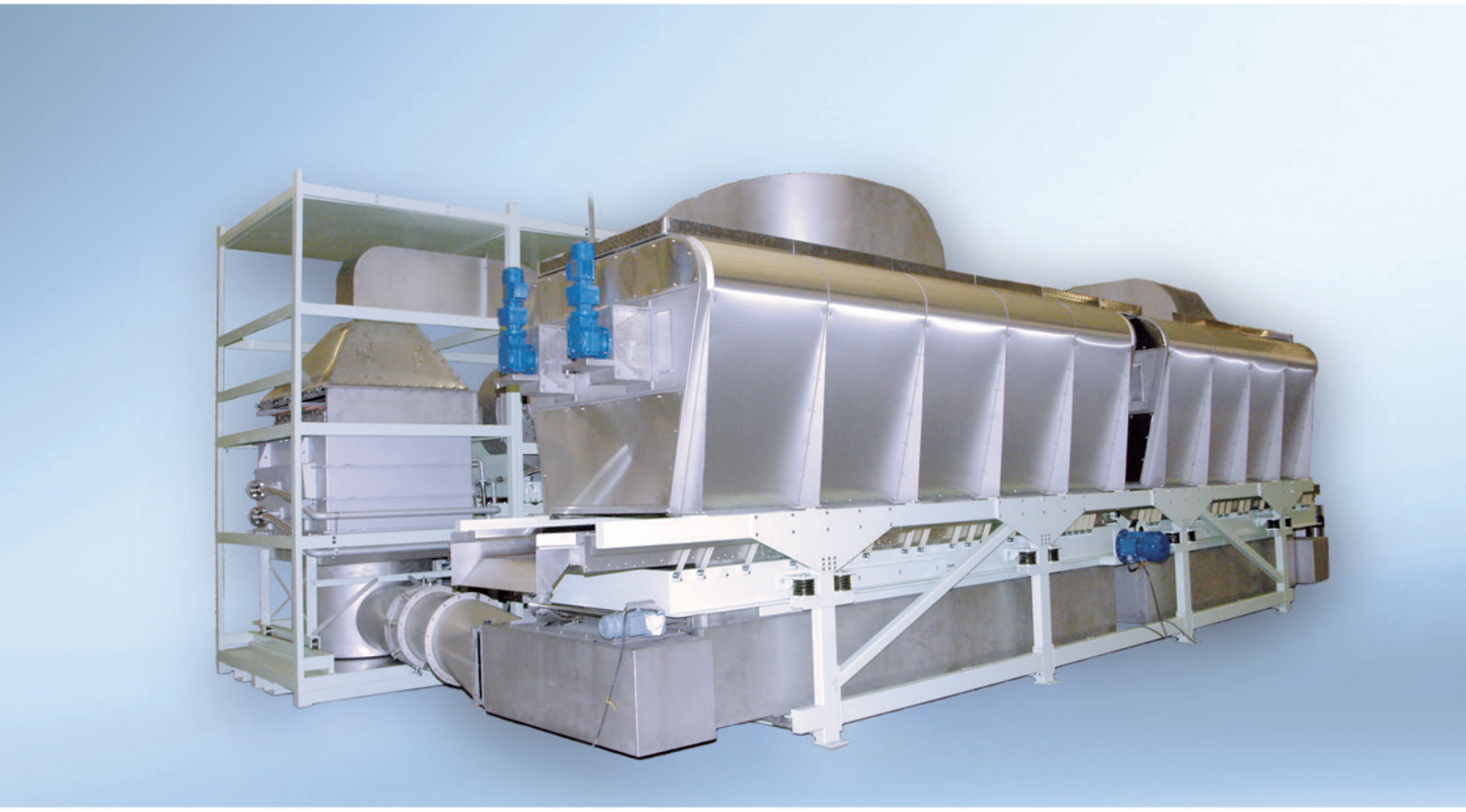
FBD

FLUIDIZED BED DRYER

Homogeneous fluidized drying process for cut rolled expanded stems.

HEINEN KÖHL

TOBACCO-SOLUTIONS WITH POWER



Optimal drying process unit for cut rolled expanded stems - efficient and homogeneous.

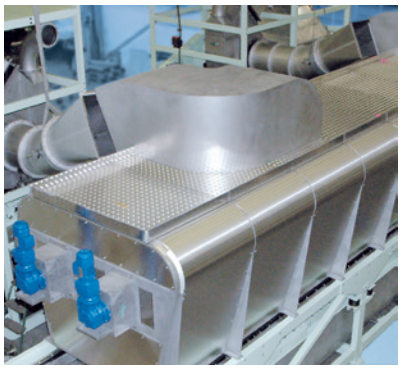
HEINEN KÖHL supplies various tobacco processing and logistic equipment. Automation solutions and process visualisation and logistics are also the commitment of HEINEN KÖHL.

With the **F**luidized **B**ed **D**ryer **FBD** HEINEN KÖHL has developed an optimal process unit for drying cut rolled expanded stems.

Principle of the Fluidized Bed Dryer
A vibratory conveyor is leading the tobacco in an even layer through two drying zones. The process air coming from the perforated bottom of the trough creates a homogeneous fluidized carpet.

In HEINEN KÖHL standard process air will be conditioned in energy units following the closed loop principle. In this unit the process air will be cleaned from dust particles and heated to the requested drying temperature. In addition it guarantees a continuous fresh air supply and a continuous exhaust discharge for a perfect water load of the process air.

Technical Data	
Product	CRES
Max. Flow Rate	2.500 kg/h - 38,0 % m.c.
Discharge Rate	1.800 kg/h - 14,0 % m.c.
Inlet temperature	ca. 70° C
Discharge temperature	ca. 60° C
Power	
Electricity	6 kW/h
Compressed Air	min. 6 bar

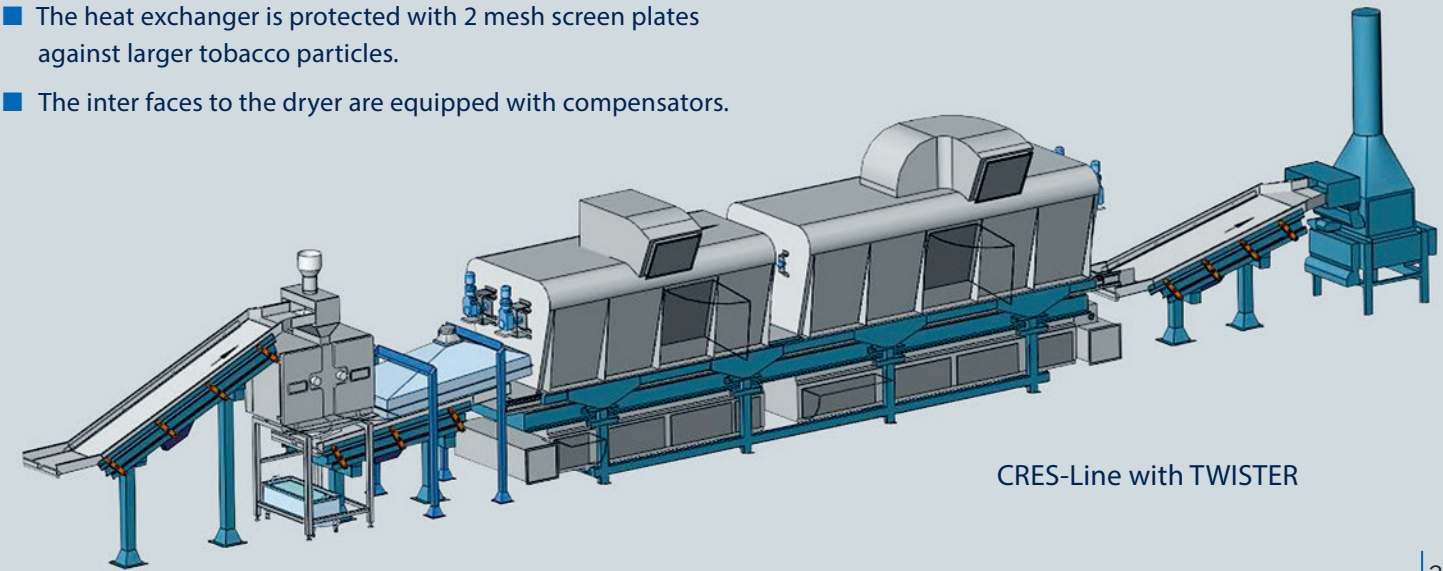


ENERGY UNIT

Energy Unit in detail

- Base frame and supports are made from hollow section.
- The units are sound insulated.
- Service doors are provided for access to fan and heat exchanger. All components which are in contact with process- & circulating air are made of stainless steel and are insulated (except heat exchanger).
- Each unit can be packed for transportation without dismantling inner parts.
- The heat exchanger is protected with 2 mesh screen plates against larger tobacco particles.
- The inter faces to the dryer are equipped with compensators.

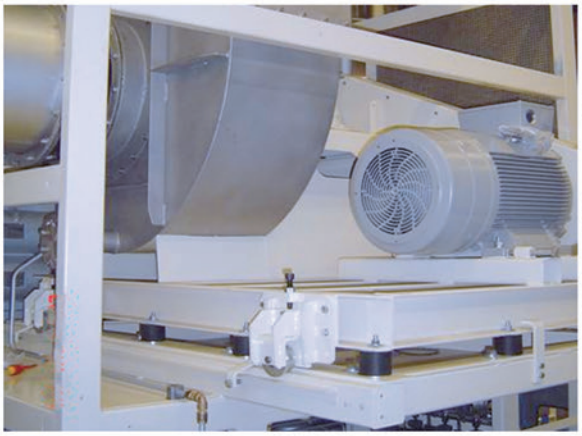
Technical Data: Energy Unit	
Requested steam pressure	10 bar/Ü
Steam consumption	approx. 1.200 kg/h
Requested compressed air pressure	6 bar
Power	
Fan zone 1	45,0 kW (with soft start)
Fan zone 2	45,0 kW (with soft start)



CRES-Line with TWISTER

OPTIONS

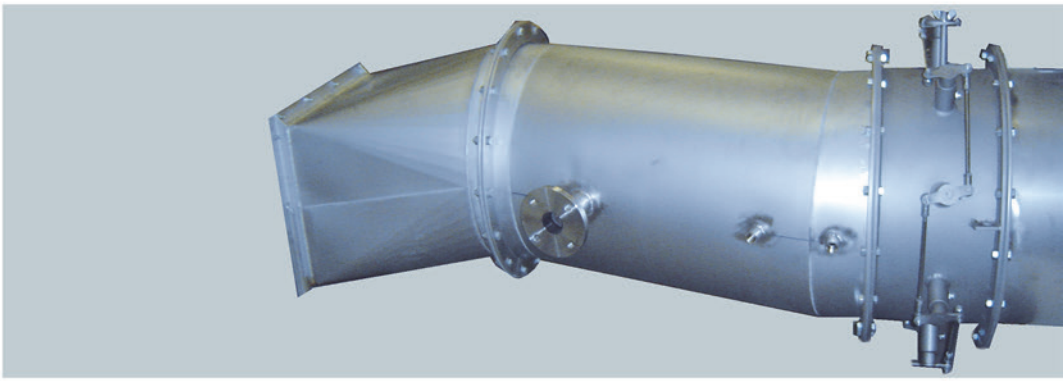
Heat Exchanger Tightness Control



Fan and Heat Exchanger are installed on pull-out rails for maintenance.

Platform

Flexible Steam and Condensate Interface



Process Air Moisture Control

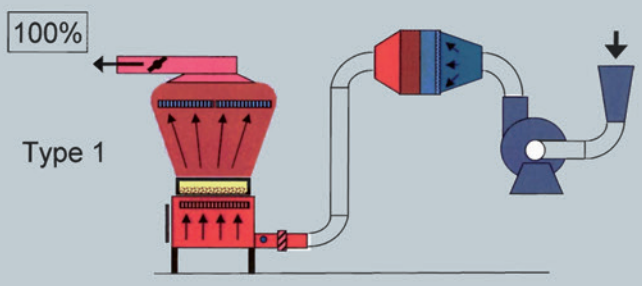
Options in detail

- The energy units are mounted on shock absorbing supports.
- The process air fan is mounted on vibration control.
- The impeller of the fans is designed in order to prevent dust accumulation.
- An installation is provided to test the leak tightness of the heat exchanger with water pressure without dismantling the pipe work.
- A device is provided for easy dismantling of the heat exchanger.
- A device is provided for easy dismantling of fan and motor.
- Steam and condensate pipes to the heat exchanger are equipped with flexible connections.
- Each process air loop is equipped with a temperature-, moisture and mass flow control.
- Each exhaust air exit is equipped with a temperature-, moisture and mass flow control.

PRINCIPLE

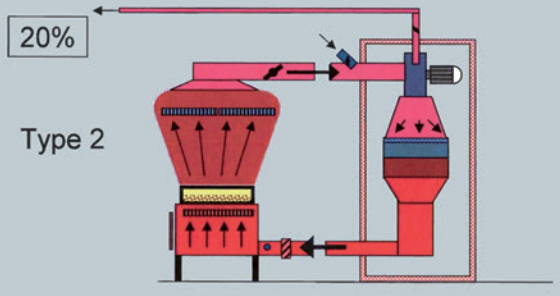
Open Loop Process

- Independent position for heat exchanger and fan
- Exhaust: 100% of process air
- Lower investment for dryer
- Higher energy consumption
- Higher investment for exhaust filter



Closed Loop Process

- Compact and insulated unit for heat exchanger and fan
- Exhaust: 20% of process air
- Higher investment for dryer
- Low energy consumption
- Lower investment for exhaust filter



Advantages in detail

- The vibrating trough is made of high-grade stainless steel.
- The bottom plate of the trough is performed with a special treatment in order to achieve a uniform and consistent drying result.
- The process air distribution chamber is completely insulated and all inner parts are made of stainless steel.
- The fine adjustment of the process air velocity can be set from the outside by special damper units.
- The flow straightener sheets can be lifted automatically up- and downwards for cleaning purposes.
- Service doors are equipped with gas spring elements for easy access.
- The dryer is equipped with 2 large insulated hoods made of stainless steel.
- Each hood has a large service door.
- Underneath the roof fin plates are located in order to achieve a uniform down stream air flow.
- For cleaning purposes, the fin plates can be turned automatically in a vertical position by gear motor.
- The special design of the hood prevents over-dried tobacco accumulation along the sidewalls of the process areas and ensures a perfect average of tobacco moisture.
- The components can be pre-wired and supplied with electrical fittings and local disconnect box.

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Non-binding technical data and figures. Subject to change.
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