



DRUM DRYERS FOR THE WOOD PANEL INDUSTRY



RECALOR, S.A.
DRYING TECHNOLOGY



THE COMPANY

Established in 1982, RECALOR S.A. is an international supplier of industrial dryers for the woodworking industry worldwide. Our dryers are completely custom designed to meet the individual requirements of each customer. We provide optimum solutions both for reduced capacities (2 t/h) as well as for large capacities (75 t/h).

MANUFACTURING PROGRAM

Drum dryers for:

- Wood Panel industry
- Wood Pellet industry
- Agrofood industry
- Other industries

Machinery:

- Combustion chambers
- Mixing chambers
- Sand separators
- Mechanical Transports
- Pneumatic Transports
- Fans

SERVICE

Our manufacturing program is backed by a full end-to-end service including:

- Engineering and custom design
- Construction
- Transport
- Mounting
- Start up
- After Sales Service
- Installation upgrades and optimizations

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01 HOT GAS GENERATOR

This component permits the generation of hot gases with an outlet temperature range of approx. 750 - 850 °C. The hot gas generators can run on a wide range of different fuels such as gas, light oil, heavy oil, wood dust, bark (furnace), etc. The capacity of the hot gas generator is regulated by the dryer outlet temperature.

02 MIXING CHAMBER

In the mixing chamber, hot gases are mixed with return gases and lowered to the dryer entrance temperature of approx. 450 °C for standard solutions, or alternatively 300 - 350 °C for low temperature solutions.

03 SAND AND SPARK SEPARATOR

The separator eliminates sand, sparks and ashes coming from the combustion chamber in order to reduce the risk of fire and the sand and ash content in the wood panels.

Sand, sparks and ashes are collected by screw conveyors and rotary valves and deposited into a container.

04 WET CHIP INFEED

The wet chips are introduced through a rotary valve into the pre-dryer together with the hot gases.

05 FLASH PRE-DRYER

The pre-dryer offers several advantages:

- optimal distribution of the chips in the gas flow
- the chips are exposed only for a short time to high temperatures
- the gases enter the drum at lower temperatures, which minimizes the risk of fire
- the pre-dryer also works as coarse material separator (elimination through a rotary valve)
- the temperature between pre-dryer and drum dryer permits a cascade regulation, consequently the outlet temperature and the final humidity of the chips can be optimally regulated.
- alternatively to the flash predryer, a standard horizontal wet chip infeed can be foreseen.

06 DRUM DRYER

The drum dryer is equipped with lifter paddles and cross installations in order to ensure an optimal contact exposure between the particles and the hot gas. The chips are transported by the gas flow through the drum.

07 SEPARATION AND DRY MATERIAL DISCHARGE

Separation of coarse material and discharge of the dry chips through a rotary valve [08](#) at the outlet elbow.

09 FINE CHIP AND DUST SEPARATION

Fine chips and dust are separated in a high efficiency cyclone group and discharged through a rotary valve [10](#) resulting in a final dust load of < 300 mg/Nm³ in case of connection to a WESP [13](#) or alternatively < 100 mg/Nm³ if no WESP is foreseen.

11 FAN

The fan guarantees the gas and chip flow throughout the entire installation. The fan is equipped with a frequency inverter in order to optimize the air flow and the power consumption.

12 EMERGENCY CHIMNEY

In case of emergency shut down of the electrostatic precipitator, the connection between the dryer and the filter closes and the emergency chimney opens.

13 CONNECTION TO WESP

(Optional, not included in the RECALOR delivery)

A wet electrostatic precipitator is used where aerosol solids mixes have to be separated highly efficiently (e.g. aerosols, fine dusts, blue haze, paint mists, resin vapours, odours).

14 RETURN GAS PIPE

The return gas pipe leads approx. 50 % of the total gas flow back to the mixing chamber. The pipe is equipped with a modulating flap, to control the depressurization in the mixing chamber. A sliding duct allows to open the return gas pipe completely, preventing the backflow of hot gases from the mixing chamber to the chimney during a fan stop.

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