

# Flash Tube Dryers

Fiber Dryer with and without air circulation

05 | 2011



**SPE**  
DIEFFENBACHER GROUP

## Flash Tube Dryers with and without air circulation

### Drying of wood fibers for the MDF, HDF and WFIB industry

- Wet material is injected via a blow-line into the dryer, dried to the desired moisture content and pneumatically conveyed through the dryer duct. High performance cyclones separate the gas stream from the fibers, which are discharged via rotary valves. Exhaust gas is either vented into atmosphere or to a secondary dedusting system. Part of the gas can be re-circulated, if the dryer is heated by hot gases.

### Capacity

- Up to 40 t/h (b.d.) mechanical throughput



## Flash Tube Dryers with and without air circulation

### Technical characteristics

- Adjustment of dwell time dependent on the type of material
- High throughput
- Low mechanical scale of installation
- High standard of operating safety and reliability
- Amount of gas re-circulated is infinitely variable
- Approx. 25% of thermal energy saving in installations with re-circulation

### Design characteristics

- Material input and dosing additives via blow-line
- Adjustable final moisture related to either blow-line or mechanical blending
- 1-stage or 2-stage drying systems

## Flash Tube Dryers with and without air circulation

### Energy sources

- Indirect heating using heat exchangers with steam or thermal oil for primary energy transmission (no recycle air operation possible)
- Direct heating with dust, gas, light or heavy oil
- Hot gases from green energy and waste combustion (grate firing systems)
- Exhaust gases from gas turbines and/or diesel engines for electric energy production
- Exhaust gases from thermal oil boiler

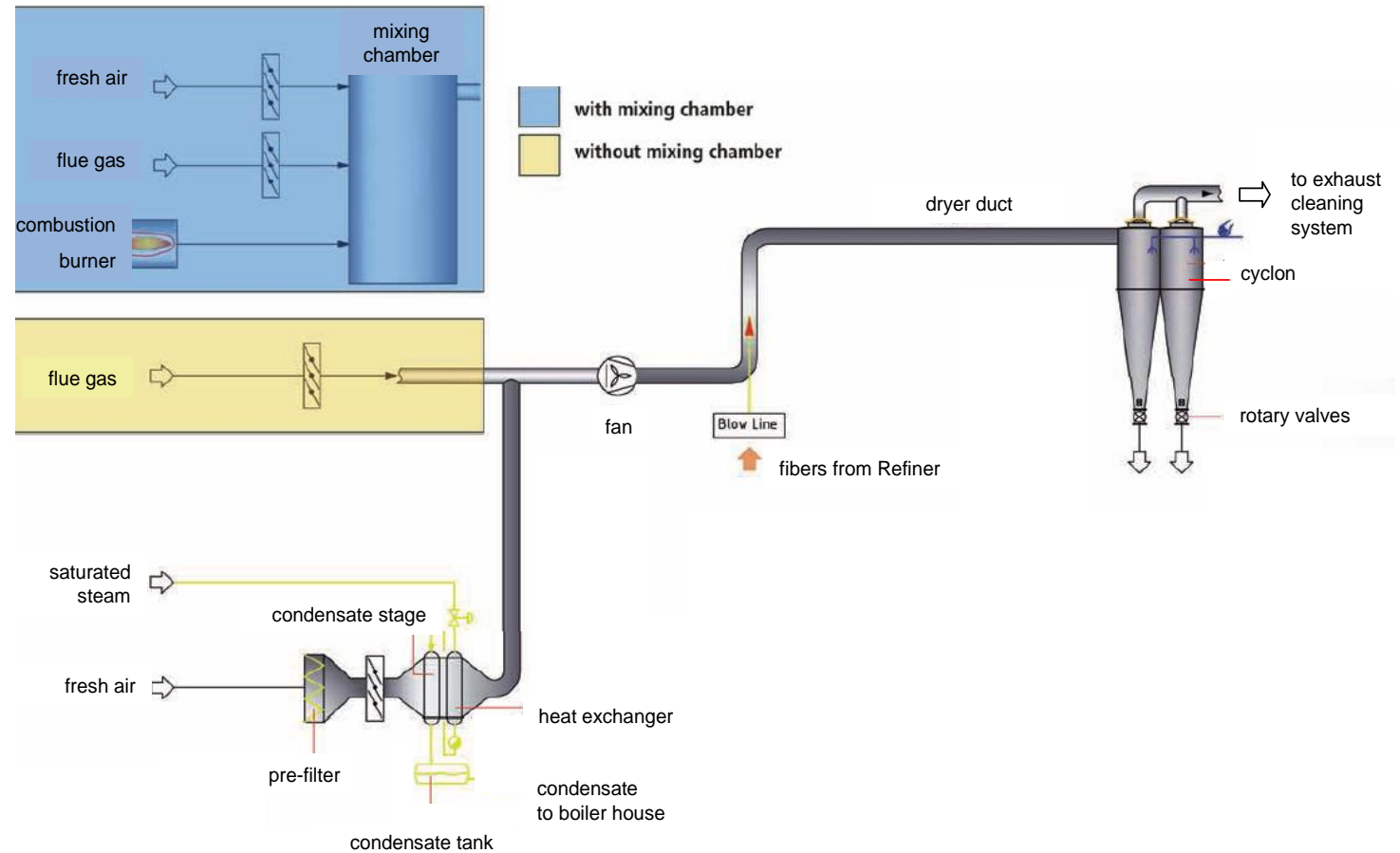
### Dust collection

- High-efficiency cyclones
- Wet electrostatic precipitators (WESP)
- Recuperative thermal oxidizers (RTO)



## Standard Installation Fiber dryer – Type of Construction

- FT Single stage fiber dryer
- FTU Single stage fiber dryer with recirculation system
- FTZ Two stage dryer



## **Fiber dryer - different concepts**

- Direct heating
  - Flue gases from
    - gas burner
    - dust burner
    - light or heavy oil burner
    - grate firing
  - Exhaust gas from turbine, boiler houses, generator
  
- Indirect heating
  - Heat exchangers with steam or thermal oil

## Standard Installation Fiber dryer



FTU Single stage fiber dryer with re-circulation system

## Design features

- Dryer duct, completely welded inside
- Cleaning doors alongside the dryer duct
- Frequency control for fan drive (option)
- Vibration sensor for fan bearings
- Temperature sensor of motor and fan bearings
- Ambient air filter (option)
- High efficiency cyclones
- Rotary valves
- Rupture discs
- Extinguishing systems
- Spark detection
- Design acc. to ATEX-regulations



Dryer duct



High-efficiency cyclones, pre-assembled

## Design features



Ambient air filter



Main fan

## Standards and components



Control flaps for flue gas and ambient air



Rotary valves

## Standards and components



Mixing chamber



Control valve, sliding gate and  
gasburner