cd2.270 - Push Floor Dryer for Wood Chips

The push floor dryer is an efficient and cost-effective option
for drying the wood chips for an optimum process in the DC Gasifier.

Dry wood chips with a water content of ideally less than 7% are required for optimum operation of the Synthesis Gas Systems. To achieve this low moisture content, the wood chip dryer **cd2.270 is available in a modular design**. Depending on the required drying capacity, 1 to 5 drying elements are mounted one behind the other on the basic technical element. Half drying and bunker elements are also available to optimize the drying capacity. Bunker elements differ from the drying elements in that their surface has no slots for the drying air.

A reliable operation can be achieved thanks to the integrated screening and oversize grain separation with a shredder, even with low-grade wood chips. Fines that fall through the drying grid can either be discharged or added back to the wood chips. The dryer is loaded manually using a wheel loader or automatically via a conveyor system. The conveyor technology for connection to the Synthesis Gas System is designed on a project-specific basis (traverse screws, steep screws, etc.).

The dryer has an inherently stable steel structure. Installed on a concrete floor slab, the forces of the push floor are transferred into the steel structure, with only a slight load on the substrate or the building.

The drying progress is measured via several temperature sensors (measurement of the supply air and exhaust air) and if necessary, the fan power is controlled. The temperature of the air supply must not exceed 80°C.

The dryers can be designed and operated in two versions, OVERPRESSURE or NEGATIVE PRESSURE.
The NEGATIVE PRESSURE version (with hood) offers the following advantages:

- low dust generation in the installation room
- highly efficient drying performance thanks to dual air flow
- minimum power consumption

Elements & Options

Elements

- Discharge element with hydraulic technology (discharge of dry wood chips to the DC Gasifier conveyor system)
- Basic technical element (drying element with fine parts screw)
- Drying elements (air-permeable slotted bridge floor)
- Bunker elements (for loading the dryer if this is not done automatically via screw conveyors)
- Fine fraction scraper floor (the fines are added back to the dry wood chips or are discharged)
- Fan and heating coil (flanged directly to the dryer, project-specific design)
- Control technology in the control cabinet of the Synthesis Gas System or in separate control cabinet

Options

- Hood (for negative pressure version) or drop sides (for overpressure version)
- Partition walls for dual air flow (with negative pressure version)
- Vibrating screen with oversize grain separation
- Oversize grain shredder
- Fine fraction discharging (project-specific design)
- Conveyor technology (project-specific design)

Technical data

Version	OVERPRESSURE with drop sides	NEGATIVE PRESSURE with hood
Heat requirement approx.	1.5 kWh th / kg water	1.3 kWh th / kg water
Power consumption approx.	0.05 kWh el / kg water	0.03 kWh el / kg water

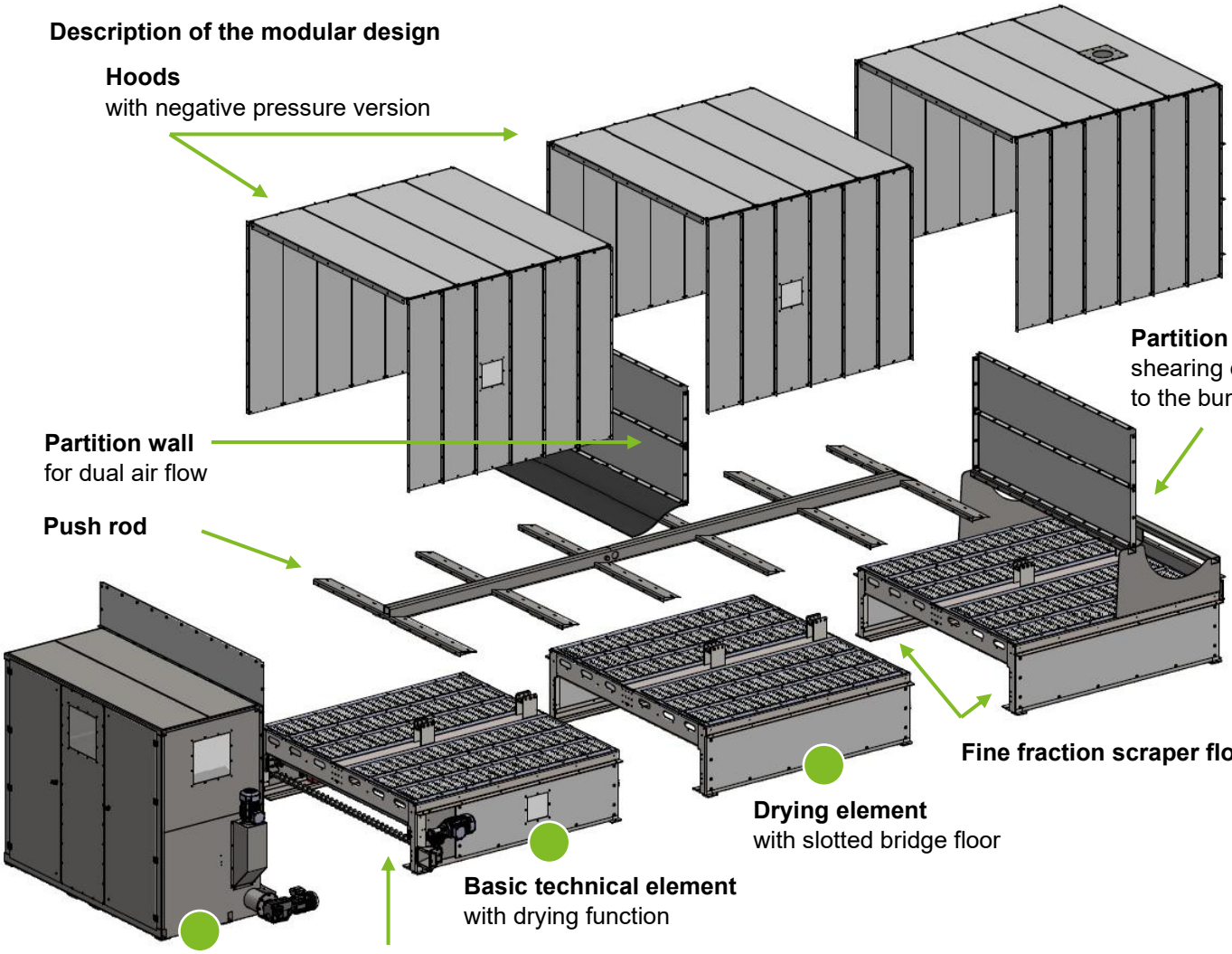
Description of the modular design

Hoods
with negative pressure version

Partition wall
shearing edge
to the bunker

Partition wall
for dual air flow

Push rod



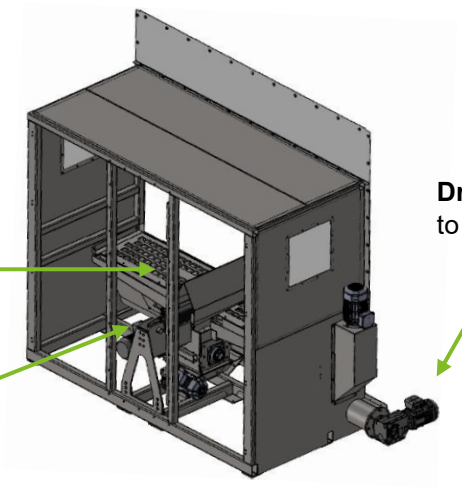
Fine fraction scraper floor

Drying element
with slotted bridge floor

Basic technical element
with drying function

Fine parts screw
Adding back the fines to the wood chips

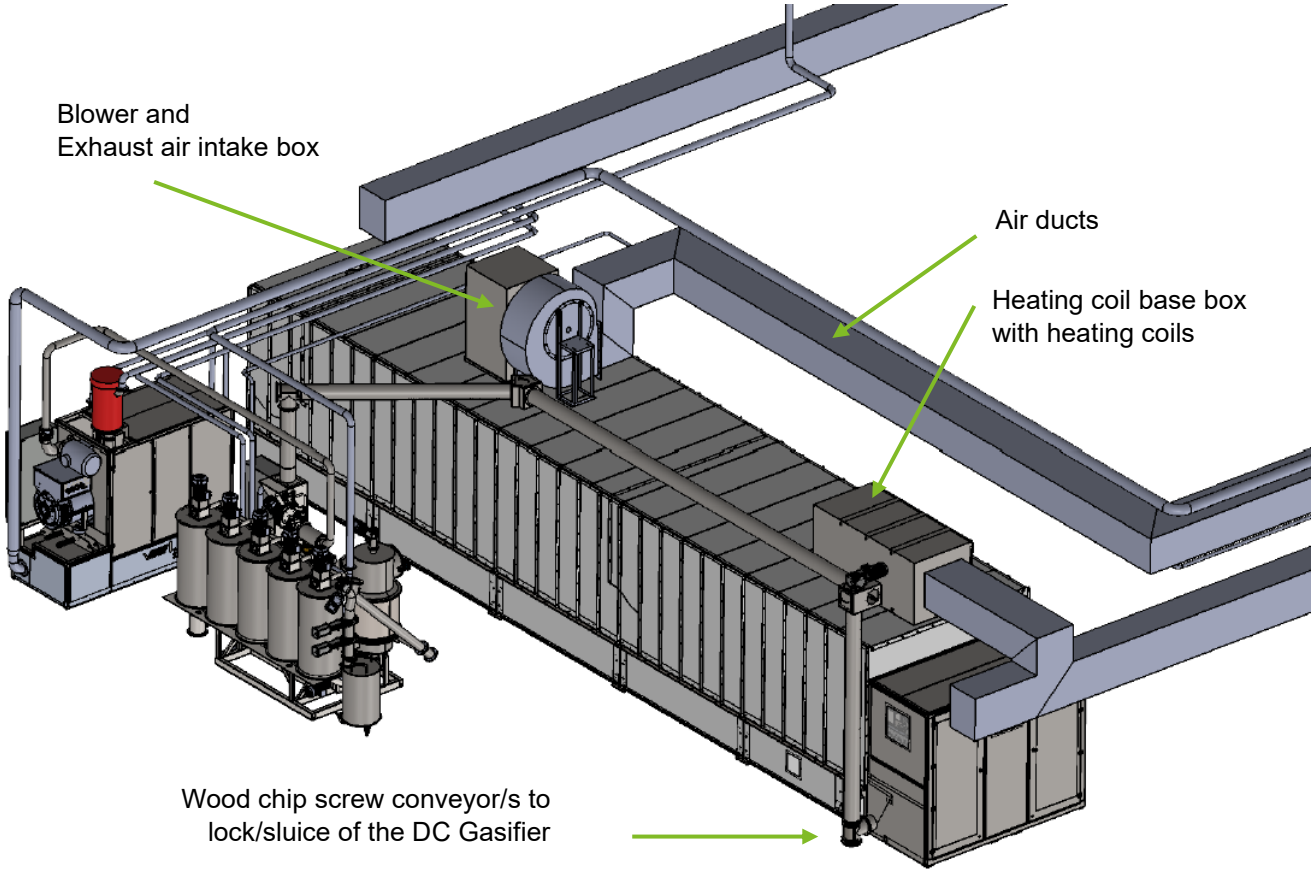
Discharge element
hydraulic power unit
and hydraulic cylinders
for push floor



Drive / screw conveyor
to DC Gasifier lock/sluice

Oversize grain separation
Sieving

Oversized grain shredder



Example installation: negative pressure version with directly flanged blower and conveyor system to the lock/sluice of the DC Gasifier.

In the overpressure version, drop sides are fitted instead of the hood.

Dimensions & Space requirements for installation

Version	OVERPRESSURE with drop sides	NEGATIVE PRESSURE with hood
Base plate to push floor	Height 0.72 m	Height 0.72 m
Wood chips dumping height on the drying element	Height 0.2 to 0.8 m	Height 0.2 to 0.6 m
Maximum dumping height on the bunker element	Height 3.0 m	Height 3.0 m
Space requirement system	Width 2.75 / 3.25 m Length project specific Height approx. 1.5 m	Width 2.75 / 3.25 m Length project specific Height approx. 2.65 m plus superstructure approx. 1.5 m
Space required for access	Allow at least 0.7 m space to the walls on both sides of the dryer. Allow at least 1.0 m for opening the doors of the discharge element.	

Dimensions & Space requirement of the elements

Version	OVERPRESSURE with drop sides	NEGATIVE PRESSURE with hood
Discharge element with hydraulics (to conveyor technology lock)	Width 3.25 m Length 1.20 m Height 2.20 m	Width 3.25 m Length 1.20 m Height 2.20 m
Basic technical element	Width 2.95 m Length 2.45 m Height 1.50 m	Width 2.95 m Length 2.45 m Height 2.65 m
Drying and bunker elements	Width 2.75 m Length 2.45 m Height 1.50 m	Width 2.75 m Length 2.45 m Height 2.65 m
Half drying and bunker elements	Width 2.75 m Length 1.225 m Height 1.50 m	Width 2.75 m Length 1.225 m Height 2.65 m

All specifications in this product data sheet are to be understood as guide values.

For information on the optimum fuel for VEE Synthesis Gas Systems, please see “VEE_272 Specification of wood chips G30 - 50”.

Example installation of two dryers in the negative pressure version with hoods.