

# Data Sheet 72.2

## Dryer Column



### Column

The dryer column of a Cimbría Continuous Flow Dryer consists of a dryer top, bottom and drying-/cooling sections.

### Drying Sections

The Cimbría dryer is modular and built in 3 widths, model A, B and C, with the same length and height.

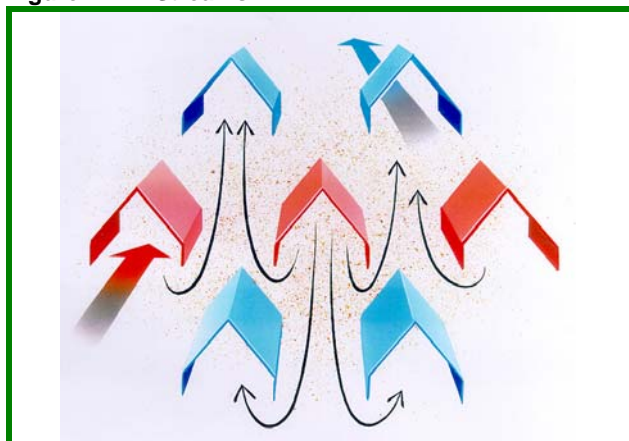
### Grain- And Air Flow In The Drying Sections

Cimbría drying sections are built from triangular air ducts mounted between two walls. The ducts are alternately tapered against both walls and open in the tail end. The alternate ducts are respectively connected to the hot air and the exhaust chamber, through which the air is distributed in the drying column.

In addition the ducts are displaced in relation to each other. Thus, each hot air duct is surrounded by 4 exhaust ducts and reverse with the exhaust ducts.

The cereal moves slowly down between the hot air and exhaust ducts and is ventilated from different directions.

**Figure 1: Air Streams**



The mutual stream between the cereal and the air ensures that the product is exposed to a changing airflow. The speed of the cereal flow through the column is controlled by the discharge.

### Measurements

The varying width, cubic content, and number of air ducts of the 3 dryer models appears from table 1.

**Table 1: Measurements**

| Sections                        | A-dryer   | B-dryer   | C-dryer   |
|---------------------------------|-----------|-----------|-----------|
| Height [mm]                     | 632       | 632       | 632       |
| Length [mm]                     | 2000      | 2000      | 2000      |
| Width [mm]                      | 3400      | 2170      | 1350      |
| Aluminium [kg]                  | 170       | 120       | 85        |
| Galvanised [kg]                 | 500       | 350       | 255       |
| Cubic content [m <sup>3</sup> ] | 2,89      | 1,81      | 1,08      |
| Hot air ducts                   | 7 + 2 x ½ | 4 + 2 x ½ | 2 + 2 x ½ |
| Exhaust ducts                   | 8         | 5         | 3         |

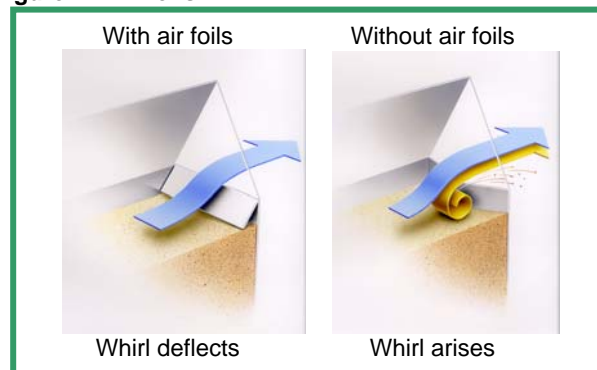
### Material

The sections are manufactured from either:  
2 mm galvanised steel plate according with EN 10142 or  
2 mm aluminium plate according to DIN 1725-part 1.

### Airfoils

Airfoils for the drying column can be delivered as extras. The airfoils are located in the open end of the exhaust ducts where they turn off the whirl of the air stream. Thus, enabling a higher amount of air when drying light and small cereals. The higher amount of air increases the drying capacity.

**Figure 2: Air Foils**



### Drying And Cooling

The Cimbría drying column is suitable for both drying and cooling purposes.

### Variable Cooling Zone

The Cimbría dryer enables a varying cooling zone. Thereby the cooling of the cereal can be adjusted to the varying ambient conditions. The cooling affects the storability of the cereal. The cooling zone is regulated with a shutter placed in the bottom part of the hot air duct.

**Figure 3: Cooling Shutter, Principle Sketch**



### Temperature Measurement

Two of the sections are equipped with temperature probes which are connected to the control panel. One measuring the maximal cereal temperature and one measuring the temperature of the outgoing cereal.

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