

## GRAIN DRYER 5 t/h

### Technical characteristics Grain Dryer Model Vesta 5 on gas fuel

The dryer can be operated in batch or continuous mode.

**Continuous mode** is used for very big farms or grain processing companies where big quantities of one type of grain are dried and capacity is the most important characteristic.

For continuous mode, drying complex should include cleaning, handling equipment, a silo for wet grain (mounted before the dryer in the technological process) and a surge silo (mounted after the grain dryer).

A silo for wet grain is required for continuous process of the dryer. It provides non-stop flow of the grain to the dryer. A surge silo is required for grain tempering. Grain tempering is used in Continuous mode of drying, for keeping the grain within 8-12 hours, during this period the moisture inside the kernel is going out to the surface, and the grain becomes ready for the second pass. Two bucket elevators (one for loading of the dryer, one for discharge) are used with a continuous dryer. Continuous mode of drying is performed on higher temperatures than the batch mode.

**Batch mode** is used for small farmers.

The dryer is loaded by a bucket elevator and passes through the dryer column/shaft so many times as it's required to reach the desired moisture. Two-three passes through the dryer provide the uniform drying of the grain. Loading and discharge is provided by a single bucket elevator. For batch mode the dryer should be fully loaded.

### Grain Dryer Model Vesta 5

Item №	Parameter	Value
1.	Technical capacity, t/h *	wheat 5 t/h maize 2,5 t/h sunflower 2,3 t/h rape seeds 2 t/h paddy-rice 2,5 t/h
2.	Volume capacity, m <sup>3</sup> corresponds to:	15,7 m <sup>3</sup> , corresponds to: wheat 12,6 tons maize 10,99 tons lentil 12,01 tons rape seeds 10,5 tons flax, camelina 10,99

3.	Power (electric), kW - without handling equipment (bucket elevators) - with handling equipment (1 bucket elevator)	12,05 kWt 14,25 kWt
4.	Maximum power of the air heater (heat power), kW	440
5.	Diesel fuel consumption per ton/% (removal of 1% of moisture from 1 tone)	1 kg
6.	Air consumption m <sup>3</sup> /h, not less than: (Air separator, exhaust fan)	25000
7.	Treated crops (experienced)	Wheat, rye, barley, soya beans, peas, buckwheat, maize, oats, millet, rape seeds, sunflower, rice
8.	Overall dimensions, mm, with bucket elevators and air heaters: Height Width Length	8500 3400 5350
9.	Mass, kg	7000

\* capacity depends on the initial moisture and impurities content.

Material is galvanized steel; no mild steel is used in the construction. The thickness of the metal varies from 1, 2 up to 1, 5 mm. To preserve stable and reliable structure of the dryer, special system of frames on the external side of the dryer column was designed and implemented.

### Complete set of delivery:



**1. Drier casing** is manufactured of anti-corrosion materials. The drier column comprises:

- an intake distributional device (air separator), which removes light impurities from the grain and distributes the grain inside the dryer;
- 1 axial fan 7, 5 kW;
- maintenance platform;
- fenced ladder.

The drier column has

- Intake area;
- Drying area;
- Cooling area;
- Discharge area with a discharge mechanism 1,1 kW and a frequency converter

**2. Electric equipment:**

- Control panel;
- Electric cables;
- High and low grain level indicators;
- Temperature sensors for heated air & used air;
- Grain temperature sensors in the heating area and in the cooling area.

The drier can operate both in manual mode and automatic mode. For batch mode – manual control is performed.

All grain handling mechanisms, being parts of the complex, are managed from the control panel. Automatic drying control with the precision up to 1°C.

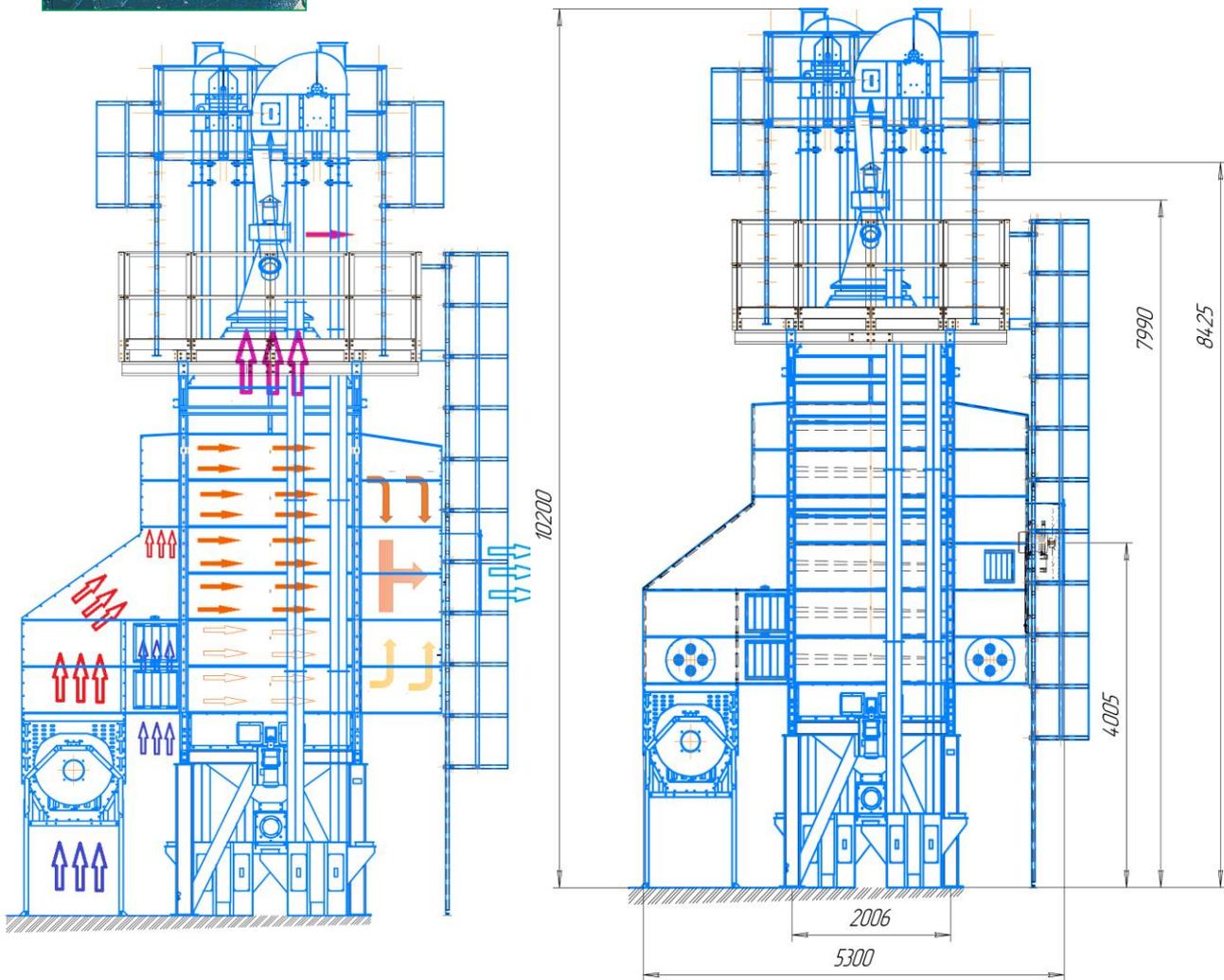
The dryer is equipped with an anti-fire system.

**3. Return valve** for the drier operation in a recirculation (batch) mode.

**4. Structure**



The system of air boxes allows the generated heated air to pass the entire length at a constant speed, and also increases fire safety. The variable cross-section of the boxes provides the same pressure of the heated air over the entire width of the dryer's shaft, thus ensuring high uniformity of grain drying.



**Heat exchanger is used in grain dryers operating on diesel fuel. As an option can be used with gas fuel dryers.**



Air heater (burner) with a heat exchanger prevents carcinogenic combustion products from contacting the grain.



The combustion chamber is made of heat-resistant stainless steel.

The operation of the heat generator is based on the following:

ambient air and hot air from the burner come from different sides that prevents heat generator from overheating. The heat generator with a heat exchanger is installed outside the grain dryer shaft, thus providing environmentally friendly drying.

