

Vertical mixer / homogeniser type VRM

Suitable for the mixing and homogenising of free-flowing products with different particle sizes and bulk densities.

Principle of operation

The design of the VRM mixer is based on the principle of creating multiple mass flows within the mixing vessel. The products to be mixed are first conveyed upward by a screw mounted in a central mixing tube. The mixing tube can be provided with one or more mixing heads. At the first mixing head, the conveyed product is partially added to the descending product flow. The same procedure takes place at the second and/or third mixing head. The remaining product is ejected at the top of the mixing tube.

By this system, in combination with the angle of the mixing head and vessel cone, one creates separate mixing zones resulting in a high differential mass flow. By applying the mixing heads, the VRM mixer can easily be used for the mixing/homogenising of small quantities of approx. 10-25% of the total mixing vessel capacity.

“Choke effect” for enhanced mixing quality

In order to stimulate the mass flow, one can combine the mixing screw with a pneumatic system, making use of the so called “Choke effect”. Air or inert gas can be dosed into the bottom of the VRM mixer via a special fluidisation cone. The fluidised product will then be elevated through the mixing tube. The filling degree of the mixing screw can be controlled by the amount of fluidising gas, in other words, the degree of mixing can be controlled by decreasing or increasing the “Choke effect”. This combination will give you an effective and enhanced mixing result.

Important features:

- Very short mixing cycle
- Relative low energy input level
- No segregation
- Large mixing capacities
- Easy installation in existing silos and hoppers
- Suitable for drying, cooling, degassing and agglomeration
- Capacities from 500 up to 100.000 litres

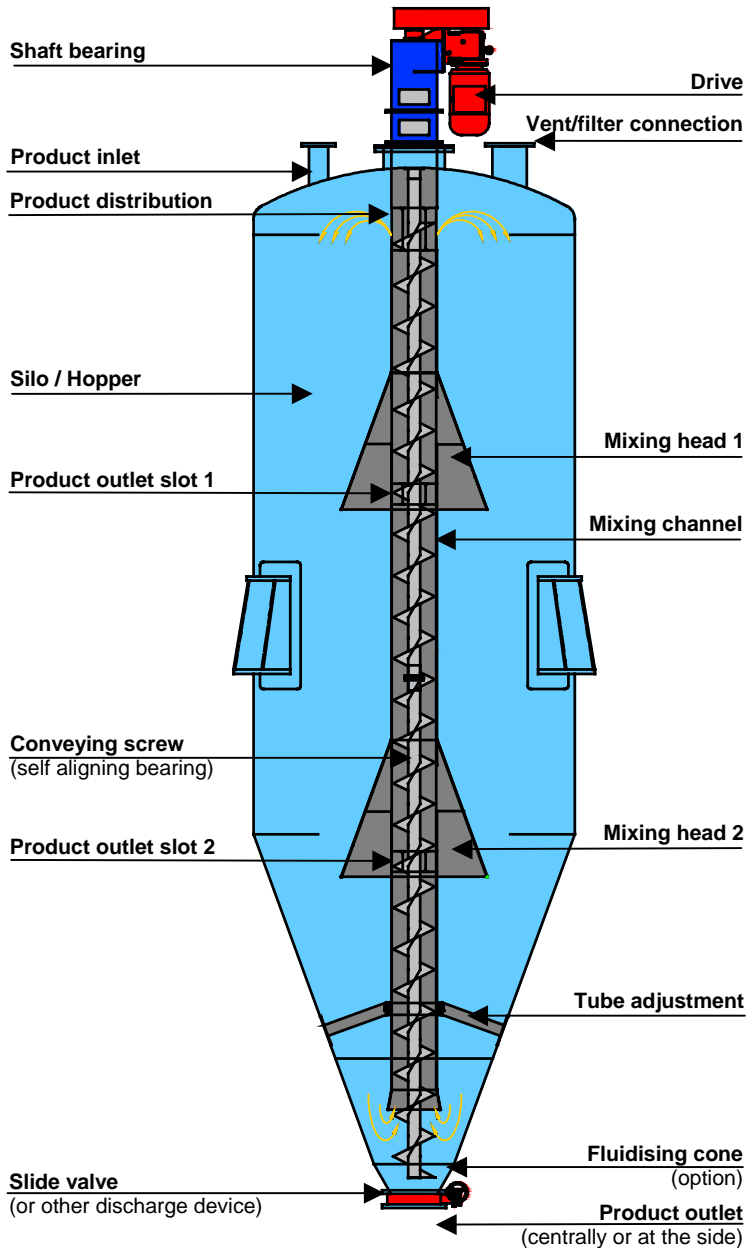


Principle of operation of VRM vertical mixer



VRM tube element featuring two mixing heads

VRM mixer assembly



Installation of two VRM mixers for the handling of fungicide



VRM mixer executions and options

- Fluidisation bottom to prevent bridge building.
- Dry or warm air dosing for intensive product drying or maintaining product at the required temperature.
- Cooling option for intensive cooling of product that is too warm; cooled dry air will then be introduced into the mixer.
- Agglomeration or adding of fluids that can take place during the mixing process by mounting spray nozzles in the vessel.
- Easy automatic cleaning and drying of the mixer can be achieved by fitting spray nozzles to the mixing screw and vessel.
- Several mixing head executions depending on mixer size and type of product.
- It is possible to combine above mentioned options to customer requirements.

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