

Data Sheet

MHD 2000/20



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The patented IKA MHD 2000 (mixing-homogenizing-dispersing) system is designed for mixing solids (powders, granulates) with liquids. It is predominantly used for fully continuous production processes. The MHD unit is particularly suitable for applications which meet at least one of the following criteria:

- The process should largely occur in a single pass.
- Up to 80% solid concentrations are to be incorporated in a single pass.
- A reaction occurs immediately after mixing.
- The liquid phase is already highly viscous.
- The amount of energy required for the mixing process is to be minimized.
- The solid is a granulate and is to be crushed mechanically as well as mixed.
- The amount of entrapped air is to be minimized.

The MHD 2000 has two horizontal liquid connections and one vertical connection for the solid material. The liquid phase is fed through the upper inlet normally by means of a positive displacement pump or from a pressurized feed system. The liquid is introduced, distributed across the MHD's concentric drum and dosed into the pre-mixing chamber through multiple apertures. The solid is fed vertically into the pre-mixing chamber from the top via a chute, by means of a dosing device (screw feeder, rotary feeder, etc.). The dry feed section and the wet pre-mixing chamber are separated by a feed screw. The liquid and solid phases come into contact in the definite proportions in the pre-mixing chamber. On leaving the pre-mixing chamber, the components are immediately dispersed by an optional rotor-stator system with high shear action, producing a high quality, agglomerate-free product in a single pass. The mixed product is discharged by gravity feed through the liquid outlet at the lowest point on the unit.

This unique wetting method was developed to minimize air entrapment, which can occur in solid/liquid dispersion systems based on the Venturi principle.

Throughput of the MHD is set by adjusting the dosage system. The amount of energy required, and thus the degree of mixing, is determined by the speed and the tool configuration chosen. For simple processes such as filling tanks or storage containers, volumetric dosage systems are generally adequate. In the case of fully continuous processes requiring high levels of precision, quantity controlled dosage pumps are used for the liquids and differential dosage scales for the solids. The results are generally accurate to within 0.5% or better.

The MHD 2000 mixing system is available in seven different sizes with throughput volumes of between 60 and 40,000 l/h. All sizes operate at the same rotor peripheral speed, thus ensuring the most reliable conditions for scale-up.

Technical Data

Total capacity	7000 l/h
Solids capacity (max.)	2800 l/h
Motor power	15 kW
Motor speed	3000 rpm
Tip speed	23 m/s
Speed regulation possible	yes
Mixing tools	variable
Single mechanical seal	yes
Double mechanical seal	yes
Flame proof possible	yes
Cleaning	yes CIP
Sterilisation	yes SIP
Inlet solid	DN 80
Inlet liquid	DN 50
Outlet	DN 65
Max. solids capacity	2800 l/h
Ident. No.	000MHD200020

