

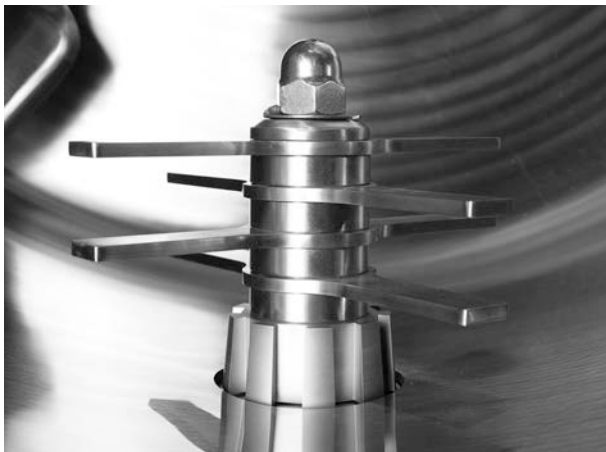
A safe choice

Add-on options for mixing systems – part 1

Vertical and horizontal mixing systems are well-proven for bulky materials and applications in the mechanical process technology. Therefore they are installed in almost every known production process and for nearly all components. However, it often needs specific details and add-ons to customise the mixer for a specific application with its typical characteristics.

MTI provides various chopper knives in special sizes and geometries to match the demands of each application, also for highly abrasive products or fibers. Numerous knife sets differing in its number of blades and material are available to comply with almost every mixing requirement.

Chopper



Universal mixer Uni tec® with chopper

Every MTI high performance mixer is designed for an absolute homogeneous mixing of the substances in use. Special applications do not only require material friction to close up clusters or agglomerates in an adequate time, also the installation of an additional chopper is necessary. The chopper, mainly consisting of motor, shaft with bearing and a set of mixing blades being tangentially installed in the vessel, is most appropriate for this function. Its position in the vessel is adapted to the mixing process. The chopper tools are in permanent contact with the mixture and the force-guided product can be well dispersed.

Addition of fluids



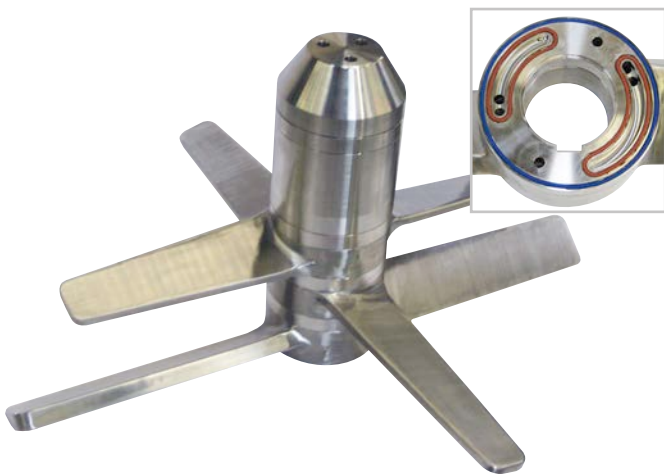
Lance in the vessel wall

In many products and processes liquids with most different material properties and quantities have to be added. The target is to have a directed feed into the vortex with a minimum wetting of the vessel surfaces. This is the only effective way to prevent product stickings caused by an often dusty atmosphere inside the mixing vessel, sticking otherwise possibly having an uncontrolled impact on the mixing result. In its mixer layout thus MTI focused on an addition system directly spraying the fluid into the mixture.

By means of a lance set into the vessel wall or lid the fluid components are sprayed directly into the vortex.

Dependent on the arrangement of this lance they can either be led to the mixing tools or into the operational area of the chopper to be immediately homogenised. Individual spraying nozzles with single or multiple material supply are available, having a special non-drip valve preventing the contamination of the nozzle. Measuring systems installed in the feeding line or pressurized scales allow a precise dosing and an automatic, reproducible addition and documentation even of highly viscous and possibly pre-heated fluids.

Tempered mixing tools



Multiple tool configuration

The MTI expert engineers also found a solution to meet the constantly growing demand for mixing systems handling very temperature sensitive materials or having an extremely precise product temperature guidance.

Each mixing tool has to ensure a directed material flow with a vortex shape to achieve the required homogeneity of the entire batch. This kind of work material circulation generates heat that has to be dissipated to avoid an influence on the mixing material or its components, e.g. building cakings on the hot surface of the tools or densifying resp. agglomerating parts of the mix. Certainly a vessel can be equipped with a double jacket for tempering or cooling. However, caused by friction of

the mixing tools directly in contact with the mixture, a considerably higher temperature may occur which has to be reduced accordingly. For this purpose MTI developed a tempered mixing tool system in modular design, to eliminate the typical disadvantages of monobloc blades and the weight and space restrictions related to them.

At the same time these mixing tools ensure a maximum cooling efficiency as they have a force-guided cooling circuit and guarantee a tempering even up to their tips. The configuration allows nearly all geometries and can also be equipped with a surface coating against wear. As the water is supplied through the drive shaft a standard sealing system with standard components is used which can be easily replaced by the customer when it is worn. The temperature is controlled by the differential temperature monitoring between cooling water inlet and outlet and can be taken as an operational parameter for precise and reproducible process conditions as well as for full documentation purposes.

The highly qualified MTI engineers are well prepared to present a tailor-made solution for each process – to fulfill all your requirements to achieve a state-of-the-art quality of your product.



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