

Technical information

Vector kinematics - a new dimension of dynamic cleaning

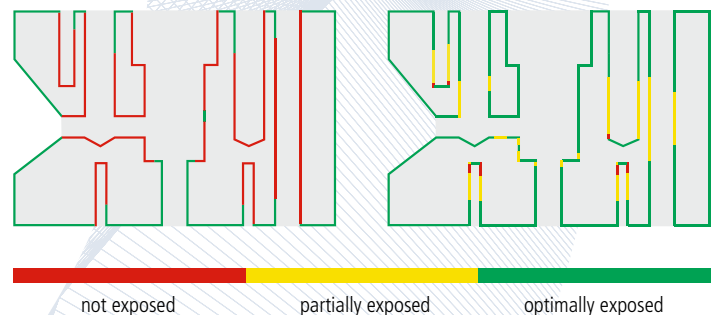
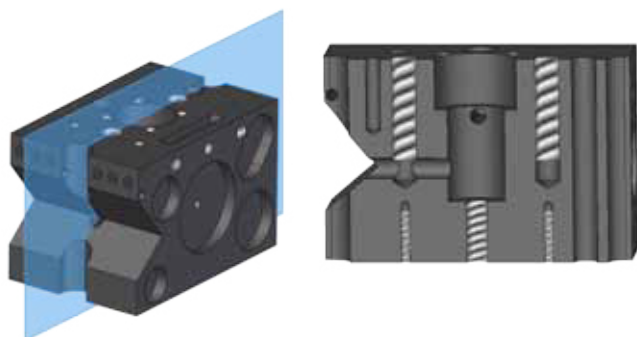
Since their entry into the aqueous parts cleaning market, MAFAC cleaning machines have set global standards in terms of cleaning quality, efficiency and application diversity. The patented process technology of counter- or co-rotating movements of spraying system and basket receptacle system is a crucial component of this corporate success. It is based on the understanding that cleaning with motion is more efficient. Consequently, all MA-

FAC machines work systematically with targeted turbulences. The combination of mechanical components, temperature, cleaning additives and time, they clean component surfaces well and, at the same time, efficiently. In continuing the development of this kinematic system approach, MAFAC now presents a new cleaning process, the MAFAC vector kinematics - a new dimension of dynamic cleaning.

With the MAFAC vector kinematics process, there is even more movement to clean and dry components. In contrast to the process in a rigid nozzle system, the workpieces are not hit at a specific angle. The new method permits optimal angular variance on the surfaces of the components. The nozzle tube performs a rocking movement about its own axis through 35° to either side, while the basket receptacle system rotates synchronously at an optimally adapted speed. The maviatic controller of the machines calculates the movement of the basket rotation beforehand, whereby co- and counter-rotation are both possible. This coordinated interaction of nozzle tube and basket movements leads to a targeted and, depending on the part geometry, up to 60 % higher application on the component surfaces.

In particular, manufacturers of complex workpieces with geometries and surfaces that can be reached in different ways benefit from this innovative process. The various angles of impact lead to significantly less spray shadows, so that excessive cleaning of easily accessible component regions with valuable resources is avoided. The complete cleaning process is more efficient and economical, which is particularly advantageous in view of the requirements for constantly improving cleanliness and increasingly tighter budgets. In the future, users will also be able to react with significantly greater flexibility to a wide range of parts or to changes in the part program: Thanks to the high angle variance, a large variety of significantly different workpiece batches can be processed - from standard operation to sophisticated and varied angular application. The new

MAFAC vector kinematics permits an effective execution of many cleaning tasks. Stefan Schaal, Head of Development and Design at MAFAC, is convinced of the pioneering importance of vector kinematics: „With the vector-kinematic movement of the nozzle and spraying system, we have succeeded in taking a first step into a new dimension of dynamic cleaning. The process permits its users to achieve the speed, quality and cost-effectiveness that will be required in industrial parts cleaning in the future“. In its current form, the new technology is a promising start that offers great potential for numerous further developments. „The innovation approaches of vector kinematics are manifold. We are still at the beginning, and are moving into an exciting time.“



Workpieces with complex geometries such as drilled holes and undercuts, in particular, benefit from the targeted turbulences of MAFAC vector kinematics.

In cleaning processes with a rigid nozzle system, the partial regions which are not exposed (red) outweigh those which are optimally exposed (green).

Thanks to angular variance, the MAFAC vector kinematics leads to a significantly better exposure of the components. Optimally (green) and partially (yellow) exposed regions clearly outweigh unreached locations (red).