

VECTOR KINEMATICS BOOSTS CLEANING EFFICIENCY

Turbex has introduced optional functionality for two of its industrial washing machine models, Java and Palma, that increases the efficiency of washing components, improves their cleanliness and widens the range of applications that can be undertaken. Called vector kinematics, the patented feature is in addition to process-specific, targeted cleaning tailored to large-scale washing of families of similar parts.

The new vector motion extends an already advanced global cleaning method, also patented, whereby the basket of components and the aqueous spray system can be made to rotate in either the same or opposite direction, or both sequentially, within a program. What the kinematics adds is even more relative movement, shortening the washing time or increasing cleaning and drying effectiveness within the same cycle.

In contrast to a process employing an array of nozzles that are fixed in position, workpieces in the basket are not sprayed from one specific direction but from many angles, as the spray bar supplying the nozzles performs both its pre-existing rotation and a new rocking movement around its own axis by 35 degrees to either side. The basket co- or counter-rotates synchronously at an optimal speed calculated by the machine control to maximise penetration of the aqueous solution to awkward areas inside and on the surface of the components.

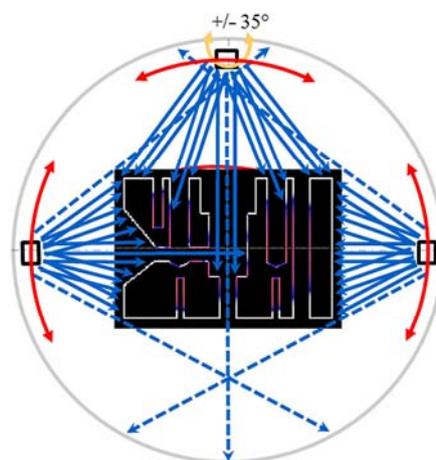
Tests have proved that this coordinated interaction between the spray bar with kinematics and movement of the basket achieves considerably more effective component cleaning. Compared with rigid nozzle systems, the number of particulates remaining on processed parts is reduced by up to 70 per cent for any given set of four cleaning parameters defined in the so-called Sinner's circle - chemistry, temperature, contact time and mechanical power - which determine the overall efficiency of any cleaning procedure.

In particular, manufacturers of workpieces with complex geometries will benefit from the innovative process. The numerous angles of impact lead to significantly fewer spray shadows, so excessive cleaning of easily accessible component regions is avoided. Valuable resources are saved and the entire cleaning process is more efficient and economical.

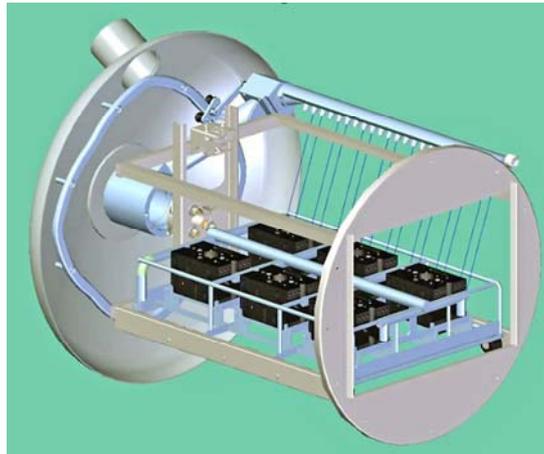
Undercuts and blind holes are easily reached during spray-cleaning, whereas previously this may only have been possible by flood-cleaning.

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Two photographs:



Thumbnail: ± 35 -degree rocking of the spray bar supplying the nozzles increases penetration of the aqueous solution to awkward areas inside and on the surface of components.



Main photo: The Java and Palma models within the Turbex range of aqueous cleaning machines now have the factory-fitted option of vector kinematics to enhance the effectiveness of component cleaning.

On behalf of: Turbex Limited, Unit 1, Riverwey Industrial Park,
Newman Lane, Alton, Hampshire, GU34 2QL.
Tel: +44 (0)1420 544909. Fax: +44 (0)1420 542264.
Email: john.huntingdon@turbex.co.uk
Web: www.turbex.co.uk
Contact: John Huntingdon, Managing Director.

Issued by: *THE RIGHT IMAGE Ltd*
PO Box 42, Twickenham, TW1 1BQ
Tel: +44 (0)20 8891 0603
Contact: Chris Wright
Email: chris@therightimage.net
Web: www.therightimage.net