Kadia unveils new brush deburring machine

Germany-based Kadia Produktion GmbH, a honing and deburring specialist with a factory in Nürtingen, has introduced a standard brush-type machine for the deburring of crank-shafts or camshafts. Before a crank-shaft reaches the finishing machine (for finishing the bearing journals), any loose particles or flaky burrs must be removed from it, otherwise they could enter the engine and cause damage.

The most common solution for this process is a robot to manipulate the crankshaft, combined with a deburring 'console' that has various brushes or discs. A complicated sequence of movements has to be programmed, which is a time-consuming operation. Once programmed, the robot takes 2min to deburr each crankshaft, so engine manufacturers often operate several deburring cells in parallel to cope with the quantities.

With this in mind, Kadia has introduced the EC-Brush, a standard brush deburring machine that is flexible, enables short cycle times and requires little support and maintenance. The machine has a total of five programmable axes: rotary drives, with right/left rotation for the brush and the workpiece, which is clamped against a 'centre' by a three-jaw chuck (the brush rotates at about 500rev/min, the crankshaft at 30rev/min); linear axes also provide the brush's back/forward and lateral oscillation movement; while a traversing range for the centre allows different crankshaft lengths to be clamped (varying from three- to six-cylinder engines) and processed in any order. Loading and unloading can be carried out automatically, semi-automatically or manually.

The deburring brush is equipped with abrasive nylon fibres of differing lengths to accommodate the eccentric design of the crankshafts. Only one operation is required, as the shaft is completely 'immersed' in the brush, ensuring that the particles and flaky burrs resulting from drilling and grinding are removed. A choice of fibre type accommodates different crankshaft materials.

Kadia's managing director, Henning Klein, said: "The time required for deburring a crankshaft is about 20sec, so cycle times of about 30sec — including loading and unloading — are possible. As this is a standard machine based on a modular design, the delivery time is significantly shorter than for a special solution." This compact machine has a footprint of just 2.6 × 2.3m.

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