

Nordrach, October 2009

**In time for the EMO 2009, the Automotive business division is pleased to announce further new developments which underline the reputation of JUNKER as a technology leader:**

**Production line expertise: Complete grinding of camshafts**

Early this year, one of China's largest vehicle manufacturers realised the complete grinding of 4-cylinder camshafts for passenger car engines using a total of five JUNKER machines. Two JUPITER 500 centreless cylindrical grinding machines pre- and finish grind the bearings and journals using CBN multiple wheels in a plunge grinding process. The cam geometry of twin cams with multiple wheels is ground using the two JUCAM 6Ls for non-circular machining and the shaft ends are created by the CNC angular plunge-cut external cylindrical grinding machine EJ 31. Designed for a total of seven machines, the high-end concept achieves a cycle time of just 20 seconds. This line concept is suitable for the highly efficient mass production of camshafts. Employing continuous CBN technology, it guarantees a high dimensional and surface quality with extremely short cycle times.

**JUMAT 6 L: Grinding of shafts for wind power gear units**

JUNKER's platform 6, JUMAT CBN cylindrical grinding machine is the ideal solution for meeting the grinding requirements for large shafts. The modular system has been designed for the cylindrical grinding of precision parts. These include components for engines, transmissions and hydraulic systems as well as shafts for electric motors, compressors and wind power generators. The system is equally suitable for the machining of printing press cylinders and rail vehicles axles.

With a chucking length of 2,800 mm, the JUMAT CBN external cylindrical grinding machines can grind diameters, shoulders, plunge-cuts, tapers and chamfers on every type of shaft. JUNKER machines also facilitate the realisation of customer-specific applications.

The machines are equipped with an absolute measuring system which is able to traverse the measuring head along the Z-axis into every programmable measuring position, thus saving time and ensuring quality in one-piece-flow production.

JUMAT machines are not only used in large-series production but are especially suitable for prototype, single-piece and small-series manufacturing.

This machine type is set apart by its high quality, process reliability and flexibility.

**Platform 4 – for top precision and efficiency**

Platform 4 will be available for the machine types JUMAT, QUICKPOINT, JUCRANK and JUCAM, all of which can be obtained in both 4S and 4L versions. Thanks to the wide variety of wheelhead versions, the new platform 4 enables the realisation of complex grinding concepts – tailored precisely to the customer's workpiece. The use of two slides also gives the user the option of operating workpieces (such as a 4-cylinder crankshaft) in parallel, in a similar process to that currently used with the JUCRANK 6S 10-10 (platform 6). For this reason, platform 4 represents an interesting concept for a multitude of sectors, from the automotive industry and suppliers all the way through to mechanical engineers, the electrical industry and environmental technology.

Platform 4 supplements the already existing Evolution<sup>2</sup> platforms and offers fundamental advantages to customers such as an identical guide system, a large number of identical parts and a uniform, round cover shape with the EJ-OP operator panel. Evolution<sup>2</sup> increases output by reducing cycle times, which is achieved by means of shorter and superimposed travel within the machine. Even the footprints of the machines are reduced thanks to their compact design.

**In addition to new machines, JUNKER Automotive continues to provide its customers with innovative grinding concepts for special workpieces:**

**JUMAT 3000/60: Grinding of balance shafts**

The three-spindle machine allows the complete machining of complex workpieces with CBN grinding discs. Using a balance shaft as an example, the machining is performed in three operations:

**Operation 1:** Plunge-cut cylindrical grinding of bearing and journal diameters and shoulders

**Operation 2:** Cylindrical grinding of bearing diameters

**Operation 3:** Cylindrical grinding of journal diameters including transitions

Since workpieces are clamped only once, this machine concept ensures a high level of production quality.

**EJ 33: Diameter and shoulder grinding of shafts**

The EJ 33 double-spindle grinding machine is used to grind shafts of all types and up to a clamping length of 450 mm with top quality results.

Plane surfaces are machined by plunge-cutting with two grinding discs (CBN or corundum).

Unlike machines capable of plunge-cutting only, the EJ 33 machine allows the workpiece to remain clamped throughout the entire process, which makes 180° rotation and reclamping between machining steps obsolete.

Time savings and quality improvement, i.e. enhanced concentricity, are the main benefits of this machine concept.

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**Production line expertise: Complete grinding of camshafts with JUPITER 500, JUCAM 6L und EJ 31**



### EJ 33



### Platform 4



### JUMAT 6L

