



## WorkNC - “a licence to save money” say Formenbau Rapp



### Highlights

- **Formenbau Rapp wanted to achieve unmanned machining of its electrodes.**
- **Already a WorkNC user, it installed SESCOI's Multi Part Machining module.**
- **MPM raised productivity by a further 20% and allowed safe unmanned machining of multiple electrodes. The firm aims to use the same methods on its mould inserts.**

**Industry : Automotive & consumer products**

**Activity : Mould manufacture**

**Employees : 18**

### Specialist mould manufacturer

Formenbau Rapp has made a name for itself as a manufacturer of complex injection moulds. The firm, from Löchgau north of Stuttgart in Germany, specialises in tools for two or more components. Additionally, the company manufactures single part, multi-cavity, rotary and multi-stage tools. Eight years ago Managing Director Markus Bay, and co-directors Volker Schmid and Werner Mühleisen, took over the firm, which had been trading for over 25 years. Since then they have carried out a continuous programme of modernisation - starting from 3D CAD via CAM

right through to the machine tools, aiming for full integration and optimised data flow.

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**"We were able to increase the productivity of electrode milling by 20%. WorkNC and MPM are essential to our company and are a licence to save money."**

Markus Bay, Managing Director  
Formenbau Rapp GmbH.

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### WorkNC raises productivity by 50%

Markus Bay installed WorkNC in 1998, "We realised that we needed 3D CAD/CAM to meet our design and machining requirements. WorkNC offers simple to use interfaces that work faultlessly with our CAD software. Compared to our previous 3D system WorkNC has made it possible for us to raise productivity in this area by over 50 percent." The automatic features in WorkNC enable the machine operator to rapidly generate a



complex CNC programme from preset parameters and strategies.

### **Integrated electrode holders**

Formenbau Rapp is continually striving to achieve higher productivity and, as part of this policy, introduced an integrated holder and pallet system for manufacturing electrodes, from System 3R. This saves expensive reloading and resetting of the zero point for each electrode, considerably shortening the set-up times on the machine tools.

### **Aiming for unmanned operation**

For machining graphite electrodes the company wanted to achieve unmanned operation. The System 3R pallets enable the machine to be set-up just once with six electrodes which are then processed as a whole. To control the machining, each pallet station and each milling operation was allocated a number. This meant that the machine could run for several hours, but there were problems, as Markus Bay explained. "For a six station pallet, the machine operator had to take up to 60 different programme numbers from the network to the machine, link them together and programme the zero point movements. The risk of mistakes due to transposed digits etc. was relatively high. Collisions with the electrodes on the pallet also occurred repeatedly, making unmanned machining unreliable."

### **Productivity up 20% with MPM**

Sescoi's Multi-Part Machining (MPM) module for WorkNC was just what Markus Bay needed. By adding MPM to WorkNC, the software considers the whole pallet as a single component, creating one integrated NC programme. "The investment in MPM paid for itself very quickly", said Markus Bay. "We were able to increase the

productivity of electrode milling by 20%".

### **Fewer tool changes and faster toolpaths**

With just two days of training and support from SESCOI, Markus Bay and his employees had completely understood MPM. The individual electrodes are each programmed in WorkNC before they are grouped in projects of up to six electrodes on each System3R pallet. Once MPM is initialised, WorkNC checks the project and automatically allocates and uses each tool across all the electrodes. Similarly, it optimises the toolpath across the whole pallet and finally postprocesses the integrated toolpath. The result is considerably fewer tool changes, shorter and faster toolpaths and increased accuracy.

### **Safe and flexible**

In MPM great emphasis is placed on safety. The positions of the individual electrodes can be represented simply in the programme, which enables the experienced operator to easily verify the toolpath. In addition, to avoid collisions, MPM automatically determines and uses a safe height for rapid movement across the pallet. MPM is able to react flexibly to changes or reworking of a component. Once the individual changes have been made, it can quickly and automatically generate the new optimised cutterpaths.

### **Licence to save money**

After using the software to successfully mill electrodes, Markus Bay plans to use MPM for machining steel mould inserts. He has invested in a new HSM machine, equipped with a 54 station tool changer, and integral tool measurement and breakage detection. For Markus Bay this is a basic prerequisite for unmanned

operation. Unrecognised breakage of a tool would be disastrous. The consequences would destroy all the other tools and components. He now considers that he will be able to achieve further productivity increases by integrating tool measurement with MPM and the multiple loading of the steel inserts on pallets. He concluded, "WorkNC and MPM are essential to our company and are a licence to save money."

