

# ETMM

EUROPEAN TOOL & MOULD MAKING

## THE MAGAZINE

1

www.etmm-online.com  
Volume XX | Jan./Feb. 2018  
ISSN 2194-7589  
€ 12.00

### SPECIAL Metav Preview

Trade show preview and  
product highlights

Page 22


**LOGIQ4FEED**  
HIGH FEED MILLING

PRODUCT FOCUS

### Tools for smart pro

Page 2

1 / 77



**D** 70475 Psdg  
DataM Services · 97103 Würzburg  
Deutsche Post

Frau Susanne Kromer  
SUXES GmbH  
Endersbacher Str. 69  
70374 Stuttgart

\*0004795646 \*\* 1-2/18\*

### Markets

Recruitment problems  
slow down Bulgarian industry

Page 10

### Tech Focus

Low-deformation workpiece  
clamping

Page 42

ETMM

# 2018

### TOOL AND MOULD MAKING IN 2018

What to expect and which  
trends to follow this year

Page 14

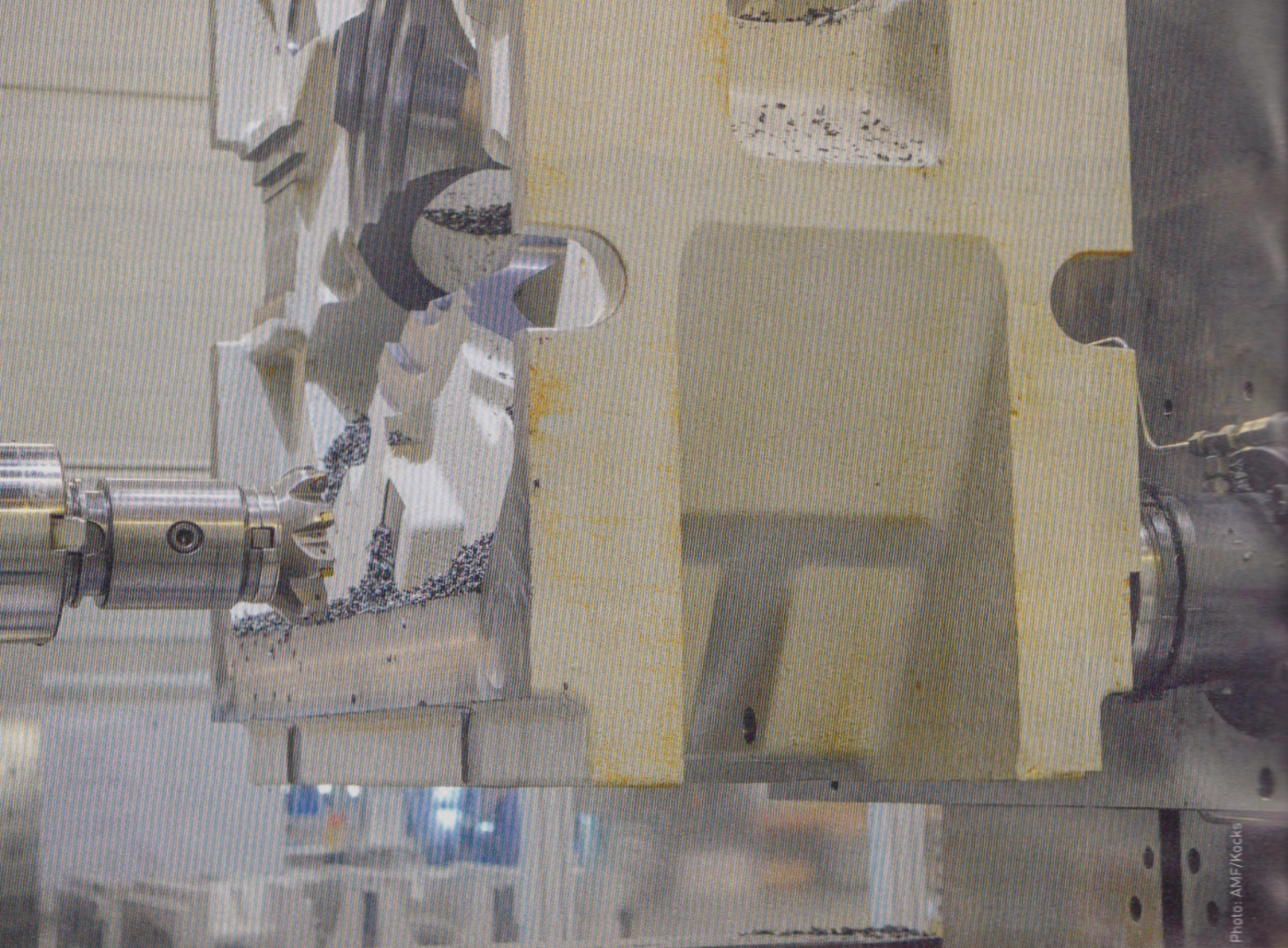


Photo: AMF/Kocks

AMF's extra-strong K40-H modules realise pull-in and closing forces of 40 kN and a holding force of 105 kN at a diameter of 148 mm.

## NEUTRAL-POINT SYSTEMS REDUCE TOOLING TIMES

A new processing centre is the machine of choice for a firm manufacturing components on **neutral-point systems**. As a result, production times can be reduced by more than 80 %. The new flexibility is an advantage in manufacturing replacement parts.

Jürgen Fürst

**W**hen one of the technology and world market leaders in equipment for tube, wire and bar mills optimises its production, this sometimes brings astonishing results. A new processing centre is the machine chosen by the established firm Kocks for its production of components on AMF neutral-point clamping systems. "With AMF neutral-point clamping modules, we have raised the flexibility of our production very substan-

Jürgen Fürst is CEO of the advertising agency & management consultancy Suxes GmbH in 70374 Stuttgart. Further information: Andreas Maier GmbH & Co. KG, Marcel Häge, Tel. (00 49 - 7 11) 5 76 62 64, haege@amf.de

tially," emphasises Carsten Aeilts, works manager at the Kocks Manufacturing GmbH & Co. KG in Bremen. As a result of using a new production centre in combination with the AMF system, production times for stand components have been reduced to about only one fifth.

### COMPONENT CLAMPING ACTIONS REDUCED FROM NINE TO THREE

"The AMF neutral-point clamping modules have a large share in this," says Kai Staschen, team leader in machining at Kocks. Some parts no longer need to be clamped nine times, as was previously the case, but

only three times. And that, too, is now much faster," Staschen adds. The tooling time saved goes into benefiting from the productivity of the new Mazak processing centre, but also from that of other machines.

The Kocks frames, equipped with three adjustable rollers, form the core of the tube works. The 3-roller technology, developed by Kocks for the manufacture of wire and rod steel and also of tubes, enables twist-free rolling of quality steels, special grades, super alloys, sintered materials, and also nonferrous metals and their alloys. The experience and the know-how of the firm go into the frames.

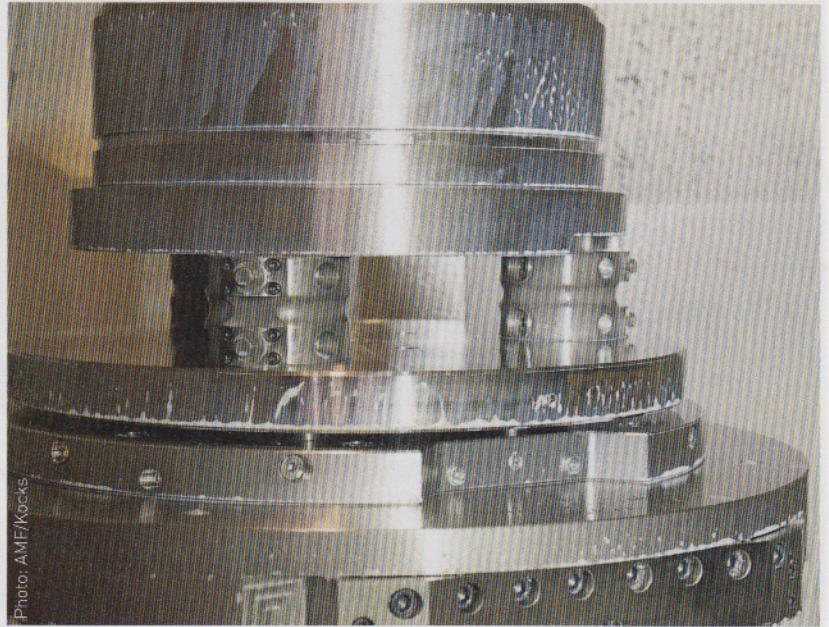
Their reliability and long service lifetimes are decisive factors for productivity in manufacturing and for the quality of the final product. The tube works therefore produce, for example, round material rolled from 160 mm diameter to 40 mm. Likewise, Kocks builds 3-roller stretch reduction mills for the production of seamless and welded tubes. Here, too, the frames play the decisive role.

### REPETITION ACCURACY IN CLAMPING BETTER THAN 0.005 MM

The new Mazak Integrex processing centre comes with a machine table on which large-diameter workpieces can be turned. Because the K20 module from AMF is also approved for milling/turning processing at up to 2200 min<sup>-1</sup>, the neutral-point clamping module was again the preferred solution here. It consists of a 48 mm high baseplate with four AMF K20 built-in neutral-point clamping modules. These realise pull-in and closing forces of 20 kN each and holding forces of 55 kN each. The repetition accuracy in clamping is better than 0.005 mm. With diameters of 112 mm in each case and additional smoothed supporting pieces in the station, a large supporting surface is created. Nevertheless, these modules, with a mounting depth of 34 mm, are very compact and take up only a little of the total mounting height on the machine table. "For this reason, the baseplate can be kept relatively flat," explains Michael Gödecke, sales engineer for clamping technology at AMF.

With milling, turning or drilling, further components such as cams, shafts and covers can be processed for the roller works. It is thus possible to create complex lubrication grooves or carry out demanding boring work. It can take three hours to process some workpieces, which are clamped directly using AMF clamping bolts. "We are very happy to support our customers in determining the optimal positions for the bores for clamping bolts," says Gödecke. 15 to 20 tools are used. The machine collects these directly from the tool magazine and changes them automatically. At a total of twelve pallet stations, further core elements wait, in various stages of completion, for processing. At a set-up station, these are prepared in parallel to main times.

To open the clamping modules, a normal hydraulic unit is used. For the milling/turning application, however, this is additionally equipped with controls and a simple-to-read stop/go light signal. This signals the clamping status in the clamping station and releases the workpiece for processing. In total, three further clamping actions are now necessary for the completion of



The AMF neutral-point clamping modules have a large share in the drastic shortening of production time.

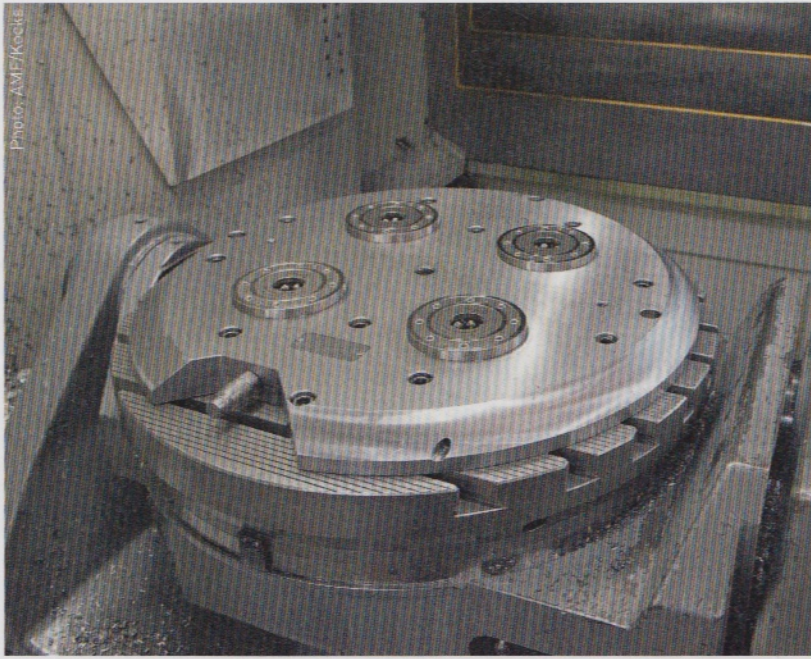


On the huge Union drilling installation for heavy machining, AMF's extra-strong K40-H modules are used for direct clamping of the workpiece.

the core elements. Besides the set-up time which is saved this way, error sources are reduced, since these can always occur in any clamping action.

### SETTING-UP TIME IS SAVED AND ERROR SOURCES ARE REDUCED

Because the AMF neutral-point clamping modules produce such convincing results in reducing set-up times, Kocks has now applied this technology to further machines. These include a huge Union drilling installation with a machine table of 2000 mm × 2000 mm and a clamping bracket with dimensions of 1000 mm × 1000 mm × 2000 mm. For this heavy machining, AMF's extra-strong K40-H modules are used for direct clamping of the workpiece in the construction station, and also in a single station for receiving

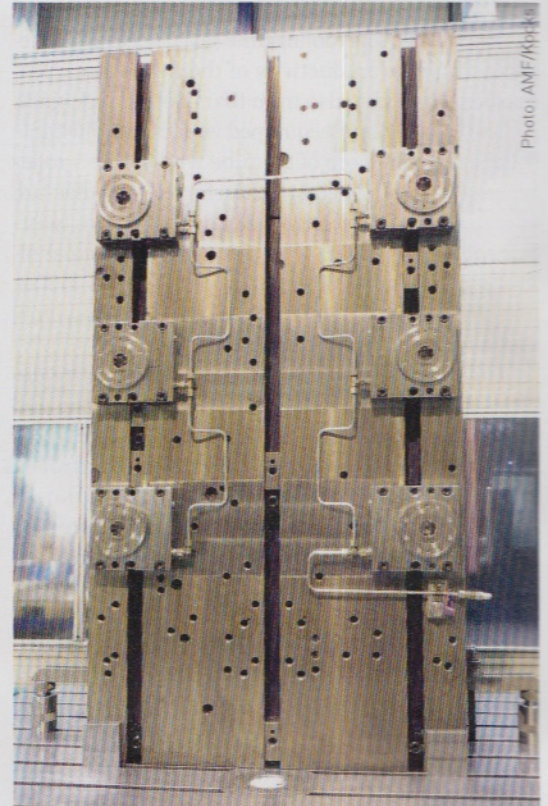


On the DMG machine, the flexibility gained with AMF's K20 neutral-point clamping system is particularly obvious.



Because re-clamping is so simple with AMF neutral-point clamping, there is no problem inserting unplanned replacement parts requiring immediate manufacture into the production sequence.

base plates or jigs. These realise pull-in and closing forces of 40 kN each and a holding force of 105 kN at a diameter of 148 mm. The modules are opened hydraulically and lock mechanically by spring tension. During this, the module is clamped without pressure, so the pressure pipe can be removed at any time.



For heavy machining, AMF's extra-strong K40-H modules are used.

There is an unusual special feature of the K40 modules for direct clamping of workpieces. With a height of 300 mm, they are high enough for five-side processing of a workpiece clamped directly with clamping bolts, and the table does not represent an interfering contour. In addition, two of the four modules can be adjusted for height. Using a thread with a pitch of 0.75 mm, the modules can be adjusted in 0.05 mm steps at a diameter of 150 mm. This enables a total height compensation of 5 mm (+/- 2.5 mm) to be realised. Staschen welcomes this: "This raises our flexibility in production yet again."

### FLEXIBILITY RAISES PRODUCTIVITY WITH A THIRD SHIFT

On a further processing centre from DMG, the main products are bevel gears and levers. "Here the flexibility gained with AMF's K20 neutral-point clamping system is particularly obvious," Staschen reports. Because re-clamping is so simple with neutral-point clamping, there is no problem inserting unplanned replacement parts requiring immediate manufacture into the production sequence. Subsequently, the part whose processing was interrupted is simply clamped again for further processing without any significant setting-up times resulting. And the clamping team leader mentions yet another aspect: Now, at the end of the second shift, workpieces can be unclamped at any stage in the processing and their places freed for other parts with longer processing times. "As a result, we are planning to have a low-manpower third shift soon."