

Date: 01.02.2018

## Concentrated flexibility and efficiency – facing heads and mounting tools from MAPAL

Using facing heads and mounting tools, complex contours on rotationally symmetric components can be realised without the use of a lathe for stationary workpieces. This benefits end machining centres when both pipe ends have to be machined simultaneously and independently of each other. The Bühring machine manufacturer therefore decided on a CNC machining centre with a corresponding tool solution from MAPAL and since then operates significantly more flexibly and economically.

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)

## Machine manufacturer Bühring machines complex contours with high efficiency and precision

When the new end machining centre was delivered to Maschinenbau Bühring Betriebsunternehmen GmbH, based in Dreileben, Saxony-Anhalt, three forklift trucks had to be used to their full extent: A 26 tonne, a 4 tonne and a 5 tonne lifting truck were used together to lift the around ten metre long system from the transporter and take it to its working position. "That was real precision work", says Sven Bühring, who operated one of the forklift trucks and, together with two other family members, manages the skills of contract manufacturers in the fifth generation.

The effort and commitment paid off. The machine fitted with the latest technology has significant advantages compared with the outdated system previously used.

## Simultaneous machining of both pipe ends

The new CNC machine built according to the specifications of Bühring ensures the reliable and efficient machining of pipe ends. The pipe to be machined can be between 400 and 2,500 mm long with this machine. By using tailored single slide facing heads from MAPAL with an external diameter of 380 mm and a face stroke of

Date: 01.02.2018

55 mm, pipes with a diameter of up to 275 mm can be manufactured with complex inner and outer contours.

The single-slide facing heads:

External diameter of 380 mm

Face stroke of 55 mm

Facing heads are predominantly used on special machines when it is necessary to machine special contours. The precisely ground guiding tracks ensure the highest positioning accuracy. For machining at Bühring, MAPAL designed a facing head as a single slide with automatic tool change and with concealed imbalance compensation slides. As a result of this balance, particularly dynamic and precise machining is guaranteed.

Other features of the facing head:

Central oil lubrication

Internal coolant supply

Barrier air at the HSK connection which is used to automatically hold the mounting tools

The barrier air keeps the HSK connection free of impurities. With this, the facing head fulfils all the functions of a front edge of spindle. Using the facing head, machining with a stationary workpiece and in one clamping setup can take place on both ends simultaneously and independently of each other.

“Along with high process reliability, one of biggest advantages of the new system that showed effect immediately is the significantly faster component change”, explains Bühring. “Refitting on the system previously used took around 2.5 hours. We now require around half the time. This is noticeable as we generally change the product at least once a week.”The new CNC machine built according to the specifications of Bühring ensures the reliable and efficient machining of pipe ends. The pipe to be machined can be between 400 and 2,500 mm long with this

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)

Date: 01.02.2018

machine. By using tailored single slide facing heads from MAPAL with an external diameter of 380 mm and a face stroke of 55 mm, pipes with a diameter of up to 275 mm can be manufactured with complex inner and outer contours.

The single-slide facing heads:

External diameter of 380 mm

Face stroke of 55 mm

Facing heads are predominantly used on special machines when it is necessary to machine special contours. The precisely ground guiding tracks ensure the highest positioning accuracy. For machining at Bühring, MAPAL designed a facing head as a single slide with automatic tool change and with concealed imbalance compensation slides. As a result of this balance, particularly dynamic and precise machining is guaranteed.

Other features of the facing head:

Central oil lubrication

Internal coolant supply

Barrier air at the HSK connection which is used to automatically hold the mounting tools

The barrier air keeps the HSK connection free of impurities. With this, the facing head fulfils all the functions of a front edge of spindle. Using the facing head, machining with a stationary workpiece and in one clamping setup can take place on both ends simultaneously and independently of each other.

“Along with high process reliability, one of biggest advantages of the new system that showed effect immediately is the significantly faster component change”, explains Bühring. “Refitting on the system previously used took around 2.5 hours. We now require around half the time. This is noticeable as we generally change the product at least once a week.”

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)

Date: 01.02.2018

## Automated tool change using HSK-A63 connection

An automated tool change is responsible for this increased availability of the new machine, among other factors. A hydraulic system for the automatic tool change is installed in the operating slide of the facing head. Disc revolvers with twelve tool positions each on both sides of the machine provide Bühring with sufficient space for the required tools.

The products currently being manufactured are a dozen components that the customer requires for the construction of straw bale presses. Bühring generally delivers the components ready for installation, i.e. completely machined, welded and painted. One of these components is a rotor with 17 welded double rings each with two spikes that within a round baler is responsible for the optimum transport of the straw from the pick-up system to the straw bale press.

The basic body of the rotor:

Made from thin-walled roller tube made of steel

1,200 mm long

Diameter of 250 mm

It must be faced and chamfered at both ends inside and at the front so that a serrated stub can then be welded on it. Afterwards the axle may only have a radial run-out error of 3 mm to ensure optimum handling characteristics of the press trailer. Accordingly the machining of the ends must be precise.

## MAPAL provides a suitable machining process

The machining process was designed by the machine manufacturer together with experts from MAPAL as classic wet machining. Standard ISO indexable inserts are used for the different machining processes at the pipe ends. "In contrast, special cutting materials of a manufacturer were required for the machine previously used because solely dry machining without coolant was intended there", recalls Bühring. "As a result we not only had high cutting material costs, but also an extreme

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)

Date: 01.02.2018

generation of noise in the hall that burdened the employees.” With the new machining process based on mounting tools, this is also a thing of the past. The surface quality required for the order – a roughness of Rz 25 µm must not be exceeded – is achieved without problem using the new machining concept. The main times vary depending on the machining task from a few seconds to a few minutes. “We can produce more precisely and efficiently with the new machine and the MAPAL tools”, says Sven Bühring. “And we have not yet optimised programming due to a lack of time so we expect further improvements in the future.”

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)

## Machine capacity freed up for new applications

Sven Bühring wants to make use of the additional machining capacities of the machine in the future to address new customer groups. “In my view the diverse and flexible machining options are particularly attractive for potential customers. These result from the combination of the end machining centre with the mounting tools and a laser pipe cutting machine that we also have in the company.”

Bühring receives optimum support for its expansion from MAPAL’s technical support team that the company has come to value. “When teething troubles of the machine contaminated the hydraulic drive system of the facing head in the commissioning phase, an employee from MAPAL was on site the next morning, picked up the faulty part and took care of everything else without complication. This is decisive because we must have products ready at short notice for many customers. Here we have to look for technology partners like MAPAL who we can rely on completely

“Without a wide range of production techniques and a high availability of production equipment, a toll manufacturer does not have any future prospects. Reliable and tailored machining solutions and an efficient technical support like the one from MAPAL are an important part in having continual success.”

Date: 01.02.2018

Captions:



MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

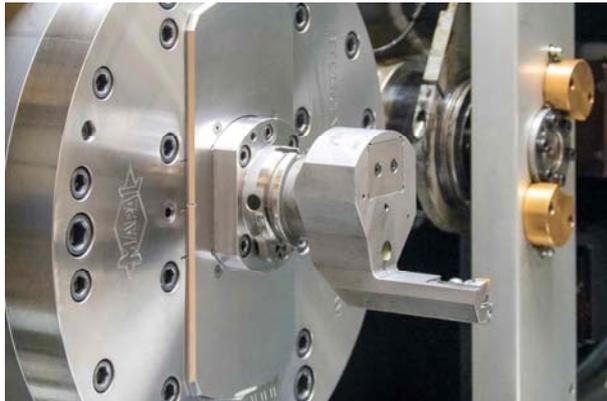
Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)

For many years the machining of pipes at both ends has been one of the specialities of the machine engineering company Bühring, which acts as an extended workbench for agricultural machinery manufacturers, among others.



The facing heads of the machine are equipped with an HSK-A63 tool adapter. A disc revolver is integrated for the corresponding mounting tools.

Date: 01.02.2018



Two tailor-made single slide facing heads with automatic tool change, in conjunction with corresponding mounting tools, allow complex machining contours to be realised.

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)



About a dozen different rollers and axles are required to build a round baler. This includes the rotor that is shown with welded-on teeth, which ensures optimum transport of the straw in the baler.

# PRESS RELEASE



Date: 01.02.2018



Bühring manufactures various components for straw balers such as these. Credit: Peter Vahlersvik

If published, please send a voucher copy  
by mail to Patricia Müller  
or by e-mail to [patricia.mueller@mapal.com](mailto:patricia.mueller@mapal.com).

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Andreas Enzenbach

Phone: +49 7361 585-3683  
Fax: +49 7361 585-1019  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)