

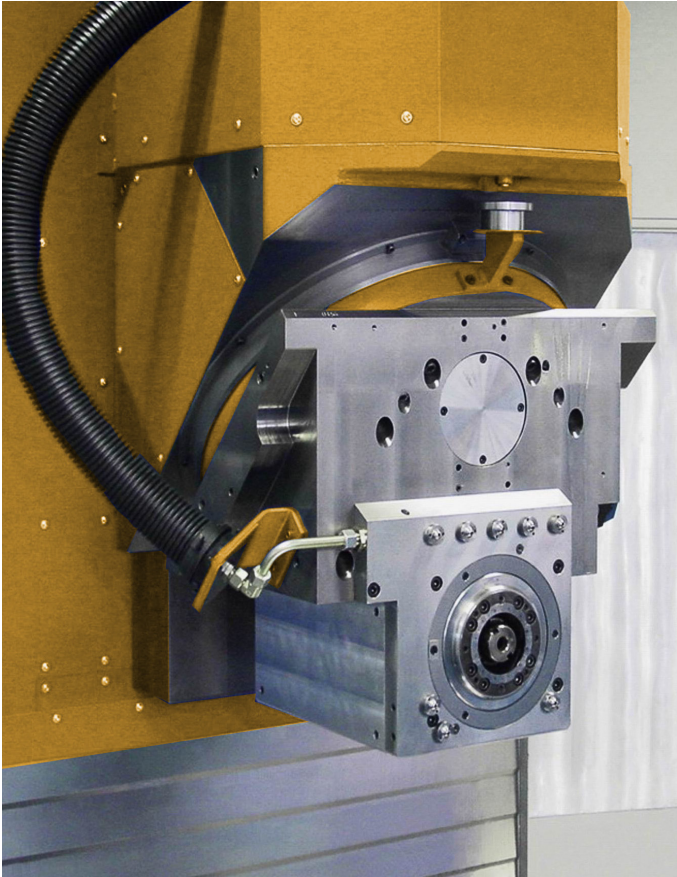
rates. The swivelling spindle – manufactured in-house – combined with an automatic two-step gear made by BURKHARDT+WEBER – achieves a torque of 1450 Nm and a power of 40 kW at a duty cycle of 100 %.

With a duty rate of 40 % the machine provides 1910 Nm and 50 kW for an efficient chip removal. Speeds up to 8000 rpm in any spindle position, even when approaching new positions, guarantee short primary processing and non-productive times for any kind of metallic materials.

A main advantage for the production of solid cages made from brass, steel or laminated fabric, depending on their use. The B+W tool magazine offers a capacity of max. 570 tool pockets. By means of the loading robot with a speed of up to 200 m/min NC facing heads – also manufactured in-house – can be automatically changed into the HV machining head. The NC facing head is used for the inner contours in the bearing seat. Due to the fact that the MCX 1000 HV TT is extremely process-oriented, only a few months after start of production positive results could be registered, also based on a very close co-operation between the B+W engineers and the colleagues at the customer. Both the required dimensional accuracy and the aimed increase in production could be topped considerably.

And last but not least the user-friendly control conception convinced the operator right from the beginning, with the result of a doubled output within very short time.

One table suitable for any angular position



*The HV head manufactures in-house
is worldwide leading in its class.*

LEGAL NOTICE

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BW

COMPETENCE PROJECT REPORT

SIMULTANEOUS 5-AXIS MACHINING



MCX 1000 HV TT:
One table suitable for
any angular position

BW BURKHARDT
+ WEBER

Strong and accurate since 1888

Swivelling core

In fact, the large 5-axis machining centre made by BURKHARDT+WEBER is already used for the manufacturing of large rolling bearing cages, but it offers much more than that. The MCX 1000 HV TT with tilting machine table is mastering the simultaneous 5-axis machining in any angular position – with a maximum load of 4 tons which can be changed automatically on an area of approximately one square meter as well as a rapid traverse of the main axes of 40 to 60 m/min.



*Abundant flexibility and power:
Large dimensioned machining centre
MCX 1000 HV TT with tilting table
(A-axis) and tilting spindle.*



*The central components of these gigantic
devices are always huge pivot bearings.*



*Innovation made by BW: The turning-tilting table is
custom-made and bears a pallet load of 4 tons.*

No matter if excavators, swing-bridges, propeller blades or wind power stations – they all have one thing in common: the main components of these partly gigantic systems are large pivot bearings, exposed to high loads. But nevertheless, as key components, they are expected to make a precise and durable “job”. For this reason large rolling bearings have to meet the highest demands regarding precision and dimensional accuracy. One important functional component is the bearing cage: It keeps the rolling elements separated from each other and evenly spaced to ensure an even load distribution.

For the selection of a new machining centre the world-wide leading manufacturer of large rolling bearings has decided in favour of the MCX 1000 HV TT made by BURKHARDT+WEBER. HV TT means “Horizontal Vertical Tilting Table”. One of the reasons for choosing BURKHARDT+WEBER was the design of a horizontal/vertical tilting machine table (A-axis) combined with a powerful swivelling spindle proving once again large innovative strength. The customer required a maximum of flexibility for the manufacturing of complete part families, the availability of tools in any possible angular position and the use of as short as possible and therewith rigid tools.

During the pre-acceptance in Reutlingen the MCX 1000 HV TT already demonstrated an enormous increase of productivity by 100 per cent compared to the preceding technology. But first things first: The new MCX 1000 HV TT with a swing diameter of 2000 mm is part of the medium-sized roller-guided machining centres manufactured by BURKHARDT + WEBER in Reutlingen with a high in-house production depth. Core part of the machine is the turning-tilting table which allows an absolutely simultaneous 5-axis machining in nearly all angular positions.

Simultaneous 5-axis machining in all angular positions

The tilting table consists of a bridge clamped between two NC reversible clamping devices and the hereon mounted NC table unit. The patented B+W pallet changer automatically exchanges pallets of the size 1000 x 1250 mm with a max. pallet load of 4 tons onto the table unit. Both pallets are equipped with hydraulic chucks including 12 centring jaws and one hydraulically actuated fastener. Despite these remarkable dimensions the X-axis allows rapid feeds of up to 40 m/min, the other axes come up to 60 m/min. After approaching the exact machining position, the tilting table and NC table unit are clamped by generous dimensioned hydraulic brakes, allowing high feed forces and respectively high chip removal