

BW **BURKHARDT**
+
WEBER



strong. precise. customized. digital.

MCC SERIES.

COMPACT. POWERFUL. UNCOMPROMISINGLY BW.

To answer the request of BURKHARDT+WEBER customers around the world, we are delighted to announce the launch of the new compact MCC. This new machine expands the lower end of the BW range and is available either as a stand-alone machine in 630 pallet format or as part of an interlinked production system. Despite its modest dimensions, it is an uncompromising and tough workhorse.



MCC – THE ELEMENTAL POWER AMONG
630-FORMAT MACHINING CENTRES.

THE LEGEND LIVES ON.

At the turn of the millennium the MC60 machining centre made history. Machines of this type are still in use today. In the past few years BURKHARDT+WEBER has often been asked why it no longer offers a compact machine of this size. The answer was simply that it was too expensive.

Particularly in this segment, the market needs affordable machines for serial production. These machines often undertake specific machining tasks as part of interlinked systems and do not require the full range of typical BW customisation. However, other key features offered by BW are required even more: Power, accuracy, outstanding stiffness and availability.

We have reviewed these requirements and successfully squared the circle. The new MCC is a more than worthy successor to the legendary MC60. Extremely compact, state-of-the-art technology, genetically BW through and through and exceptionally economical.



WITH THE MCC, BW BECOMES EVEN MORE ATTRACTIVE
FOR COMPACT SERIES PRODUCTION.

THE WORKHORSE.



DESIGNED FOR DEMANDING SERIAL PRODUCTION.
RELENTLESSLY STRONG AND EXCEPTIONALLY ECONOMICAL.

CASH COW WITH BW GENES.

A machine designed to make money – 24 hours a day, seven days a week. This was the central aim when developing the MCC, and we have given a lot of thought as to how to achieve this:

STANDARDISED.

BW machining centres are normally highly individual. With the MCC, however, we have developed an absolutely standard production machine, which offers the specific features required for its typical use.

RELIABLE.

No expense has been spared in terms of quality in order to ensure that the MCC also boasts BW's renowned reliability. The proven design of our large BAZ has been adopted unchanged in all the essential details.

COMPACT AND STRONG.

The MCC achieves an incredible "power density". Never before have we been able to put so much power into such a compact machine. The result is a phenomenal cutting capacity in the most difficult materials – essential for the highest productivity.

SIMPLE.

The MCC's standardisation enables a short delivery time. As a "hook machine" with a one-piece bed, it can be installed and commissioned quickly and safely. Very simple operation and outstanding ease of maintenance complete the picture.



FROM ONE SOURCE.

Many customers who operate large BW machining centres value the long-term reliability of these machines and our excellent service. In the past, however, they have often been forced to switch to competing products for smaller machines. The new MCC now expands the lower end of the BURKHARDT+WEBER family, so that many customers can obtain all machines and service from one source.



"Nothing is impossible. We need to completely rethink if we are to offer well-priced solutions in the segment of interlinkable, fully digitised serial production machines. Compact, standardised, simple. But uncompromisingly BW. Because customers who want a genuine BW could never accept trade-offs regarding force feed, accuracy and stiffness. Neither could we."

Olaf Furtmeier, CEO

24/7 PURE COST-EFFICIENCY.

100 % BURKHARDT+WEBER.

The MCC is unique in its market area. For many manufacturers, a heavy 630-format machine means going to the limits of their design engineering standards. Not so for BURKHARDT+WEBER. We decided to scale all key features for the stiffness and power of our much larger MCX series to the MCC. With the impressive result of one of the most stiff machines in this class that there has ever been.

MACHINING UNIT.

The gearless spindles alone boast superb performance values of up to 300 Nm in S1 operation. But the highlight which makes the MCC a real powerhouse is the 1,300 Nm gear spindle. This means that there are virtually no limits to the MCC's cutting capacity.

MACHINE BED AND COLUMN.

Although far more compact, the uncompromising basic cast iron construction has been retained for the MCC. True to our maxim of "Construction rather than compensation", we have also used an ultra-rigid construction for the MCC. Generously dimensioned ribbing and FEM-optimised structures guarantee a high degree of stiffness.

TOOL MAGAZINE.

The extremely compact magazine of the MCC has been specially developed for use in a serial production machine. It can accommodate 64 tools as standard and can be expanded to 128.

AXIS DRIVES.

A feed of 17 kN in all axes sends a clear message. Dynamics and power go hand in hand at BW.

TANGENTIAL CHANGER.

The big advantage of two parallel-operated yet independent pallet changers is that different loads with very heavy workpieces do not affect each other. Other conventional changer technologies quickly reach their limits at this machine size.

DOUBLE SPINDLE DRIVE.

The second ball screw drive in the Y-axis is characteristic of BW. It guarantees the highest accuracy paired with high dynamics, and increases the stiffness by 50 %.

SOLID CAST IRON, TWO Y-SPINDLES, TANGENTIAL CHANGER.
THIS IS THE BURKHARDT+WEBER PEDIGREE.

HIGH-DEFINITION DIGITAL TECHNOLOGY.

Modern value chains rely on intelligent, digitally networked systems. At BURKHARDT+WEBER, Industry 4.0 means linking machining centres with cutting-edge information and communication technology. Not only can the MCC be easily interlinked, but it is also ready for digital networking in self-organised production processes.

Integrated networked production brings many advantages, such as general efficiency improvement, the production of individual workpieces in series production quality, highly chaotic production or control of the tool magazine by the machine itself. Highly automated BW systems are completely integrated into our customers' MES infrastructure.

The end-to-end digitisation of the MCC generates a significant additional benefit for process optimisation. The systematic use of I/O-Link components enables all BW machines to document their entire life cycle via digital footprint and, supplemented by a digital fingerprint, allows conclusions to be drawn about the current machine condition.

This makes the MCC an important component for smart manufacturing solutions. The provision of condition data enables the user's higher level systems to optimally organise production and maintenance, reduce downtimes and vastly increase system availability.

With the MCC you are ideally equipped to meet the digitalized future.



The MCC uses cutting-edge I/O-Link components to transmit crucial information, for example about availability and reasons for failure, or current feed forces.



The real-time data processed and visualised on the machine by standard software applications enable the user to optimise processing, programming and maintenance of the machine and organisation of workpieces and tools.

**DIGITAL INTELLIGENCE FOR YOUR PRODUCTION.
INDUSTRY 4.0 BECOMES REALITY.**

ASSEMBLIES.

THE BEST WHOLE IS THE SUM OF ITS EXCELLENT PARTS.



MACHINING UNIT.

- + Made by BURKHARDT+WEBER.
- + Powerful and sturdily dimensioned.
- + Stringent quality controls.
- + 24-hour load spectrum on BW test stand.

MOTOR SPINDLE.

- + Powerful motor spindle up to 38 kW, 380 Nm.
- + Up to 10,000 rpm for state-of-the-art tools.
- + Precision spindle with four sets of bearings.

GEAR SPINDLE.

- + 2-step powerful gear spindle for heavy machining up to 41 kW, 1,300 Nm.
- + High speeds up to 10,000 rpm.
- + Generous 120 mm bearing with large support span.

SWIVEL SPINDLE.

- + Powerful motor spindle up to 38 kW, 380 Nm.
- + Up to 10,000 rpm for state-of-the-art tools.
- + Generous swivel range of +45° / -110°.



MACHINE TABLE AND PALLETS.

MACHINE TABLE.

- + Made by BURKHARDT+WEBER.
- + Dynamic, direct-drive motor with water cooling.
- + Long and wide guide, low centre of gravity.
- + Large bearing diameter, resulting in high permissible tilting moment.
- + Quality testing on BW test stand.
- + Clamping hydraulics on table possible using central coupling (optional).
- + Inductive coupler for contactless data transmission (optional).

WORKPIECE PALLETS.

- + Pallet loading up to 1,500 kg.
- + Pallet size 630x630 mm (optionally 630x800 mm).
- + Central clamping hydraulics coupling (optional).



MACHINE BED AND COLUMN.

MACHINE BED.

- + Robustly dimensioned, solid cast design.
- + Single-piece machine bed.
- + Extra strong ribbing.
- + Virtually zero deflection due to high and wide side walls under the guides.
- + Excellent damping capabilities.
- + Thermal inertia.

MACHINE COLUMN.

- + Made by BURKHARDT+WEBER.
- + Thermosymmetrical structure.
- + Solid design.
- + Wide guide distance.
- + Excellent damping capabilities.



GUIDES AND AXIS DRIVES.

GUIDES.

- + Linear roller guides of the highest quality, size 65.
- + Wide spreaded load distribution due to a large number of guide carriages.
- + Generous guide widths for maximum stability.

AXIS DRIVES.

- + Servo drives in all linear axes.
- + Water-cooled servo drive for table axis.
- + High-precision ball screw drives.
- + Scales integrated into linear guides.
- + Rapid traverse speeds and feeds up to 60,000 mm/min.
- + Acceleration up to 7.0 m/s² with optimised acceleration ramps.

"THE MCC IS THE WORK OF GENERATIONS.

It is no coincidence that my father, who played a key role in developing the legendary MC60, is also sitting here at the table. The MCC also has the MC 60's genes – just as I have inherited my father's perfectionism. The art lies in preserving proven design features and coupling these with cutting-edge technology. At BW new machines are developed in a fantastic team of extremely experienced design professionals and young high-tech experts."

Sven Jetter, Head of Quality Management



THE RESULT OF EXCELLENT TEAMWORK.

A BRAND PROMISE.



The MCC is a true BURKHARDT+WEBER. Pure power. No compromises. It sets standards in its segment. Its attractive price and excellent TCO offer users exceptional cost-efficiency for serial production of the 630 format. This has been achieved using standardisation, a sophisticated design and state-of-the-art technologies. With everything that makes a true BURKHARDT+WEBER.

STRONG. PRECISE. CUSTOMIZED. DIGITAL.

MCC	Unit (metric)	630	Unit (imperial)	630
				
Working range up to X Y Z (standard)	mm	1,100 900 1,100	in	43.31 35.43 43.31
Working range up to X Y Z (optional)	mm	1,100 900 1,300	in	43.31 35.43 51.18
Workpiece swing diameter Ø x H	mm	1,100x1,300	in	43.31x51.18
Pallet size (standard)	mm	630x630	in	24.80x24.80
Pallet size (optional)	mm	630x800	in	24.80x31.50
Max. pallet loading (workpiece + fixture)	kg	1,500	lbs	3,307
Feed force X Y Z	kN	17.5 17.5 17.5	lb	3,934 3,934 3,934
Rapid traverse X Y Z (standard strokes)	m/min	60 60 60	in/min	2,362 2,362 2,362
Pa ¹ X Y Z	mm	0.007	in	0.00028
B axis	degrees	360,000x0.001	degrees	360,000x0.001
Table speed	rpm	40	rpm	40
Tilting moment	Nm	26,000	lb/in	230,120
Tangential torque	Nm	8,000	lb/in	70,806
MOTOR SPINDLE				
Spindle power, 100 % duty cycle	kW	30	HP	40
Max. torque, 100 % duty cycle	Nm	300	lb/in	2,655
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	rpm	20 – 6,000 (10,000)
GEAR SPINDLE				
Spindle power, 100 % duty cycle	kW	41	HP	55
Max. torque, 100 % duty cycle	Nm	1,300	lb/in	11,506
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	rpm	20 – 6,000 (10,000)
SWIVEL SPINDLE				
Spindle power, 100 % duty cycle	kW	30	HP	40
Max. torque, 100 % duty cycle	Nm	300	lb/in	2,655
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	rpm	20 – 6,000 (10,000)
Swivel range	degrees	+45 / -110	degrees	+45 / -110
Tool holder (standard)		HSK-A100		HSK-A100
Tool holder (optional)		ISO 50		ISO 50
Tool clamping force, HSK-A100 (ISO 50)	N	45,000 (25,000)	lb	10,116 (5,620)
Number of tool positions		64 – 128		64 – 128
Tool diameter	mm	125 (350)	in	4.92 (13.78)
Tool length	mm	650	in	25.59
Max. tool weight (optional)	kg	30 (40)	lbs	66.14 (88.18)
Min. chip-to-chip time	s	5	s	5
Min. pallet change time	s	12	s	12
Machine control, Siemens Sinumerik		SIN 840D sl		SIN 840D sl
Installation area, LxWxH, approx.	mm	8,000x3,300x3,500	in	315x130x137.8
Weight, approx.	kg	27,000	lbs	59,525

¹ according to VDI / DGQ 3441



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