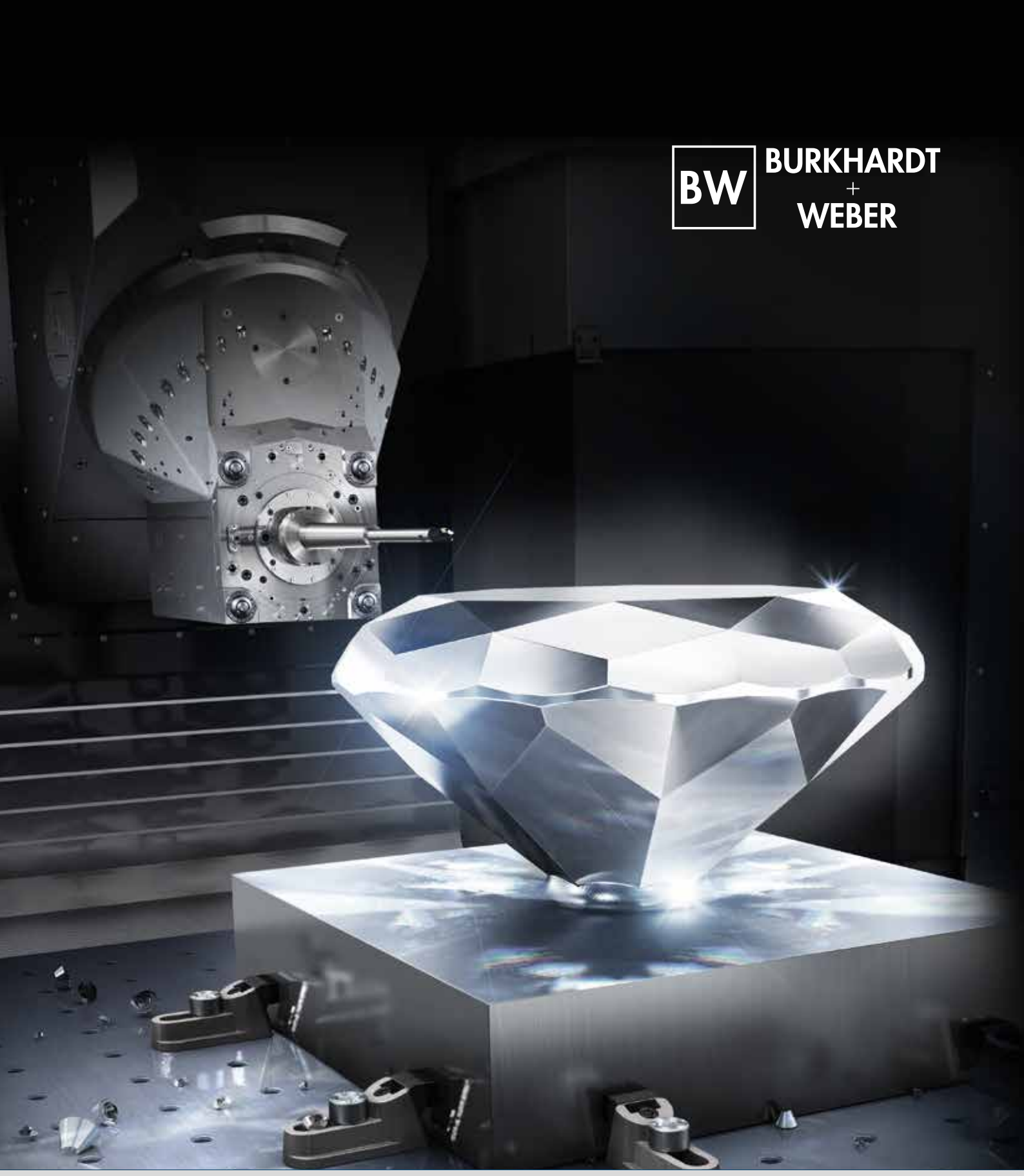


BURKHARDT + WEBER

strong. precise. customized. digital.

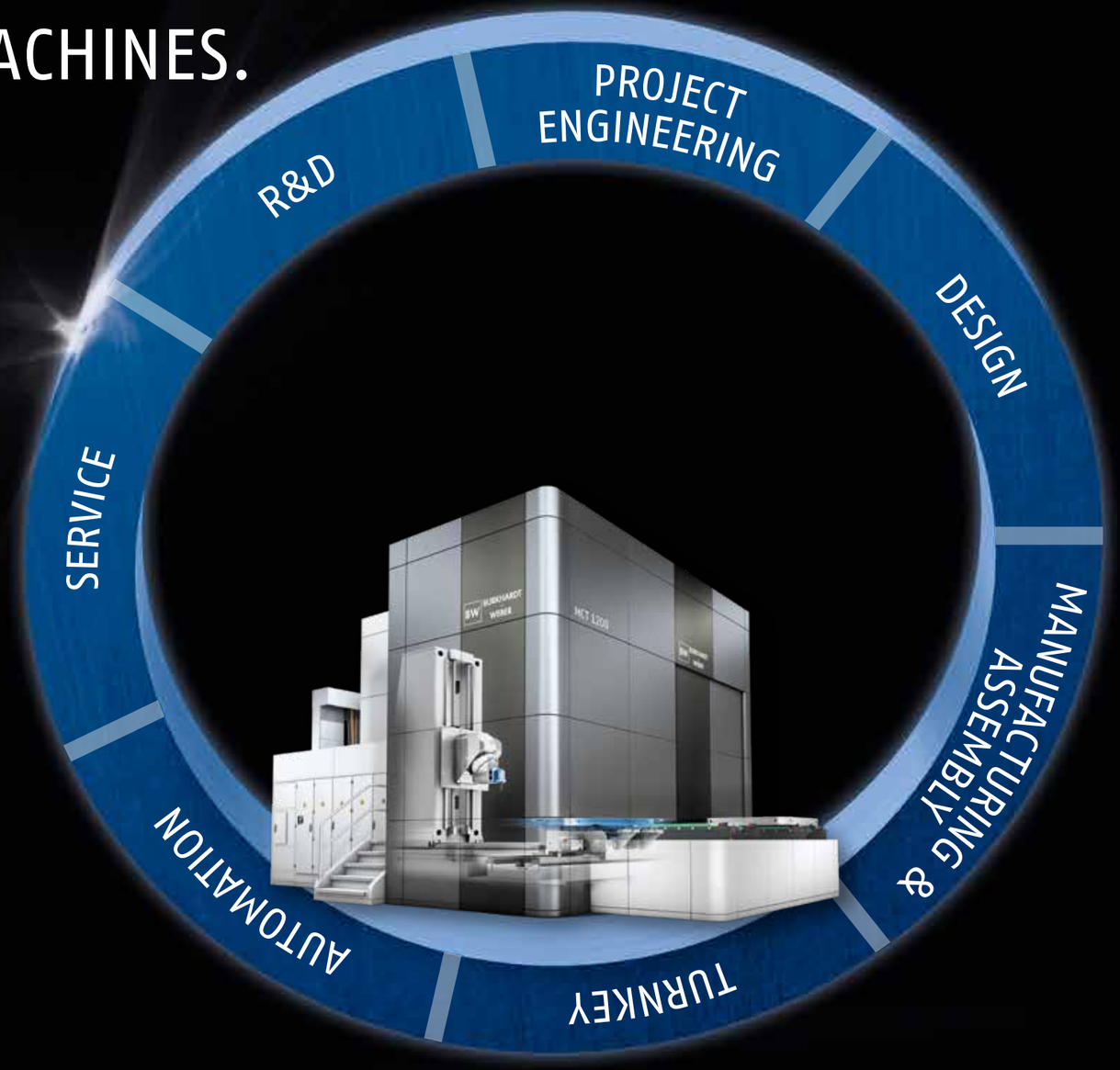
GENERAL CATALOGUE.

BW – YOUR PARTNER FOR METHODS AND MACHINES.

THE RING OF POWER.

With this message, the company does not only present itself as a traditional engineering company, but rather as an integrated technology partner. Reliable, individual machine solutions with associated clamping technology and fixtures, automation solutions with master computer linkage, combined with decades of experience in special purpose machines as well as engineers and specialists, who support with competence in process layout and process optimisation. In summary: a concentrated competence in chipping, which is one of BW's strengths.

130 years built on experiences in machine tool manufacturing and over 50 years' expertise in CNC machining centres and their application for demanding machining of hard metals like steel, titanium and castings. The development and production of all core components by BW itself and excellent specialists produce the typical BW premium quality.



MCX-SERIES:
Fast roller-guided machining centres in a heavy-duty design.

MCT-SERIES:
Multitasking machining centres with fast-turning tables and 5-axis swivel head.

MCR-SERIES:
Classic, extra-wide flat sliding guides for the demanding cutting tasks.

MCµ-SERIES:
Ultraprecision close to that of a measuring machine.

MCC-SERIES:
Standardised and universal compact CNC machines.

INTEGRATION OF THE COMPLETE RANGE OF ALL MACHINING TASKS.

STRONG.

"Absolutely sound machine engineering." – is how customers describe BURKHARDT+WEBER. A seemingly simple assessment, but one that is as informative as it is multi-layered. Essentially it means one thing above all: sturdy design, use of the best materials, no compromises. BW machines are built for decades of production service in challenging conditions.

Based on the principle of "strong mechanical design instead of electronic compensation" the machining centres are able to guarantee maximum accuracy and high output for many years, even with continuous machining of demanding materials. A BW can still perform as well after years of service as it does during commissioning.

Machining of expansive and heavy workpieces necessitates a sound and well-conceived machine design. We have decades of experience with large machining centres and the associated machinery. BW work area ergonomics are trendsetting and the tool magazine is world-leading.

PRECISE.

Combination of individual parts leads to increasingly complex geometries and fewer clamping operations. This significantly increases the demands on machining accuracy – that is exactly the strength of each and every BW machine. Generous component sizing, paired with decades of practical experiences of our BW team, deliver accuracies close to a measuring machine.

BURKHARDT+WEBER manufactures its machines in a variety of precision classes to meet your specific requirements.

The high accuracy built is engineered to last for many years with performance, on that we stake our name: BURKHARDT+WEBER.

CUSTOMIZED.

Our highly capable process engineering team is built on decades of experience in special purpose machine tool manufacturing and the implementation of countless turnkey projects. The starting point for your individual machining centre is your current and future process requirements.

The machining of a wide range of materials for parts in varying batch sizes demands highly flexible machining centres. We tailor your machining centre to your needs from our five different product ranges and an extensive kit of auxillary equipment options. Tool magazines with over 800 tools, capacity for large and long special tools, workpiece automation, process monitoring and the associated clamping and production technology ensure efficient machining.

As much customization as necessary, as much standard equipment as possible.

DIGITAL.

At BW, Industry 4.0 stands for integrating machining centres with state-of-the-art information and communication technology. The machining centre can be easily connected to production control computers and higher-level ERP systems. The holistically networked production increases efficiency, offers serial production quality for low part volumes, or production according to a chaotic system. Highly automated systems are fully integrated into the MES infrastructure of our customers.

In addition to tried-and-tested solutions such as centralised cutting tool management and production order planning, predictive maintenance, condition monitoring and Smart Service will offer customers the greatest potential for added value in the future. A machine only makes money when the spindle is cutting. By using state-of-the-art technologies, condition data can be captured, analysed and interpreted even more accurately. This allows to draw important conclusions to maintain and repair the machine more efficiently.

And in case an intervention is needed, the BW Smart Service concept brings quick relief. Remote access and mixed reality support gets you up and running faster and at lower cost.

APPLICATIONS.

MACHINE BUILDING.

A DOMAIN OF BURKHARDT+WEBER.
Milling, turning, drilling, deep-hole drilling, 5-axis machining, measuring, single pieces, small batches, tight tolerances and high surface qualities, steel, castings, non-ferrous metals and the need for installation-ready components – these are the daily demands on modern machine building. As a machine tool builder, BW puts these demands into practice every day in its machining operations. BW offers a wide range of premium quality machining centres. All can be tailored to the needs of your components, so that your production is precise and quick, yet flexible.

DRIVE TECHNOLOGY.

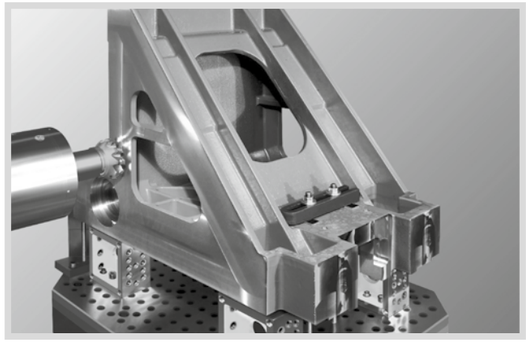
FOR THE WORLD'S BEST TRANSMISSIONS.
Gearbox housings, cast or fabricated, feature precise centre distances and concentricities, as well as tightly toleranced angular positions – BW feels at home here. Rigid table drives with high repositioning accuracy allow the drilling of deep holes from opposite sides. Large table bearing diameters guarantee the necessary rigidity even when milling in high spindle positions. The automatic tool extension is used in deep casings. This can extend each standard tool up to 40 kg automatically by 350 mm allowing deep-set holes to be drilled or face seats to be milled.

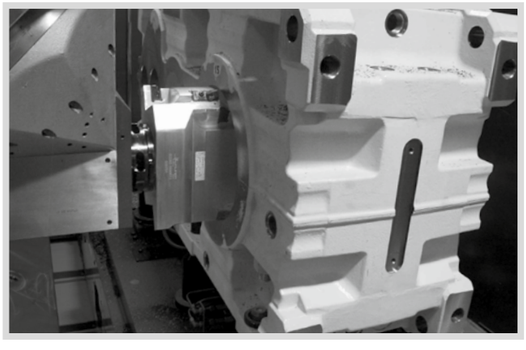
ENGINES AND SYSTEMS.

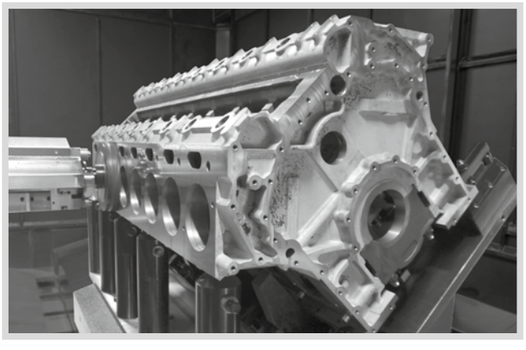
FOR LARGE HIGH-PERFORMANCE ENGINES.
Powerful diesel engines, in-line or V-blocks, up to V24 engines with block lengths up to 5,000 mm. BW machines deliver partial or complete machining including the crankshaft and camshaft bores. BURKHARDT+WEBER has many references for its machining systems in this field. Large working areas, BW's own machine tables with high tilting and torsional rigidity, coordinated special equipment such as feed-out tooling, automatic boring bar and boring head changers, part-specific contact stop tools and line boring bars. In addition, the complete range of BW fixture technology is available on request.

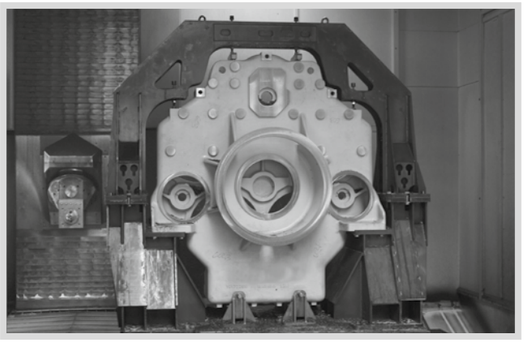
COMMERCIAL VEHICLES.

COMPREHENSIVE SOLUTIONS FOR YOUR VEHICLES.
Whether it be trucks, tractors, earthmoving equipment or mining vehicles, whether it be diesel engines, gearboxes, chassis or axles, for small production volumes or up to 100,000 per year, BURKHARDT+WEBER offers comprehensive solutions. Linked and fully automated machining centres, also in combination with special purpose machines for machining larger quantities of engine parts, manual or hydraulic fixtures, tools, automatic loading systems, measuring equipment – everything from a single source and in perfect accord. The high long-term precision of BW machines guarantees you a stable process for many years.









APPLICATIONS.

POWER GENERATION.

LARGE COMPONENTS OF THE HIGHEST QUALITY.
High-alloy steam turbine blades, large generator housings, wind power planetary gears and hubs made from cast iron – all these components are expansive, difficult to machine and demand outstanding expertise. Horizontal spindles with 4-speed automatic gearboxes up to 80 kW and 3,600 Nm enable efficient machining, even with difficult materials and high cutting volumes. Alternatively available with high-performance quill spindle with 160 mm diameter and up to 1,000 mm travel extension. Parts up to 20 tons can be loaded on the pallet changer parallel to machining, thereby significantly reducing setup times.

ROLLING MILLS AND MINING.

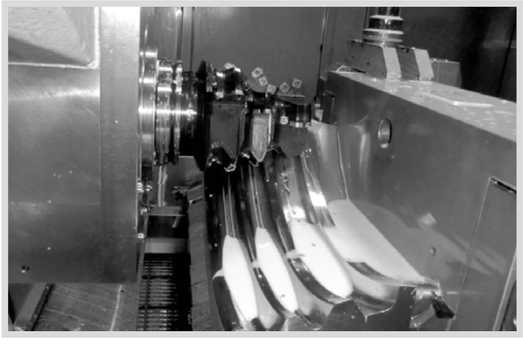
HEAVY MACHINES FOR DIFFICULT TASKS.
Framework, large welded constructions, booms, compact gearboxes, segment parts – up to 20 tons in weight are manufactured efficiently on customized BURKHARDT+WEBER machining centres. X-axes with up to 8,000 mm of travel, Y-axes up to 3,000 mm, quill spindle with 160 mm diameter and stroke of 1,000 mm, special magazines with special tools and individual weights of 300 kg, boring head changing equipment and the powerful BW tool magazine guarantee precise machining of the components.

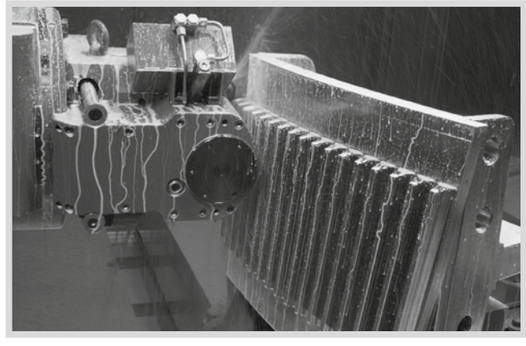
MACHINE TOOLS.

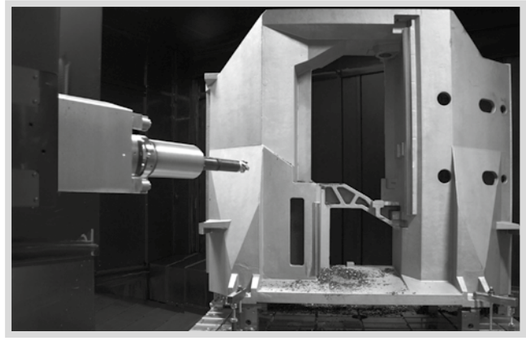
EXPERTISE ON EQUAL TERMS.
Numerous references attest to our expertise in machine tool manufacturing. Together with our strategically high degree of vertical integration, this makes us a premium professional partner. Whether slide units with tightest flatness and angular tolerances, spindle housing with tight concentricity and minimal radial run-outs or components with close to µ precision – BW has a range of machining centres with increased precision up to the MCµ machining centres that are 100 % thermally stabilised. All BW machining centres are manufactured to meet your specific requirements in air-conditioned production halls.

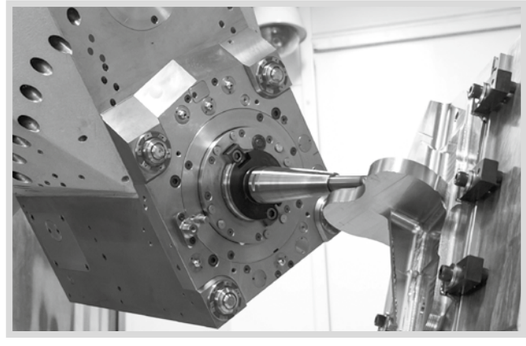
AEROSPACE.

PRECISION MEETS LARGE FORMAT.
Maximum dampening with maximum dynamics, coupled with a powerful swivel head. These are the basic requirements for cost-effective machining of titanium structural and compact components for the aerospace industry. The powerful water-cooled 42 kW drive with 1,600 Nm satisfies the increasing torque requirements for heavy roughing operations. With 6,500 Nm of holding torque, the HVC head is the tried-and-tested key to effective simultaneous 5-axis machining.









APPLICATIONS.

HYDRAULICS AND COMPRESSORS.

MACHINING OF THE TOUGHEST AND HARDEST MATERIALS.
Deep-set compressor bores, interrupted cuts for screw compressors, tough and hardest materials such as Superduplex and laser-welded Inconel®, deep boreholes with unfavourable length-to-diameter ratios. BURKHARDT+WEBER answers these extreme challenges with a sturdy basic design, on request with highly damping, extra-wide sliding guides and generally with high-mass, cast-iron machine columns, powerful, high-torque gear spindles and tools weighing up to 75 kg with lengths up to 1,200 mm and automatic change-over as well as automatic facing equipment for contour-controlled internal and external turning.

PLASTICS AND WOOD.

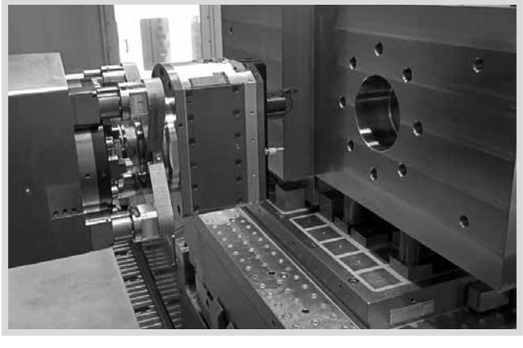
PURE PRODUCTION EFFICIENCY.
BURKHARDT+WEBER has many years of experience in machining components for plastic injection moulding machines such as base frames, cylinders, clamping plates, connecting rod drives and the like up to 20 tons in weight. BW is at home with the exacting requirements for stay hole gauges and clamping plate flatness, deep boreholes and high cutting volumes. The generously dimensioned machining centres offer highest positioning accuracies and best angular positions, even in the case of large dimensions. High-performance pre-machining followed by fine machining is the speciality of BW.

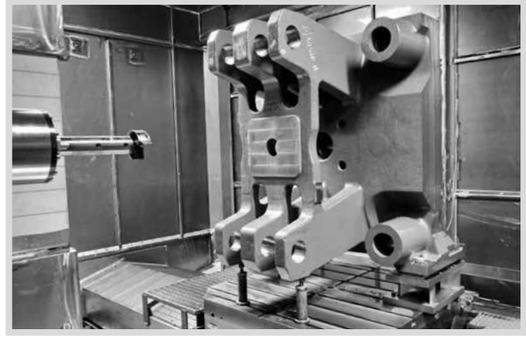
OIL AND GAS.

TIME SAVING COMPLETE MACHINING.
Hard metals, steel and its alloys, Inconel® and titanium or other tough cutting materials demand rigidity and precision for reliable chip cutting operations. The over-dimensioning philosophy applied on BW machines paired with extra-wide box way guides and high-torque spindles for turning and milling satisfy all chip cutting demands. BW is ideally equipped to integrate other machining tasks, like robust turning. To reliably guarantee this combination, all core components are developed, manufactured and assembled as well as tested in-house.

PRINTING, PAPER AND PACKAGING.

MAXIMUM FLATNESS FOR LARGE COMPONENTS.
Whether it be side walls with the tightest of gauges and maximum flatness or expansive machine frames with multi-sided machining – the BW machining centre is specially designed for your process. If extreme precision is required, then every BW machining centre is also available in a high-precision version. Our experts hand-scrape the final microns, drives are cooled, and active component tempering is installed. Water/water coolers reduce the release of hot air to the immediate machine environment as required. Production at the highest technical level. The µ is generated, not only compensated.





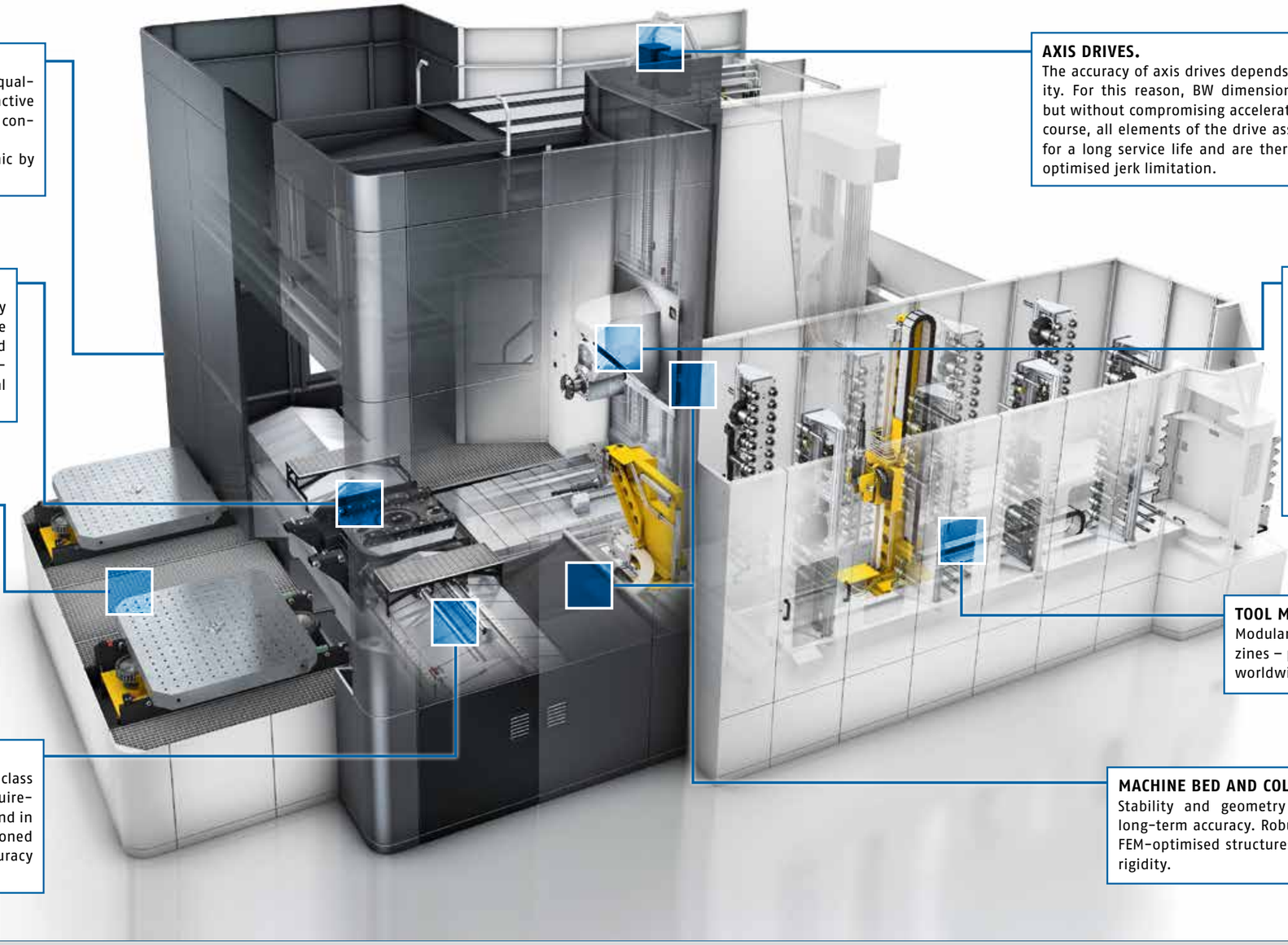
BW MACHINE PHILOSOPHY.

OPERATION.
Core of the BW Operator's SmartPanel is the high-quality integrated 24" HD multi-touch display. Attractive design, intuitive and clear user interface. Freely configurable touch screen display areas.
All BW machining centres are extremely ergonomic by design.

MACHINE TABLE.
Concentricity, axial eccentricity and repositioning accuracy are essentially dependent on the quality of the machine table. That's why this is also "made by BW". A layered structure with intermediate adjustments, large custom-made bearings with ultimate precision and the proverbial BW quality form a rock-solid basis.

PALLETS.
The pallets from BURKHARDT+WEBER are anything but standard pallets. They achieve their particularly high quality through tight tolerances for axial eccentricity, flatness and position. Each pallet is "made by BW" so special surfaces are also possible. All pallets have hardened guide and contact surfaces.

GUIDES.
Robustly dimensioned guides of the highest quality class are used at BW. For particularly high precision requirements, guide and contact surfaces are refiled by hand in some cases. Of course, the guides are over-dimensioned several times – only in this way the high basic accuracy can be maintained permanently.



AXIS DRIVES.
The accuracy of axis drives depends on their high rigidity. For this reason, BW dimensions them generously, but without compromising acceleration or feed force. Of course, all elements of the drive assembly are designed for a long service life and are therefore operated with optimised jerk limitation.

MACHINING UNIT.
All machining units are developed and manufactured exclusively in-house at BW. They are assembled by experienced employees and subjected to the strictest quality controls and an extensive load spectrum on a test stand with programmable counter-loads developed by BW.

TOOL MAGAZINE.
Modular, highly flexible tool magazines – peerless and market-leading worldwide. – "made by BW".

MACHINE BED AND COLUMNS.
Stability and geometry form the basis for long-term accuracy. Robust dimensioning and FEM-optimised structures guarantee optimum rigidity.

THE BEST WHOLE IS THE SUM
OF ITS EXCELLENT PARTS.

ASSEMBLIES.

H-MACHINING UNIT.

Power (S1)	kW	60
Torque (S1)	Nm	3,500
Spindle speed	rpm	12,000

HVP-/HVC-MACHINING UNIT.

Power (S1)	kW	41
Torque (S1)	Nm	1,600
Spindle speed	rpm	8,000
Swivel range	deg	±225
HVP		positioning
HVC		5-axis contouring

FORK-TYPE HEAD.

Power (S1)	kW	65
Torque (S1)	Nm	300 | 900
Spindle speed	rpm	15,000
Swivel range A	deg	-100 up to +60

QUILL.

Power (S1)	kW	52
Torque (S1)	Nm	2,000
Spindle speed	rpm	4,000
Diameter	mm	160
Quill travel	mm	1,000

All data above are the limits achievable.

MACHINE TABLE AND PALLET.

MACHINE TABLE.

+ Pallet loads from 1,500 kg to 20,000 kg.
+ Particularly high tilting and radial torque due to low-height table design and generously dimensioned axial roller bearings and holding brakes for optimum machining performance and excellent geometric results.
+ For pallet loads over 12,000 kg, all tables have hydrostatic axial and radial bearings.

MILLING / TURNING TABLE.

+ Powerful torque drives up to 650 rpm.
+ Up to 4,000 kg in turning operation and 7,000 kg in milling operation.
+ Integrated balancing software and balance monitoring.
+ Elaborate cooling of drive and main bearings.

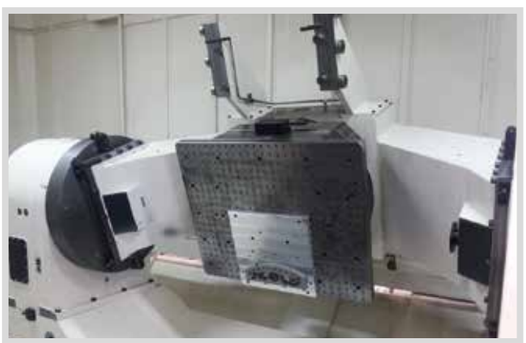
MACHINE BED AND COLUMN.

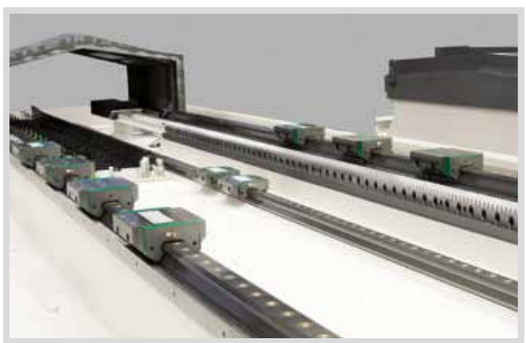
MACHINE BED.

+ Robustly dimensioned, high-mass design.
+ Extra strong ribbing.
+ Virtually free of sagging due to high and wide studs under the guides.
+ Welded steel construction, same thermal expansion as guide rails.

MACHINE COLUMN.

+ High-mass design.
+ Thermally symmetrical construction.
+ Large guide length and width.
+ Thermally inert and vibration damping thanks to design as a cast part.





ASSEMBLIES.

TOOL MAGAZINE.

The modular, highly flexible tool magazines are peerless and market-leading worldwide.

+ Made by BW.
+ Five highly dynamic CNC axes.
+ Traversing speeds up to 200 m/min.
+ Tool weights up to 75 kg, tilting torque up to 150 Nm.
+ Tool lengths up to 1,200 mm.
+ Boring bar diameters up to 900 mm.
+ Automatic tool weight and torque detection.
+ Application-oriented pre-storage and comprehensive tool management for maximum convenience.
+ Every magazine can be fully customized at the time of ordering and easily retrofitted or expanded, if required, even years later.
+ Loading and unloading at a loading station with 2x8 locations operating in parallel with machining.
+ Clever tool management and 21" smart control panel (optional).
+ Tool data transfer via chip, print code or online.

VERSIONS:

+ 64 locations in basic version for series production.
+ 128 locations basic equipment for large horizontal CNC machines.
+ 352 locations for machining workpiece families.
+ 608 locations for highest flexibility.
+ 800 locations maximum capacity.

Taper cleaning.

Tool gripper.

Comfortable operating.

Ergonomic exchange.

ASSEMBLIES.

GUIDES AND AXIS DRIVES.

GUIDES OF MCX, MCT, MCμ AND MCC SERIES.
+ Linear roller guides of the highest quality, sizes 55 and 65.
+ Load distribution with large surface area thanks to the large number of guide shoes.
+ Large guide widths for more stability.

GUIDES OF MCR SERIES.
+ Extra-wide sliding guides with extremely low surface pressures.
+ Best damping characteristics and durability.
+ Very rugged, laser-hardened.

AXIS DRIVES.
+ Directly driven with powerful servo motors.
+ Preloaded rack-and-pinion drives for large moving masses.
+ High-resolution, thermally decoupled scales.
+ Measuring sensor directly adjacent to the input point.
+ Rapid traversing speeds and feed rates up to 65,000 mm/min.

SMARTPANEL | OPERATING SURFACE.

Attractive design, intuitive operation and a straightforward user interface make the new SmartPanel another highlight of the BURKHARDT+WEBER machines. The innovative panel allows the operator to quickly locate the desired functions, process parameters and supporting information.

+ 24" full HD multi-touch panel.
+ Up to four independent display areas.
+ Process data monitoring.
+ BW tool management system.
+ Camera image.
+ File viewer.
+ Virtual keyboard.
+ Comprehensive navigation.
+ Favorite bar with search function.
+ Machine control panel with very good tactile feedback.
+ Spindle speed.
+ Feed rate.
+ Rapid traversing speed.
+ Keypad for customer-specific additional functions.
+ Pivoted, height-adjustable mounting.
+ Optionally available with Qwerty-keyboard.
+ Freely selectable integration of web-based applications.

AUTOMATION.

FLEXIBLE, LOW MANPOWER OR LIGHTS-OUT MACHINING.

PALLET CHANGER, STANDARD.
+ Dual pallet changer; set up during machine operation.
+ CNC-axis driven system.
+ Motion system hardware – fully extracted outside the enclosure.
+ Auto-load adapting pallet exchange speed.

THIRD AND FOURTH PALLET CHANGING STATION.
+ Very economical in the case of multiple clamping locations or a third shift.
+ Every station can be set up autonomously.
+ Flexible insertable, also as pickup-station.

ROTARY PALLET POOL.
+ Rapid changeover with up to six pallets in the system.
+ Motor-driven, rotating, generously dimensioned set up station.
+ System control functionality completely integrated inside machine control.

LINEAR LINKING SYSTEMS.
+ Low manpower operation of multiple machining centres in BW's own rail-guided linked system.

INTEGRATION IN MULTI-LEVEL SYSTEMS.
+ Simple integration in multi-level systems.
+ Compact planning and execution.
+ Turnkey solutions.

ROBOT LOADING.
+ Automated workpiece handling.
+ Intelligent, self-centering, hydraulic clamping devices.

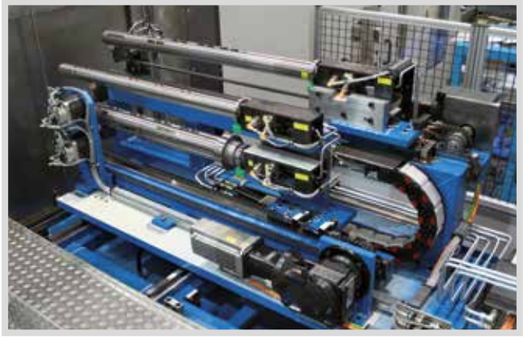
OVERHEAD GANTRY LOADING.
+ Increase effective spindle time.
+ Interlinked serial production.

ADDITIVE TECHNOLOGY.
+ Integration or 3D additive welding applications.
+ Stand-alone or multi-machine systems.
+ Flexible and adaptable.

CUSTOMIZED.

SPECIAL PURPOSE MACHINES.
With special purpose machines and interlinked overall systems, BW orient fully to your requirements for high output with optimum and consistent quality and good ergonomics. These customer-specific machines with long service lives are created from a modular system and are therefore tried-and-tested.

BACKGROUND MAGAZINE.
If the large machine magazines no longer suffice, there is a solution for this as well: a background magazine built from modules of the machine magazine with up to 3,000 tools and convenient magazine management.



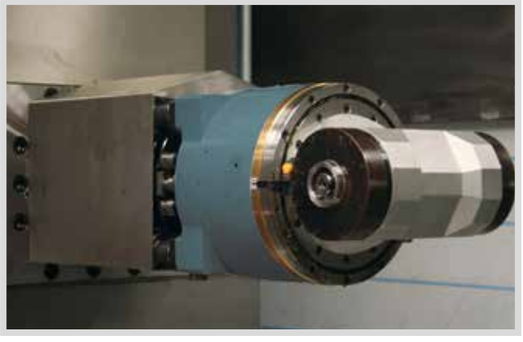
AUTOMATIC BORING BAR FEEDING.
One or more boring bars with lengths exceeding 1,200 mm are not fed from the magazine, but by means of automatic feeding from an external station. Naturally, CNC-controlled and from in-house production.

AUTOMATIC TOOL EXTENSION.
The original from its inventor. It can extend each tool weighing up to 40 kg automatically by 350 mm. Perfect concentricity, because no expensive intermediate adapters are required for boring bars or extensions. The integrated vibration absorber is effective against milling vibration.

DEEP-HOLE DRILLING.
Fully automatic, process safe drilling of large diameter deep hole bores with up to 200 lpm coolant through the tool. Main application areas are deep-hole drilling in engine case castings, the drilling of deep seated valve seats, and other similar applications.

FACING HEADS.
CNC-controlled facing heads featuring slide-guided facing slides and controlled counterweight for imbalance reduction. BW's own face-turning unit with control shaft in the centre of the tool adapter is CNC-controlled and permits µ-accurate adjustments of the turning tool on the facing slide through the high transmission ratio in the facing head.

DRILLING HEAD CHANGER.
Fully integrated drilling head changer for storing multiple CNC-controlled special heads with automatic tool change for up to 30 tools.



SPECIAL HEADS.
Special heads for special tasks: fixed or adjustable angular heads, milling heads, sawing heads, gear cutting heads and multi-spindle drilling heads. Quills for automatic extension of large tools and associated feeding and changing equipment.

MCX.

FAST ROLLER-GUIDED MACHINING CENTRES.

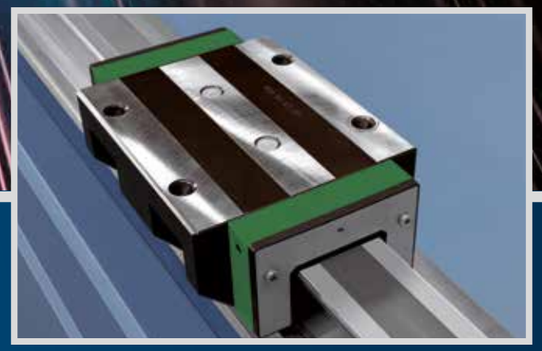
The successful MCX machining centres, with a well-conceived classification into eight different types up to 4,800 mm swing diameter and up to 20,000 kg payload. Robust sizing and performance, rapid traversing speeds of up to 65 m/min and acceleration to 5 m/s² ensure outstanding dynamics and short down-times.

MCX – THE ULTRA-DYNAMIC SERIES.

DYNAMICS AND POWER FOR UNIVERSAL USE.

All MCX machining centres are robustly designed, featuring high-torque spindle units and preloaded precision ball-screw drives or, in the case of very large travel ranges, a high-precision rack-and-pinion drive. This guarantees high long-term accuracy, even when rough and fine machining is combined.

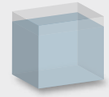
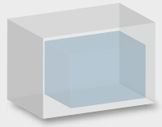
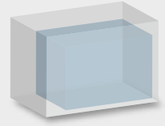
The cast-iron gantry column is characterised by particularly high damping characteristics and thermal inertia.



All MCX models feature over-sized linear roller guide systems to secure longevity.

MCX – THE ULTRA-DYNAMIC SERIES.

TECHNICAL DATA.

MCX (Metric System)	Unit	800	900	1000		1100	1200	1250	1400	1600
										
Working range X|Y|Z (standard)	mm	1,250|1,000|1,250	1,600|1,400|1,600	2,200|1,400|1,600		1,800|1,400|1,800	2,500|1,800|1,800	2,800|2,200|2,100	3,200|2,200|2,100	3,700|2,500|2,500
Working range X|Y|Z (optional)	mm	1,600|1,200|1,600	1,800|1,600|1,800	2,200|1,600|1,800		1,800|1,600|1,800	2,500|1,800|2,100	2,800|2,200|2,500	4,800|3,000|3,200	4,800|3,000|3,200
Workpiece swing diameter Ø x h	mm	1,500x1,300	1,600x1,750	2,300x1,900		1,600x1,750	2,500x2,100	2,800x2,500	3,200x2,600	3,700x2,600
Pallet size (standard)	mm	800x800	800x1,000	1,000x1,250		800x1,000	1,000x1,250	1,000x1,250	1,600x1,600	1,600x2,000
Pallet size (optional)	mm	630x800, 800x1,000	800x800	1,000x1,600		800x800	1,400x1,600	1,400x1,600	1,600x2,500	2,000x3,000
Pallet load (optional)	kg	2,500	3,500	5,000		4,000	7,000	7,000 (8,000)	12,000 (14,000)	18,000 (20,000)
Feed force X|Y|Z	kN	18|18|18	20|20|20	30|20|20		25|25|25	30|30|30	30|30|30	30|30|30	30|30|30
Rapid traverse X|Y|Z (standard axis travel)	m/min	65|65|65	65|65|65	50|60|60		60|60|60	50|50|50	50|50|50	50|50|50	30|50|50
Pa[1] X|Y|Z	mm	0,005	0,005	0,007		0,005	0,007	0,007	0,007	0,007
B-axis	degrees	360,000x0.001	360,000x0.001	360,000x0.001		360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001
Table speed	rpm	25	20	10		20	10	10	8	6
Tilting torque	Nm	26,000	40,000	60,000		40,000	60,000	60,000	100,000	100,000
Tangential torque	Nm	16,000	25,000	40,000		25,000	40,000	40,000	60,000	60,000
Spindle power 100 % duty rating (optional)[3]	kW	41	41	41		52	41 (60)	41 (60)	41 (60)	41 (60)
Torque 100 % duty rating (optional)[3]	Nm	1,220	1,220	1,220		1,720	1,220 (3,500)	1,220 (3,500)	1,220 (3,500)	1,220 (3,500)
Speed range 2 gear steps (optional)	rpm	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)		20 – 5,500 (7,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)
Speed range 4 gear steps (optional)	rpm						20 – 4,000 (5,000)	20 – 4,000 (5,000)	20 – 4,000 (5,000)	20 – 4,000 (5,000)
Speed range optional swivel spindle	rpm	8,000	8,000	8,000			8,000	8,000	8,000	8,000
Gear steps (optional)		2	2	2		2	2 (4)	2 (4)	2 (4)	2 (4)
Bearing diameter main spindle (optional)[3]	mm	120	120	120		120	120 (130)	120 (130)	120 (130)	120 (130)
Tool adapter (standard)		HSK-A 100	HSK-A 100	HSK-A 100		HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100
Tool adapter (optional)		ISO 50	ISO 50	ISO 50		ISO 50	ISO 50	ISO 50	ISO 50	ISO 50
Number of tool pockets		128 – 608	128 – 608	128 – 608		128 – 608	128 – 608	128 – 608	128 – 608	128 – 608
Tool diameter	mm	125/350 (420/900)[2]	125/350 (420/900)[2]	125/350 (420/900)[2]		125/350 (420/900)[2]	125/350 (420/900)[2]	125/350 (420/900)[2]	125/350 (420/900)[2]	125/350 (420/900)[2]
Tool length (optional)	mm	600 (900/1,200)	600 (900/1,200)	600 (900/1,200)		600 (900/1,200)	600 (900/1,200)	600 (900/1,200)	600 (900/1,200)	600 (900/1,200)
Tool weight (optional)	kg	60 (75)	60 (75)	60 (75)		60 (75)	60 (75)	60 (75)	60 (75)	60 (75)
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH, approximately	mm	9,300x 6,700x4,300	10,400x 7,600x5,200	11,000x 9,300x5,200		10,400x 7,600x5,200	11,700x 9,900x6,000	11,700x 9,900x6,000	14,700x 10,900x6,000	15,700x 10,900x6,000
Weight approximately	kg	34,000	40,000	48,000		46,000	55,000	58,000	70,000	90,000
Compatible machining units		H, HVP, HVC, A	H, HVP, HVC, A	H, HVP, HVC, A		H	H, HVP, HVC, A, Q	H, HVP, HVC, A, Q	H, HVP, HVC, A, Q	H, HVP, HVC, A, Q

[1] according to VDI/DGQ 3441

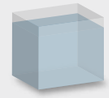
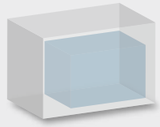
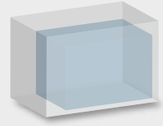
[2] bar tool

[3] 4 gear steps

Technical specifications are subject to change without prior notice.

MCX – THE ULTRA-DYNAMIC SERIES.

TECHNICAL DATA.

MCX (Imperial System)	Unit	800	900	1000		1100	1200	1250	1400	1600
										
Working range X|Y|Z (standard)	in	49.21|39.37|49.21	63.00|55.12|63.00	86.61|55.12|63.00		70.87|55.12|70.87	98.43|70.87|70.87	110.24|86.61|82.68	125.98|86.61|82.68	145.67|98.43|98.43
Working range X|Y|Z (optional)	in	63.00|47.24|63.00	70.87|63.00|70.87	86.61|63.00|70.87		70.87|63.00|55.12	98.43|70.87|82.68	110.24|86.61|98.43	188.98|118.11|125.98	188.98|118.11|125.98
Workpiece swing diameter Ø x h	in	59.06x51.18	63.00x68.90	90.55x74.80		63.00x68.90	98.43x82.68	110.24x98.43	125.98x102.36	145.67x102.36
Pallet size (standard)	in	31.50x31.50	31.50x39.37	39.37x49.21		31.50x39.37	39.37x49.21	39.37x49.21	63.00x63.00	63.00x78.74
Pallet size (optional)	in	31.50x39.37	31.50x31.50	39.37x63.00		31.50x31.50	55.12x63.00	55.12x63.00	63.00x98.43	78.74x118.11
Pallet load (optional)	lbs	5,512	7,716	11,023		8,818	15,432	15,432 (17,637)	26,455 (30,865)	39,683 (44,092)
Feed force X|Y|Z	lb	4,047|4,047|4,047	4,496|4,496|4,496	6,744|4,496|4,496		5,620|5,620|5,620	6,744|6,744|6,744	6,744|6,744|6,744	6,744|6,744|6,744	6,744|6,744|6,744
Rapid traverse X|Y|Z (standard axis travel)	in/min	2,559|2,559|2,559	2,559|2,559|2,559	1,969|2,362|2,362		2,362|2,362|2,362	1,969|1,969|1,969	1,969|1,969|1,969	1,969|1,969|1,969	1,181|1,969|1,969
Pa[1] X|Y|Z	in	0.000197	0.000197	0.000276		0.000197	0.000276	0.000276	0.000276	0.000276
B-axis	degrees	360,000x0.001	360,000x0.001	360,000x0.001		360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001
Table speed	rpm	25	20	10		20	10	10	8	6
Tilting torque	lb/in	230,120	354,030	531,042		354,030	531,042	531,042	885,075	885,075
Tangential torque	lb/in	141,612	221,270	354,030		221,270	354,030	354,030	531,045	531,045
Spindle power 100 % duty rating (optional)[3]	HP	55	55	55		70	55 (80)	55 (80)	55 (80)	55 (80)
Torque 100 % duty rating (optional)[3]	lb/in	10,798	10,798	10,798		15,223	10,798 (30,978)	10,798 (30,978)	10,798 (30,978)	10,798 (30,978)
Speed range 2 gear steps (optional)	rpm	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)		20 – 5,500 (7,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)
Speed range 4 gear steps (optional)	rpm						20 – 4,000 (5,000)	20 – 4,000 (5,000)	20 – 4,000 (5,000)	20 – 4,000 (5,000)
Speed range optional swivel spindle	rpm	8,000	8,000	8,000			8,000	8,000	8,000	8,000
Gear steps (optional)		2	2	2		2	2 (4)	2 (4)	2 (4)	2 (4)
Bearing diameter main spindle (optional)[3]	in	4.7244	4.7244	4.7244		4.7244	4.7244 (5.1181)	4.7244 (5.1181)	4.7244 (5.1181)	4.7244 (5.1181)
Tool adapter (standard)		HSK-A 100	HSK-A 100	HSK-A 100		HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100
Tool adapter (optional)		ISO 50	ISO 50	ISO 50		ISO 50	ISO 50	ISO 50	ISO 50	ISO 50
Number of tool pockets		128 – 608	128 – 608	128 – 608		128 – 608	128 – 608	128 – 608	128 – 608	128 – 608
Tool diameter	in	4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]		4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]
Tool length (optional)	in	23.62 (35.43)	23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)		23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)
Tool weight (optional)	lbs	132.3 (165.3)	132.3 (165.3)	132.3 (165.3)		132.3 (165.3)	132.3 (165.3)	132.3 (165.3)	132.3 (165.3)	132.3 (165.3)
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH, approximately	in	366x264x169	409x299x205	433x366x205		409x299x206	461x390x236	461x390x236	579x429x236	618x429x236
Weight approximately	lbs	74,950	88,180	105,820		101,410	121,250	127,860	154,320	198,410
Compatible machining units		H, HVP, HVC, A	H, HVP, HVC, A	H, HVP, HVC, A		H	H, HVP, HVC, A, Q	H, HVP, HVC, A, Q	H, HVP, HVC, A, Q	H, HVP, HVC, A, Q

[1] according to VDI/DGQ 3441

[2] bar tool

[3] 4 gear steps

Technical specifications are subject to change without prior notice.

MCT.

MILLING, DRILLING AND TURNING – MCT SERIES MULTITASKING MACHINING CENTRES.

The five MCT machining centres are designed specifically for multitasking applications. Milling, drilling, turning – all on one machining centre with high power density thanks to CNC-controlled tilting spindle, strong turning tool holder and fast-turning torque table. Integrated horizontal and vertical turning replaces use of multiple additional lathes.

MAXIMUM EFFICIENCY THROUGH FLEXIBILITY.

BW's own rotary tables with powerful torque motors for turning and generously dimensioned holding brakes for milling and drilling permit demanding steel and cast-iron machining operations with maximum cutting performance. All BW options of other series are also available for the MCT series. The MCT machining centres can also be operated together with other BW machining centres in one system, because the same table clamping is used.

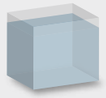
Robustly dimensioned tilting spindle with quadruple turn-tool holder clamping. Automatic changing of all turning tools from the standard magazine.

Automatic exchange of turn-tool holder in turn-tool adapter.

MCT – THE ULTRA-FLEXIBLE SERIES.

MCT – THE ULTRA-FLEXIBLE SERIES.

TECHNICAL DATA.

MCT (Metric System)	Unit	800	900		1000	1200	1250
							
Working range X|Y|Z (standard)	mm	1,250|1,000|1,250	1,600|1,400|1,800		2,200|1,400|1,800	2,500|1,800|2,100	2,800|2,200|2,100
Working range X|Y|Z (optional)	mm	1,600|1,200|1,600	1,800|1,500|1,800		2,200|1,500|1,800		2,800|2,200|2,500
Workpiece swing diameter Ø x h	mm	1,500x1,300	1,600x1,750		2,300x1,900	2,500x2,100	2,800x2,500
Pallet size (standard)	mm	800x800	800x1,000		1,000x1,250	1,000x1,250	1,000x1,250
Pallet size (optional)	mm	630x800, 800x1,000	800x800		1,000x1,600	1,400x1,600	1,400x1,600
Pallet load milling|turning	kg	2,500|2,000	3,500|2,500		5,000|4,000	7,000|4,000	7,000|4,000
Feed force X|Y|Z	kN	18|18|18	20|20|20		30|20|20	30|30|30	30|30|30
Rapid traverse X|Y|Z (standard axis travel)	m/min	65|65|65	65|65|65		50|60|60	50|50|50	50|50|50
Pa[1] X|Y|Z	mm	0,005	0,005		0,007	0,007	0,007
B-axis	degrees	360,000x0.001	360,000x0.001		360,000x0.001	360,000x0.001	360,000x0.001
Table speed milling|turning	rpm	20|500	20|500		10|300	10|300	10|300
Tilting torque	Nm	30,000	30,000		45,000	45,000	45,000
Tangential torque	Nm	14,000	20,000		40,000	40,000	40,000
Table power 100 % duty rating	kW	47	50		55	55	55
Table torque 100 % duty rating	Nm	2,500	2,900		4,200	4,200	4,200
Spindle power 100 % duty rating	kW	41	41		41	41	41
Spindle torque 100 % duty rating	Nm	1,400	1,400		1,400	1,400	1,400
Spindle speed	rpm	20 – 8,000	20 – 8,000		20 – 8,000	20 – 8,000	20 – 8,000
Gear steps		2	2		2	2	2
Bearing diameter main spindle	mm	110	110		110	110	110
Tool adapter (standard)		HSK-A 100	HSK-A 100		HSK-A 100	HSK-A 100	HSK-A 100
Tool adapter (optional)		ISO 50	ISO 50		ISO 50	ISO 50	ISO 50
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608
Tool diameter	mm	125 / 350 (420 / 900)[2]	125 / 350 (420 / 900)[2]		125 / 350 (420 / 900)[2]	125 / 350 (420 / 900)[2]	125 / 350 (420 / 900)[2]
Tool length (optional)	mm	600 (900 / 1,200)	600 (900 / 1,200)		600 (900 / 1,200)	600 (900 / 1,200)	600 (900 / 1,200)
Tool weight (optional)	kg	60 (75)	60 (75)		60 (75)	60 (75)	60 (75)
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH, approximately	mm	9,300x6,700x4,300	10,400x7,600x5,200		11,000x9,300x5,200	11,700x9,900x6,000	11,700x9,900x6,000
Weight approximately	kg	36,000	42,000		50,000	57,000	60,000
Compatible machining units		HVP, HVC, A	HVP, HVC, A		HVP, HVC, A	HVP, HVC, A	HVP, HVC, A

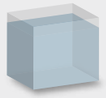
[1] according to VDI/DGQ 3441

[2] bar tool

Technical specifications are subject to change without prior notice.

MCT – THE ULTRA-FLEXIBLE SERIES.

TECHNICAL DATA.

MCT (Imperial System)	Unit	800	900		1000	1200	1250
							
Working range X|Y|Z (standard)	in	49.21|39.37|49.21	63.00|55.12|70.87		86.61|55.12|70.87	98.43|70.87|82.68	110.24|86.61|82.68
Working range X|Y|Z (optional)	in	63.00|47.24|63.00	70.87|59.06|70.87		86.61|59.06|70.87		110.24|86.61|98.43
Workpiece swing diameter Ø x h	in	59.06x51.18	63.00x68.90		90.55x74.80	98.43x82.68	110.24x98.43
Pallet size (standard)	in	31.50x31.50	31.50x39.37		39.37x49.21	39.37x49.21	39.37x49.21
Pallet size (optional)	in	31.50x39.37	31.50x31.50		39.37x63.00	55.12x63.00	55.12x63.00
Pallet load milling|turning	lbs	5,512|4,409	7,716|5,512		11,023|8,818	15,432|8,818	15,432|8,818
Feed force X|Y|Z	lb	4,047|4,047|4,047	4,496|4,496|4,496		6,744|4,496|4,496	6,744|6,744|6,744	6,744|6,744|6,744
Rapid traverse X|Y|Z (standard axis travel)	in/min	2,559|2,559|2,599	2,559|2,559|2,599		1,969|2,362|2,362	1,969|1,969|1,969	1,969|1,969|1,969
Pa[1] X|Y|Z	in	0.000197	0.000197		0.000276	0.000276	0.000276
B-axis	degrees	360,000x0.001	360,000x0.001		360,000x0.001	360,000x0.001	360,000x0.001
Table speed milling|turning	rpm	20|500	20|500		10|300	10|300	10|300
Tilting torque	lb/in	265,522	265,522		398,284	398,284	398,284
Tangential torque	lb/in	123,910	177,015		354,030	354,030	354,030
Table power 100 % duty rating	HP	63	67		74	74	74
Table torque 100 % duty rating	lb/in	22,127	25,667		37,173	37,173	37,173
Spindle power 100 % duty rating	HP	55	55		55	55	55
Spindle torque 100 % duty rating	lb/in	12,391	12,391		12,391	12,391	12,391
Spindle speed	rpm	20 – 8,000	20 – 8,000		20 – 8,000	20 – 8,000	20 – 8,000
Gear steps		2	2		2	2	2
Bearing diameter main spindle	in	4.3307	4.3307		4.3307	4.3307	4.3307
Tool adapter (standard)		HSK-A 100	HSK-A 100		HSK-A 100	HSK-A 100	HSK-A 100
Tool adapter (optional)		ISO 50	ISO 50		ISO 50	ISO 50	ISO 50
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608
Tool diameter	in	4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]		4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]	4.92 / 13.78 (16.54 / 35.43)[2]
Tool length (optional)	in	23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)		23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)	23.62 (35.43 / 47.24)
Tool weight (optional)	lbs	132.3 (165.3)	132.3 (165.3)		132.3 (165.3)	132.3 (165.3)	132.3 (165.3)
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH, approximately	in	366x264x169	409x299x205		433x366x205	461x390x236	461x390x236
Weight approximately	lbs	79,360	92,590		110,230	125,660	132,270
Compatible machining units		HVP, HVC, A	HVP, HVC, A		HVP, HVC, A	HVP, HVC, A	HVP, HVC, A

[1] according to VDI/DGQ 3441

[2] bar tool

Technical specifications are subject to change without prior notice.

MCR.

SLIDE-GUIDED MACHINING CENTRES.

The perfect solution for all applications calling for heavy-duty cutting with optimum damping characteristics, coupled with high-precision fine machining. BW offers seven different types up to 4,800 mm workpiece swing diameter and up to 20,000 kg payload.

MCR – THE ULTRA-HEAVY SERIES.

PURE POWER FOR DIFFICULT MACHINING TASKS.

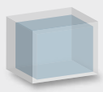
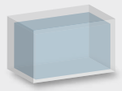
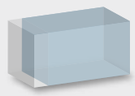
MCR machining centres are very robustly dimensioned and feature high-performance spindle units. In addition to the cast-iron gantry column, extra-wide laser-hardened sliding guides guarantee optimum damping characteristics during machining of difficult materials as well as very high long-term precision due to extremely low surface pressures.

The extra-wide sliding guides are hand-scraped by experienced specialists and designed all-round as sliding guides.

The particularly large guide length and width of the thermally inert cast-iron gantry column guarantee high stability, even when machining in high spindle positions.

MCR – THE ULTRA-HEAVY SERIES.

TECHNICAL DATA.

MCR (Metric System)	Unit	800	900		1000	1100	1200	1400	1600
									
Working range X|Y|Z (standard)	mm	1,250|900|1,250	1,600|1,250|1,250		2,200|1,250|1,250	1,600|1,250|1,250	2,400|1,800|1,800	3,200|1,800|1,800	3,500|2,200|2,100
Working range X|Y|Z (optional)	mm	1,250|900|1,600	1,600|1,500|1,600		2,400|1,500|1,600	1,600|1,500|1,600	2,800|2,200|2,100	3,500|2,200|2,100	4,100|2,200|2,100
Workpiece swing diameter Ø x h	mm	1,500x1,300	1,700x1,750		2,200x1,900	1,700x1,750	2,800x2,100	3,200x2,300	3,500x2,600
Pallet size (standard)	mm	800x800	800x1,000		1,000x1,250	800x1,000	1,000x1,250	1,600x1,600	2,000x2,000
Pallet size (optional)	mm	630x800, 800x1,000	800x800		1,000x1,600	800x800	1,400x1,600	1,600x2,000	2,000x2,500
Pallet load (optional)	kg	2,500	3,500		5,000	4,000	7,000	12,000 (14,000)	18,000 (20,000)
Feed force X|Y|Z	kN	17|17|17	20|20|20		30|20|20	25|25|25	30|30|30	30|30|30	30|30|30
Rapid traverse X|Y|Z (standard axis travel)	m/min	30|30|30	30|30|30		20|30|30	30|30|30	20|20|20	30|20|20	30|20|20
Pa[1] X|Y|Z	mm	0,005	0,005		0,007	0,005	0,007	0,007	0,007
B-axis	degrees	360,000x0.001	360,000x0.001		360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001
Table speed	rpm	25	20		10	20	10	8	6
Tilting torque	Nm	26,000	40,000		60,000	40,000	60,000	100,000	100,000
Tangential torque	Nm	16,000	25,000		40,000	25,000	40,000	60,000	60,000
Spindle power 100 % duty rating (optional)[3]	kW	41	41		41	52	41 (60)	41 (60)	41 (60)
Torque 100 % duty rating (optional)[3]	Nm	1,220	1,220		1,220	1,720	1,220 (3,500)	1,220 (3,500)	1,220 (3,500)
Speed range 2 gear steps (optional)	rpm	20 – 5,500 (7,000)	20 – 5,500 (7,000)		20 – 5,500 (7,000)	20 – 5,500 (7,000)	20 – 5,500 (7,000)	20 – 5,500 (7,000)	20 – 5,500 (7,000)
Speed range 4 gear steps (optional)	rpm						20 – 4,000 (5,000)	20 – 4,000 (5,000)	20 – 4,000 (5,000)
Speed range optional swivel spindle	rpm	8,000	8,000		8,000		8,000	8,000	8,000
Gear steps (optional)		2	2		2	2	2 (4)	2 (4)	2 (4)
Bearing diameter main spindle (optional)[3]	mm	120	120		120	120	120 (130)	120 (130)	120 (130)
Tool adapter (standard)		HSK-A 100	HSK-A 100		HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100
Tool adapter (optional)		ISO 50	ISO 50		ISO 50	ISO 50	ISO 50	ISO 50	ISO 50
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608	128 – 608	128 – 608
Tool diameter	mm	125/350 (420/900)[2]	125/350 (420/900)[2]		125/350 (420/900)[2]	125/350 (420/900)[2]	125/350 (420/900)[2]	125/350 (420/900)[2]	125/350 (420/900)[2]
Tool length (optional)	mm	600 (900/1,200)	600 (900/1,200)		600 (900/1,200)	600 (900/1,200)	600 (900/1,200)	600 (900/1,200)	600 (900/1,200)
Tool weight (optional)	kg	60 (75)	60 (75)		60 (75)	60 (75)	60 (75)	60 (75)	60 (75)
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH, approximately	mm	9,300x6,700x4,200	10,400x7,600x5,200		11,000x9,300x5,200	10,400x7,600x5,200	11,700x9,900x6,000	14,700x10,900x6,000	15,700x10,900x6,000
Weight approximately	kg	35,000	41,000		49,000	47,000	59,000	71,000	91,000
Compatible machining units		H, HVP, HVC	H, HVP, HVC		H, HVP, HVC	H	H, HVP, HVC	H, HVP, HVC,	H, HVP, HVC,

[1] according to VDI/DGQ 3441

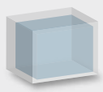
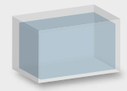
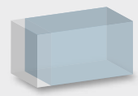
[2] bar tool

[3] 4 gear steps

Technical specifications are subject to change without prior notice.

MCR – THE ULTRA-HEAVY SERIES.

TECHNICAL DATA.

MCR (Imperial System)	Unit	800	900		1000	1100	1200	1400	1600
									
Working range X|Y|Z (standard)	in	49.21|35.43|49.21	63.00|49.21|49.21		86.61|49.21|49.21	63.00|49.21|49.21	94.49|70.87|70.87	126.00|70.87|70.87	137.80|86.61|82.68
Working range X|Y|Z (optional)	in	49.21|35.43|63.00	63.00|59.10|63.00		94.49|59.10|63.00	63.00|59.10|63.00	110.24|86.61|82.68	137.80|86.61|82.68	161.42|86.61|82.68
Workpiece swing diameter Ø x h	in	59.10x51.18	66.93x68.90		86.61x74.80	66.93x68.90	110.24x82.68	126.00x90.55	137.80x102.36
Pallet size (standard)	in	31.50x31.50	31.50x39.37		39.37x49.21	31.50x39.37	39.37x49.21	63.00x63.00	78.74x78.74
Pallet size (optional)	in	31.50x39.37	31.50x31.50		39.37x63.00	31.50x31.50	55.12x63.00	63.00x78.74	78.74x98.43
Pallet load (optional)	lbs	5,512	7,716		11,023	8,818	15,432	26,455	44,092
Feed force X|Y|Z	lb	3,822|3,822|3,822	4,496|4,496|4,496		6,744|4,496|4,496	5,620|5,620|5,620	6,744|6,744|6,744	6,744|6,744|6,744	30|30|30
Rapid traverse X|Y|Z (standard axis travel)	in/min	1,181|1,181|1,181	1,181|1,181|1,181		787|1,181|1,181	1,181|1,181|1,181	787|787|787	1,181|787|787	1,181|787|787
Pa[1] X|Y|Z	in	0.000197	0.000197		0.000276	0.000197	0.000276	0.000276	0.000276
B-axis	degrees	360,000x0.001	360,000x0.001		360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001	360,000x0.001
Table speed	rpm	25	20		10	20	10	8	6
Tilting torque	lb/in	230,120	354,030		531,045	354,030	531,045	885,075	885,075
Tangential torque	lb/in	141,612	221,270		354,030	221,270	354,030	531,045	531,045
Spindle power 100 % duty rating (optional)[3]	HP	55	55		55	70	55 (80)	55 (80)	55 (80)
Torque 100 % duty rating (optional)[3]	lb/in	10,798	10,798		10,798	15,223	10,798 (30,978)	10,798 (30,978)	10,798 (30,978)
Speed range 2 gear steps (optional)	rpm	20 – 5,500 (10,000)	20 – 5,500 (10,000)		20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)	20 – 5,500 (10,000)
Speed range 4 gear steps (optional)	rpm						20 – 4,000 (5,000)	20 – 4,000 (5,000)	20 – 4,000 (5,000)
Speed range optional swivel spindle	rpm	8,000	8,000		8,000		8,000	8,000	8,000
Gear steps (optional)		2	2		2	2	2 (4)	2 (4)	2 (4)
Bearing diameter main spindle (optional)[3]	in	4.7244	4.7244		4.7244	4.7244	4.7244 (5.1181)	4.7244 (5.1181)	4.7244 (5.1181)
Tool adapter (standard)		HSK-A 100	HSK-A 100		HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100
Tool adapter (optional)		ISO 50	ISO 50		ISO 50	ISO 50	ISO 50	ISO 50	ISO 50
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608	128 – 608	128 – 608
Tool diameter	in	4.92/13.78 (16.54/35.43)[2]	4.92/13.78 (16.54/35.43)[2]		4.92/13.78 (16.54/35.43)[2]	4.92/13.78 (16.54/35.43)[2]	4.92/13.78 (16.54/35.43)[2]	4.92/13.78 (16.54/35.43)[2]	4.92/13.78 (16.54/35.43)[2]
Tool length (optional)	in	23.62 (35.43/47.24)	23.62 (35.43/47.24)		23.62 (35.43/47.24)	23.62 (35.43/47.24)	23.62 (35.43/47.24)	23.62 (35.43/47.24)	23.62 (35.43/47.24)
Tool weight (optional)	lbs	132.3 (165.3)	132.3 (165.3)		132.3 (165.3)	132.3 (165.3)	132.3 (165.3)	132.3 (165.3)	132.3 (165.3)
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH, approximately	in	366x264x165	409x299x205		433x366x205	409x299x205	461x388x236	579x429x236	618x429x236
Weight approximately	lbs	77,160	90,390		108,020	103,610	130,070	156,520	200,620
Compatible machining units		H, HVP, HVC	H, HVP, HVC		H, HVP, HVC	H	H, HVP, HVC	H, HVP, HVC,	H, HVP, HVC,

[1] according to VDI/DGQ 3441

[2] bar tool

[3] 4 gear steps

Technical specifications are subject to change without prior notice.

MCµ.

ULTRA-PRECISE MACHINING CENTRES.

Machines of the MCµ series are designed for ultimate precision and long-term accuracy. Close to µ accuracy and – as always at BW – not just on the day of commissioning, but over many years of use. The MCµ series is no standard machine trimmed for accuracy. The MCµ is based much more on a fundamentally new concept. Because the final µ is the result of many specific individual measures, such as careful design, best materials, strict production methods and very experienced employees.

MCµ: Accuracy by design, not compensation.

MCµ – THE ULTRA-PRECISE SERIES.

WHEN ACCURATE IS NOT ACCURATE ENOUGH.

The MCµ provides tightest geometric tolerances (positioning, flatness, radial eccentricity, concentricity, angularity, repositioning) for the most demanding applications. The basis for long-term accuracy is maximum stability from the ground up. High guide bars, FEM-optimised structures cast from mineral casting material, a thermally inert system and active tempering are examples of the many measures taken. BW's very high degree of vertical integration in all core components is decisive for the successful implementation of such accurate machines.

Hand-crafted perfection is reflected in the guide supports, which are refiled by hand. The last µ is obtained in this way.

Ideal technical conditions: high-precision machining in-house in production halls air-conditioned to ±1 °C and an integrated, thermally symmetrical measuring machine in the same climatic environment for component measurement.

MCμ – THE ULTRA-PRECISE SERIES.

TECHNICAL DATA.

MCμ (Metric System)	Unit	800	900		1000	1200	1250
							
Working range X|Y|Z	mm	1,250|1,000|1,250	1,600|1,400|1,600		2,200|1,400|1,800	2,500|1,800|1,800	2,800|1,800|2,100
Workpiece swing diameter Ø x h	mm	1,500x1,300	1,600x1,750		2,300x1,900	2,500x2,100	2,800x2,500
Pallet size (optional)	mm	800x800, 630x800	800x1,000, 800x800		1,000x1,250	1,000x1,250	1,000x1,250
Pallet load	kg	2,500	3,000		5,000	6,000	7,000
Feed force X|Y|Z	kN	15|15|15	20|20|20		20|20|20	25|25|25	25|25|25
Rapid traverse X|Y|Z (standard axis travel)	m/min	30|30|30	30|30|30		30|30|30	30|30|30	30|30|30
Table speed	rpm	15	10		6	6	6
Tilting torque	Nm	20,000	35,000		55,000	55,000	55,000
Tangential torque	Nm	12,000	20,000		35,000	35,000	35,000
Spindle power 100 % duty rating	kW	32	32		32	32	32
Torque 100 % duty rating	Nm	610	610		610	610	610
Speed range	rpm	20 – 6,000	20 – 6,000		20 – 6,000	20 – 6,000	20 – 6,000
Bearing diameter main spindle	mm	120	120		120	120	120
Spindle radial runout	mm	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002
Spindle axial runout	mm	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH approximately	mm	8,600x6,100x4,700	9,800x6,500x5,100		10,200x7,200x5,300	10,600x7,800x5,400	11,600x8,600x5,400
Weight approximately	kg	38,000	44,000		52,000	59,000	62,000
ACCURACY according to VDI/DGQ 3441							
P X|Y|Z	mm	0.004	0.004		0.005	0.005	0.005
Pa X|Y|Z	mm	0.003	0.003		0.004	0.004	0.004
Us X|Y|Z	mm	0.002	0.002		0.003 X | 0.002 Y, Z	0.003	0.003
P, B	arcsec	3	3		3	3	3
Pa, B	arcsec	2	2		2	2	2
Us, B	arcsec	2	2		2	2	2
ANGULARITY of the linear axes X|Y|Z	mm	< 0.005|1,000	< 0.005|1,000		< 0.006|1,000 X < 0.005|1,000 Y, Z	< 0.006|1,000	< 0.006|1,000
STRAIGHTNESS of the linear axes X|Y|Z	mm	< 0.004	< 0.005		< 0.007 X, < 0.005 Y, Z	< 0.008	< 0.008
EXCHANGING REPEATABILITY of pallets	mm	< 0.008	< 0.008		< 0.010	< 0.010	< 0.010

Technical specifications are subject to change without prior notice.

MCμ – THE ULTRA-PRECISE SERIES.

TECHNICAL DATA.

MCμ (Imperial System)	Unit	800	900		1000	1200	1250
							
Working range X|Y|Z	in	49.21|39.37|49.21	63.00|55.12|63.00		86.61|55.12|70.87	98.43|70.87|70.87	110.24|70.87|82.68
Workpiece swing diameter Ø x h	in	59.06 x 51.18	63.00 x 68.90		90.55 x 74.80	98.43 x 82.68	110.24 x 98.43
Pallet size (optional)	in	31.50 x 31.50, 24,80 x 31.50	31.50 x 39.37, 31.50 x 31.50		39.37 x 49.21	39.37 x 49.21	39.37 x 49.21
Pallet load	lbs	4,409	6,614		11,023	13,228	15,432
Feed force X|Y|Z	lb	3,372|3,372|3,372	4,496|4,496|4,496		4,496|4,496|4,496	5,620|5,620|5,620	5,620|5,620|5,620
Rapid traverse X|Y|Z (standard axis travel)	in/min	1,181|1,181|1,181	1,181|1,181|1,181		1,181|1,181|1,181	1,181|1,181|1,181	1,181|1,181|1,181
Table speed	rpm	15	10		6	6	6
Tilting torque	lb/in	177,015	309,776		486,791	486,791	486,791
Tangential torque	lb/in	106,205	177,015		309,776	309,776	309,776
Spindle power 100 % duty rating	HP	43	43		43	43	43
Torque 100 % duty rating	lb/in	5,400	5,400		5,400	5,400	5,400
Speed range	rpm	20 – 6,000	20 – 6,000		20 – 6,000	20 – 6,000	20 – 6,000
Bearing diameter main spindle	in	4.7244	4.7244		4.7244	4.7244	4.7244
Spindle radial runout	in	< 0.0000787	< 0.0000787		< 0.0000787	< 0.0000787	< 0.0000787
Spindle axial runout	in	< 0.0000787	< 0.0000787		< 0.0000787	< 0.0000787	< 0.0000787
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH approximately	in	339 x 240 x 185	386 x 256 x 201		402 x 283 x 209	417 x 307 x 213	457 x 339 x 213
Weight approximately	lbs	83,780	97,000		114,640	130,070	136,680
ACCURACY according to VDI/DGQ 3441							
P X|Y|Z	in	0.000157	0.000157		0.000197	0.000197	0.000197
Pa X|Y|Z	in	0.000118	0.000118		0.000157	0.000157	0.000157
Us X|Y|Z	in	0.000079	0.000079		0.000118 X 0.000079 Y, Z	0.000118	0.000118
P, B	arcsec	3	3		3	3	3
Pa, B	arcsec	2	2		2	2	2
Us, B	arcsec	2	2		2	2	2
ANGULARITY of the linear axes X|Y|Z	in	< 0.000197|39.37	< 0.000197|39.37		< 0.000236|39.37 X < 0.000197|39.37 Y, Z	< 0.000236|39.37	< 0.000236|39.37
STRAIGHTNESS of the linear axes X|Y|Z	in	< 0.000157	< 0.000197		< 0.000276 X < 0.000197 Y, Z	< 0.000315	< 0.000315
EXCHANGING REPEATABILITY of pallets	in	< 0.000315	< 0.000315		< 0.000394	< 0.000394	< 0.000394

Technical specifications are subject to change without prior notice.

MCC.

COMPACT. POWERFUL. UNCOMPROMISINGLY BW.

With a compact and small footprint, the machines of the MCC series are the smallest BW manufactures. This certainly applies only to the overall machine sizes. Because under the hood lurks uncompromisingly a bullish workhorse. Mercilessly strong and extremely economical.

The MCC is a true BURKHARDT+WEBER and sets new standards for its size range in regard to accuracy, superior rigidity and dependable reliability.

The MCC is available as stand-alone machining centre or ready for integration into automation systems.

CASH COW WITH BW GENES.

Pure Power. No compromises. Its attractive price and its excellent total cost of ownership provide the user with outstanding cost-effectiveness in series production. This is achieved by standardising, a well thought design and latest state-of-the-art technologies. Just everything that makes a true BURKHARDT+WEBER.

MCC – THE ULTRA-COMPACT SERIES.

High torque geared spindle for uncompromised machining.

Direct driven spindle with A-axis configuration for 5-axis machining.

MCC – THE ULTRA-COMPACT SERIES.

TECHNICAL DATA.

MCC (Metric System)	Unit	630	800
			
Working range up to X|Y|Z (standard)	mm	1,100|900|1,100	1,400|1,200|1,400
Working range up to X|Y|Z (optional)	mm	1,100|900|1,300	1,400|1,200|1,600
Workpiece swing diameter Ø x H	mm	1,100x1,300	1,500x1,500
Pallet size (standard)	mm	630x630	800x800
Pallet size (optional)	mm	630x800	800x1,000, 1,000x1,000
Max. pallet loading (workpiece + fixture)	kg	1,500	2,500
Feed force X|Y|Z	kN	17.5|17.5|17.5	17.5|17.5|17.5
Rapid traverse X|Y|Z (standard strokes)	m/min	60|60|60	60|60|60
Pa[1] X|Y|Z	mm	0.007	0.007
B-axis	degrees	360,000x0.001	360,000x0.001
Table speed milling | turning	rpm	40 | 700	40 | 650
Tilting moment	Nm	26,000	28,000
Tangential torque	Nm	8,000	10,000
MOTOR SPINDLE			
Spindle power, 100 % duty cycle	kW	30	30
Max. torque, 100 % duty cycle	Nm	300	300
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	20 – 6,000 (10,000)
GEAR SPINDLE			
Spindle power, 100 % duty cycle	kW	41	41
Max. torque, 100 % duty cycle	Nm	1,300	1,300
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	20 – 6,000 (10,000)
SWIVEL SPINDLE			
Spindle power, 100 % duty cycle	kW	30	30
Max. torque, 100 % duty cycle	Nm	300	300
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	20 – 6,000 (10,000)
Swivel range	degrees	+45 / -110	+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)	45,000 (25,000)
Number of tool positions		64 – 128	64 – 320
Tool diameter	mm	125 (350)	125 (350)
Tool length	mm	650	650
Max. tool weight (optional)	kg	30 (40)	30 (40)
Min. chip-to-chip time	s	5	6
Min. pallet change time	s	12	20
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl
Installation area, LxWxH, approximately	mm	8,000x3,300x3,500	8,800x3,500x3,800
Weight, approximately	kg	27,000	30,000

[1] according to VDI/DGQ 3441

MCC (Imperial System)	Unit	630	800
			
Working range up to X|Y|Z (standard)	in	43.31|35.43|43.31	55.12|47.24|55.12
Working range up to X|Y|Z (optional)	in	43.31|35.43|51.18	55.12|47.24|62.99
Workpiece swing diameter Ø x H	in	43.31x51.18	59.06x59.06
Pallet size (standard)	in	24.80 X 24.80	31.50x31.50
Pallet size (optional)	in	24.80x31.50	31.50x39.37, 39.37x39.37
Max. pallet loading (workpiece + fixture)	lbs	3,307	5,512
Feed force X|Y|Z	lb	3,934|3,934|3,934	3,934|3,934|3,934
Rapid traverse X|Y|Z (standard strokes)	in/min	2,362|2,362|2,362	2,362|2,362|2,362
Pa[1] X|Y|Z	in	0.00028	0.00028
B-axis	degrees	360,000x0.001	360,000x0.001
Table speed milling | turning	rpm	40 | 700	40 | 650
Tilting moment	lb/in	230,120	247,820
Tangential torque	lb/in	70,806	88,507
MOTOR SPINDLE			
Spindle power, 100 % duty cycle	HP	40	40
Max. torque, 100 % duty cycle	lb/in	2,655	2,655
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	20 – 6,000 (10,000)
GEAR SPINDLE			
Spindle power, 100 % duty cycle	HP	55	55
Max. torque, 100 % duty cycle	lb/in	11,506	11,506
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	20 – 6,000 (10,000)
SWIVEL SPINDLE			
Spindle power, 100 % duty cycle	HP	40	40
Max. torque, 100 % duty cycle	lb/in	2,655	2,655
Standard speed range (optional)	rpm	20 – 6,000 (10,000)	20 – 6,000 (10,000)
Swivel range	degrees	+45 / -110	+45 / -110
Tool holder (standard)		HSK-A100	HSK-A100
Tool holder (optional)		ISO 50	ISO 50
Tool clamping force, HSK-A100 (ISO 50)	lb	10,116 (5,620)	10,116 (5,620)
Number of tool positions		64 – 128	64 – 320
Tool diameter	in	4.92 (13.78)	4.92 (13.78)
Tool length	in	25.59	25.59
Max. tool weight (optional)	lbs	66.14 (88.18)	66.14 (88.18)
Min. chip-to-chip time	s	5	6
Min. pallet change time	s	12	20
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl
Installation area, LxWxH, approximately	in	315x130x137.8	346.5x137.8x149.6
Weight, approximately	lbs	59,525	66,139

STRONG SERVICE. WELL ADVISED.

At some point, even the best machine needs service from specialists. Fast, competent and solution-oriented. BW field-service support is exclusively provided by its own, frequently re-trained and well experienced inside crew. These are equipped with state-of-the-art tools, measuring equipment and communication tools, and further backed up by our centralised remote service team.

HOTLINE AND REMOTE DIAGNOSTICS.
Experienced service technicians take your order on the hotline and provide expert advice. Quick online connections to your BW machine give you immediate troubleshooting support for targeted service and parts support. All control generations with test facilities are readily available for fault simulation in our hotline department.

Smart Maintenance is BW's approach to helping you more effectively wherever you are in the world. For this purpose, BW now also uses mixed reality tools – a technology that expands your real world with interactive 3D objects and our hotline team. You share what you see and we solve the problem together.

+ Quick established online presence.
+ Increased machine availability.
+ Remote LOG file download & access to all CNC control levels.
+ Access to machine periphery controls, as for example for the coolant system.
+ Increasing efficiency of your maintenance staff.
+ Targeted preparation of on-site service calls.
+ Mixed reality with Hololens advances the services towards lower cost and quicker resolutions.

You can reach our hotline and service department Monday – Friday 7:00 AM to 10:00 PM MEZ and Saturday 8:00 AM to 3:00 PM MEZ by telephone **+49 7121 315-395** and **+49 7121 315-386** (Sales Service).

MAINTENANCE AND REPAIR.
You have high-quality BW machines and want to avoid unplanned production losses – our specialists maintain your machine according to our comprehensive checklist. They establish a health record; suggest planned repairs and maintenance in advance. Because most machine failures and unplanned down-times are due to lack of maintenance. Regularly performed maintenance quickly pays off by improving machine up-times. BW offers maintenance contracts with graduated services upon request.

+ Planned service calls and machine stops.
+ Optimal machine maintenance for highest production quality.
+ Reduction of unplanned down-times with predictive maintenance.
+ Detailed information about the condition of your machine.
+ Execution by top-qualified BW specialists.
+ Fast payback.
+ Attractive annual maintenance contracts.
+ Graduated services based on your in-house contribution.

RETROFIT.
Experienced specialists overhaul, supplement and modernise all older BW machines. Even after a long run BW machines have a very good base substance. The performance is significantly increased by modernising drives and controls, the flexibility is enhanced by implementing new systems for process monitoring or other additional features.
The linking of older machines to the IIoT (industrial internet of things) is an easy task. The result is that older machines can also collect data that provides the basis for additional time saving measures.

This results in:
+ The visualisation of the machine status.
+ The recording of selected key data.
+ Real-time management reports.
+ And more.

SPARE PARTS.
The SAP-managed service security stocks guarantee fast access and thus short delivery times. A dedicated spare parts team advises you competently and ensures prompt delivery – if urgent, within 24h by land or air per express.

BW ACADEMY.
BW training programmes offered are machine-related and customer-specific. All courses are carried out by qualified instructors in small teams. They include hands-on training at the machine or are supported with simulators. Extensive training documents support sustainable success.


Professional consulting by our service technicians.


Smart Maintenance with Hololens.

DIGITAL.

WITH BW MACHINES, YOU ARE WELL PREPARED FOR THE WORLD OF IIOT.

In addition to our tried-and-tested solutions such as centralised tool management and the planning of production orders, new features like predictive maintenance and Smart Service are the areas promising most value-added benefits in the future.

Only spindles that cut chips make money.

Using state-of-the-art technology, now machine condition data is accurately captured, analysed and interpreted. This data collection results to a digital foot print, the life cycle of the machine.

Supplemented by the digital fingerprint – conclusions can be drawn about the current state of the machine. As a result, important decisions to better maintain the machine, more cost-efficient and unplanned downtimes are kept to a minimum.

Should an intervention be necessary, the BW Smart Service concept goes to work. No matter where you are, using remote access or the latest mixed reality technology, we'll get your machine up and running again without delay. You can share what you see with us in real time and we solve the problem together.

BW.SMART.4.U.

EXPERIENCE BASED ON TRADITION.

1888 Founded by Louis Burkhardt and Johannes Weber as a textile and machine tool factory.

1923 Production of gang drills, column drilling machines and joint-shaft drilling machines.

1951 Delivery of the first serial production transfer system.

1959 Presentation of the world's first numerically controlled machining centre.

1984 Market introduction of the MC series machining centres with variable matrix, rack type tool magazines.

2012 Acquisition by Indústrias Romi S.A. Brazil on February 1, 2012.

2018 **130 YEARS** BURKHARDT+WEBER

Since 1888 BW manufactures machine tools in Reutlingen. BW is not only a manufacturer of many, but has repeatedly set internationally recognised impulses. In 1951, BURKHARDT+WEBER built the first transfer line in Europe. In 1959, they introduced the world's first NC-controlled machining centre with automatic tool change – at that time still with tape-reader control.

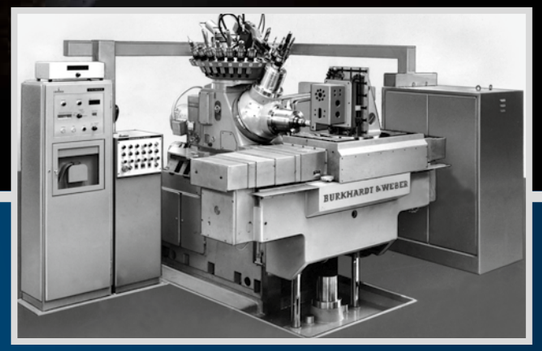
BW was one of the pioneers in digital control technology, had the first real rack-type magazine and is still the world leader in tool magazine technology – often copied, never reached. The automatic tool extension and many, many other BW developments that are what makes a typical BW machine.

To date, approximately 250 employees lead this long tradition, continued with the production of large, high-precision and individual machining centres. Permanent ongoing education and the use of most modern CAD and ERP systems ensure the technical lead.

Since 2012, BURKHARDT+WEBER is a member of the largest Brazilian machine tool manufacturer, Indústrias Romi S.A.

SINCE 1888.

1951 – Transfer line for machining swivel bearings.



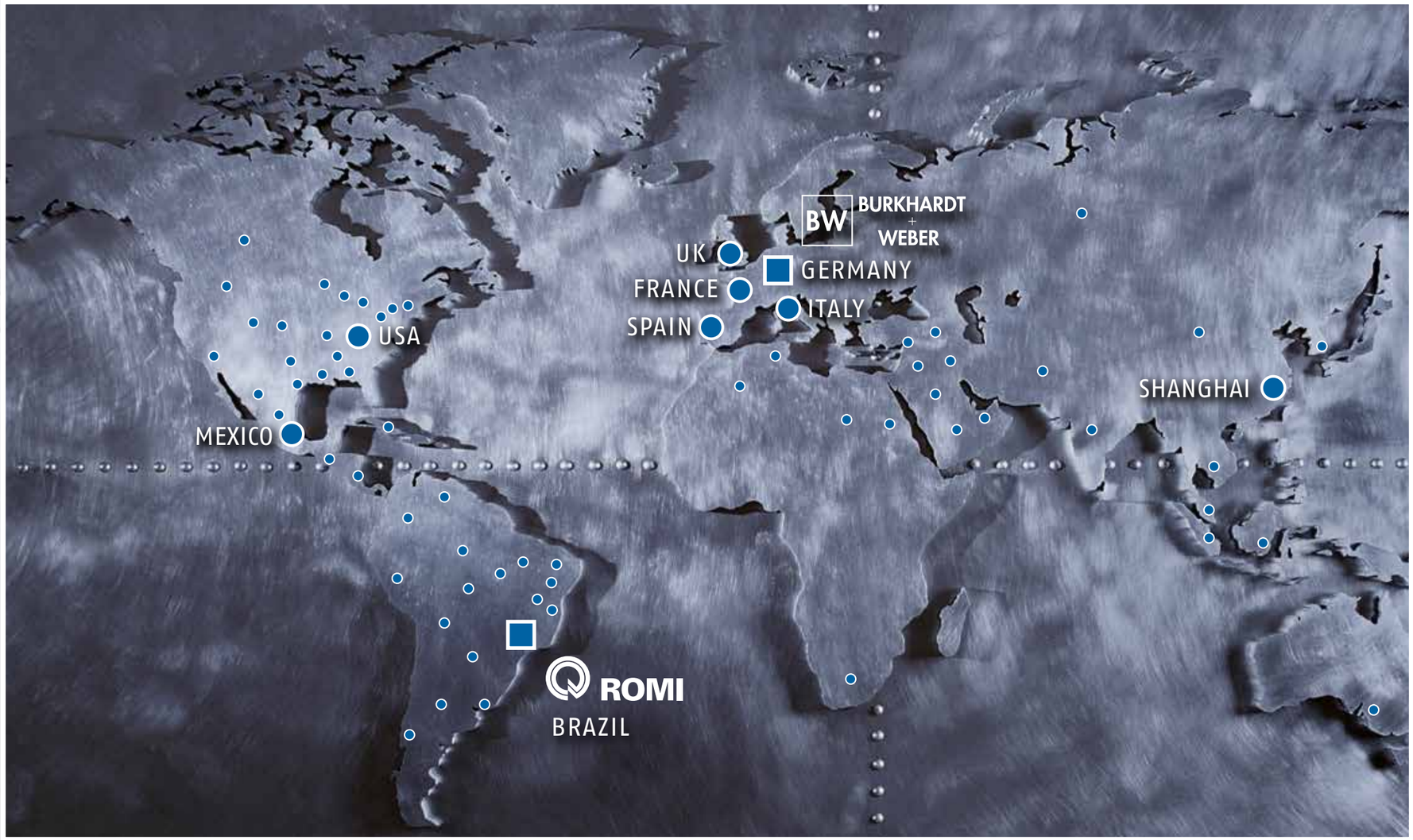
1959 – The first NC-controlled machining centre was delivered.

BW INTERNATIONAL.

AT HOME WORLDWIDE.
BURKHARDT+WEBER is highly recognised in the world of large machining centres. Internationally oriented, the Reutlingen-based company delivers machines and methods all around the globe – wherever highest quality is at demand. With its own sales and service locations, BW guarantees quick expert advice for new projects and reliable after sales support. In addition, BW maintains a dense network of global partners.

ROMI.
BURKHARDT+WEBER Fertigungssysteme GmbH is part of Indústrias ROMI S.A., Brazil's largest machine tool manufacturer.
With some 2,000 employees, ROMI produces approximately 3,000 turning, milling, and heavy-duty cutting machines per year and operates its own foundries for series and single castings. Like BW, ROMI also has a very high degree of vertical integration and produces all machine tools based on the latest technical knowledge.

Reutlingen – headquarters and factory.



HOME BASED IN REUTLINGEN –
WORLDWIDE AT HOME.

Picture sources: BURKHARDT+WEBER, ROMI, fotolia, Liebherr, apollo 11, dimensionsreich.

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