SW Technology People

MACHINING CENTRES **BA W06-1W | BA W06-2W**

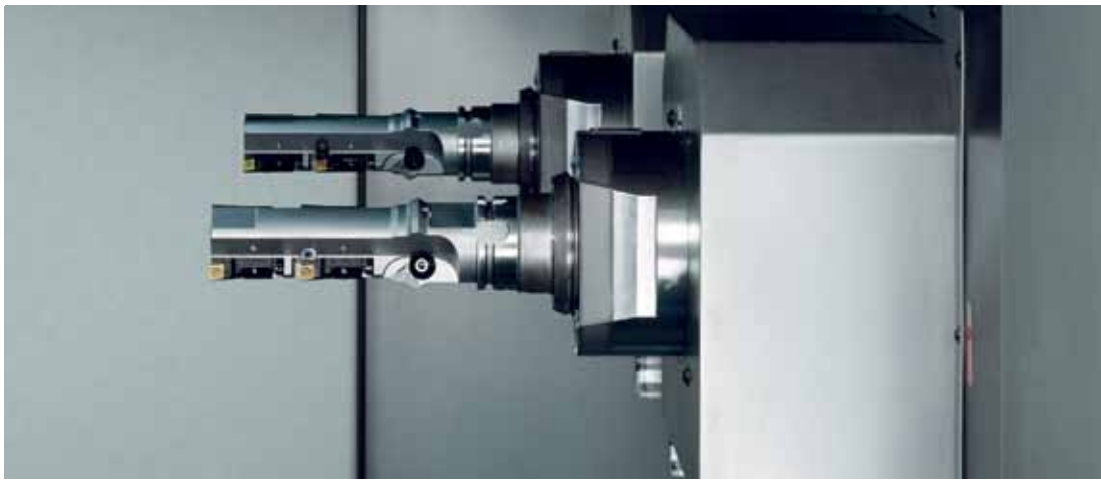
hspeed TECHNOLOGY QUBE construction SDrum architecture

PERFECT PERFORMANCE.

QUBE construction The BA W06 is one of the fastest machining centres available on the market. The patented monobloc (QUBE) designed as a stiff ‚cube' carries the 3-axis unit equipped with one or two spindles. The twinspindle BA W06-2W is available with two independent Z-axes. Faster and more dynamic due to linear motors in X, Y and Z-axis. Accelerations up to 3 g. The W-axis with integrated rotary axes carries the clamping fixture, moving parallel to the Z-axis from the loading area into the workzone.

SDrum architecture All a modern machining centre needs: absolute measuring systems in all axes, W-axis with a workpiece carrier, hydraulically clamped on both ends, driven by a torque motor. The effective Z travel is 725 mm for workpieces fitting into a circle of 800 mm diameter. A transport belt equipped with a lift loads the big workpieces into the overhead clamping fixture; alternatively the workpieces can be loaded via robots or gantry loader. The horizontal spindles ensure perfect chip flow and represent the optimum solution for dry machining.

BA W06-1W
BA W06-2W



- Machine bed designed as a monobloc patented by SW
- 1 or 2 spindles
- 3-axis unit as a box-in-box design
- Linear motors in X, Y and Z-axis
- 2-spindle machine with independent Z-axes
- Motor spindles up to 17,500 rpm
- W-axis guided on both sides, 2 ballscrews
- Central cooling unit
- Integrated, upgradable hydraulic system (250 bar)
- 4- or 5-axis machining
- Planetary tables with 1 / 2 satellites (torque motors)
- Workpieces hydraulically clamped
- Up to 10 hydraulic lines and 5 pneumatic lines
- Modular tool magazine, extensible from 42 to 216 pockets
- SW broken tool detection system in < 0.15 s
- Optimum accessibility to all assemblies 725 mm Z-axis travel
- 800 mm circle for workpieces

SUPERIOR TECHNOLOGY FOR MAXIMUM PRODUCTIVITY.

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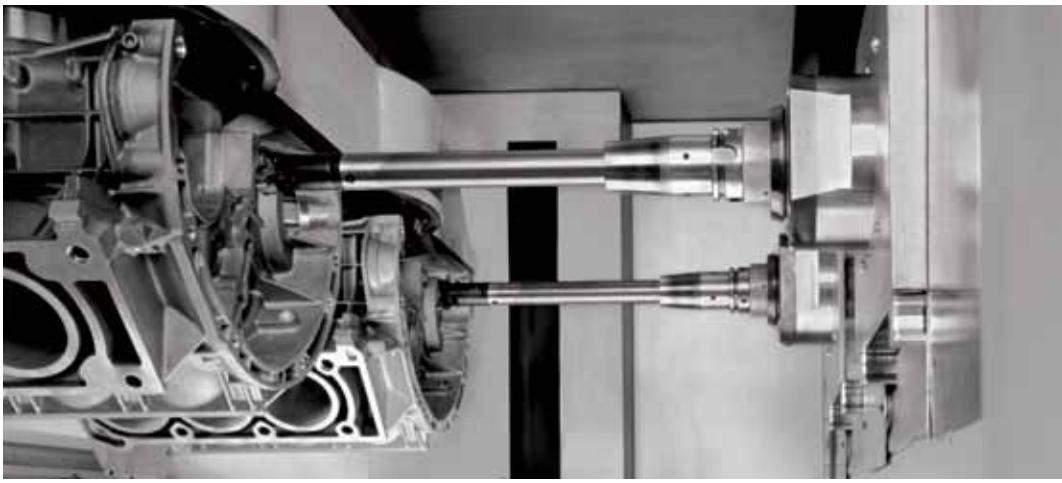
Complete machining in two set-ups. For medium and high volume production of complex, high-quality components. Wet or dry machining (oil mist lubrication). Fixture designed as clamping bridge or for planetary satellites. All satellites with torque drive and separate, direct measuring system. Can be retro-fitted at any time. Maximum accuracy and dynamics. Typically for 2 to 8 workpieces. Various tool magazine capacities, modular extension possible. Drilling/boring operations up to a tool length of 550 mm.

Productivity. Machining processes defined by experienced project engineers provide for optimum quality and cycle times for lowest cost-per-part and long-term quality results achievable in your production. As a stand-alone machine or as a turn-key facility, including automation and other processes. In our technology centre we test and optimize established and try out new techniques. No matter whether it is about new tools, hardware and software: we advance your cutting processes.

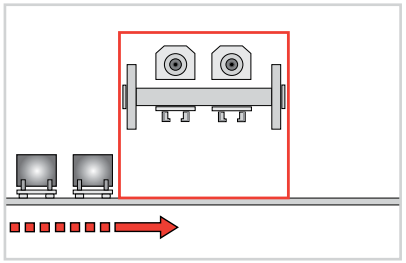


- For aluminium and non-magnetic material
- Rotary axes with torque motors and locking mechanism
- Coolant supply through the spindles up to 150 bar
- Additional coolers for all types of climate
- Clamping fixtures to be loaded direct and from the top
- Programmable flushing for clean clamping fixtures
- Optimum accessibility to all assemblies
- Time required for fixture change < 30 min
- Process design and simulation
- Fixture design and collision detection
- Tool trials
- Process development
- Process optimization on site and at SW
- Cost-per-part calculations
- Multi-spindle, 5-axis simultaneous machining
- Maintenance contracts and individual services
- Training at the SW-Academy
- SW Online Service, including Condition Monitoring

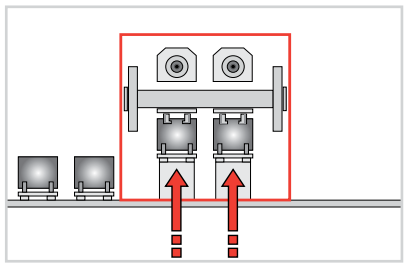
SEQUENCE

Automatic loading

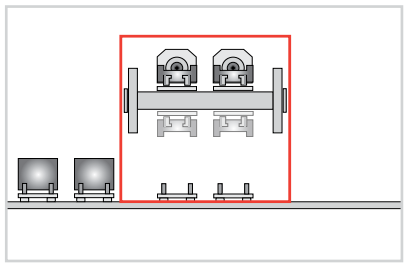
1. Workpiece pick-up from transport belt



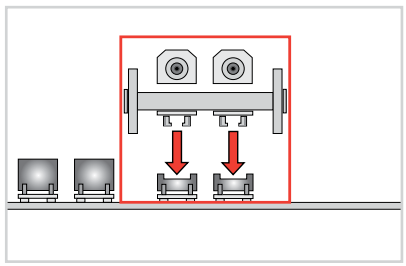
2. Loading via lift



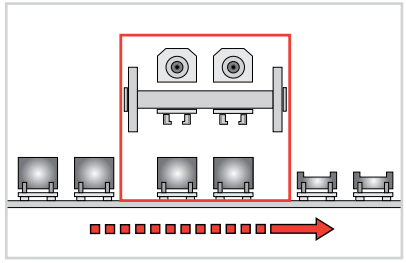
3. Machining (upright / overhead)



4. Unloading

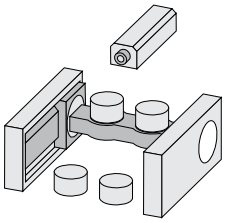


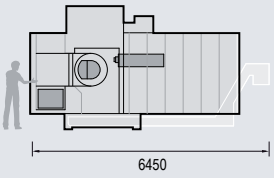
5. Shuttle to next parts

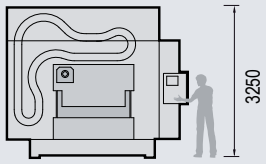


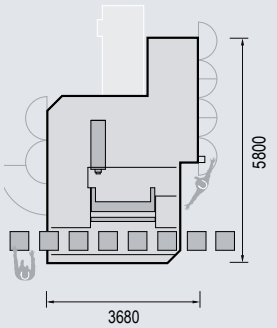
DIMENSIONS

BA W06-1W

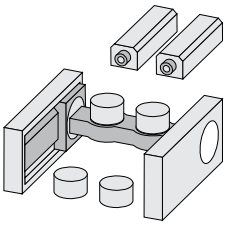


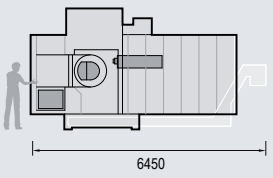


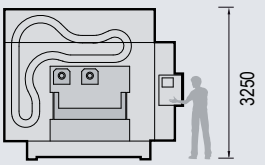


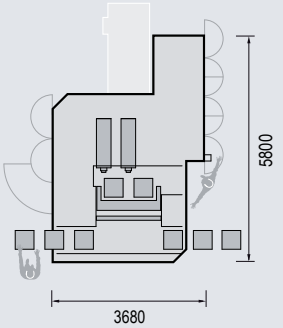


BA W06-2W









TECHNICAL DATA

	BA W06-1W	BA W06-2W
■ Working range		
X-axis	600 mm	600 mm
Y-axis (toolchange position)	600 mm (875 mm)	600 mm (875 mm)
Z-, Z_2-axis	500 mm	500 mm
W-axis	225 mm (1,000 mm)	225 mm (1,000 mm)
Spindle distance	600 mm	600 mm
■ Workpiece carrier		
W-axis parallel to Z-axis with integrated rotary axis (A-axis), prepared for holding fixture plates up to max.	Ø 800 mm x 1,430 mm	Ø 800 mm x 1,430 mm
Transport load	750 kg	750 kg
Rapid traverse of W-axis	75 m/min	75 m/min
Transport time W=0mm / W=-1.000 mm	1.2 s	1.2 s
Drive system A-axis	Torque motor	Torque motor
Speed range A-axis	1 - 50 rpm	1 - 50 rpm
C-axis*	2 satellites	2 satellites
■ Work spindle HSK - A63		
Speed range	1 - 17,500 rpm	1 - 17,500 rpm
Run up time n_{max}	0.7 s	0.7 s
Spindle bearings ø	80 mm	80 mm
Power / Torque (40% duty cycle)	2 x 35 kW / 2 x 80 Nm	2 x 35 kW / 2 x 80 Nm
■ Work spindle HSK - A80*		
Speed range	1 - 10,000 rpm	1 - 10,000 rpm
Run up time n_{max}	0.8 s	0.8 s
Spindle bearings ø	90 mm / 4	90 mm / 4
Power / Torque (40% duty cycle)	2 x 27 kW / 2 x 200 Nm	2 x 27 kW / 2 x 200 Nm
■ Feed drive		
Drive system	Linear motor	Linear motor
Rapid traverse X / Y / Z	100 m/min	100 m/min
Axis acceleration X / Y / Z	12 / 10 / 20 m/s^2	12 / 10 / 20 m/s^2
Max. feed thrust X / Y / Z	10,000 / 10,000 / 6,000 N	10,000 / 10,000 / 2 x 5,000 N
■ Accuracy (according to VDI/DGQ 3441)		
Position measuring system	Direct, absolute	Direct, absolute
Positioning tolerance X / Y / Z	Tp=0.008 mm	Tp=0.008 mm
■ Tool magazine		
Toolchange system	Pick-Up	Pick-Up
Capacity HSK - A63	2 x 42 (2 x 72)*	2 x 42 (2 x 72, 2 x 108)*
Capacity HSK - A80*	2 x 35 / 2 x 60	2 x 35 / 2 x 60
Max. tool ø	80 mm / 160 mm (free adjacent pocket)	80 mm / 160 mm (free adjacent pocket)
Max. tool length	550 mm	550 mm
Max. tool weight	10 kg	10 kg
■ Toolchange		
Chip-to-chip time**	approx. 2.75 s	approx. 2.75 s
■ Weight / Dimensions		
Total weight	approx. 20,000 kg	approx. 20,000 kg
Transport dimensions W x H x T	3.68 m x 3.25 m x 5.80 m	3.68 m x 3.25 m x 5.80 m
Machine installed W x H x T	4.80 m x 3.30 m x 8.10 m	4.80 m x 3.30 m x 8.10 m
■ Connected load		
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C network	3 x 400 Volt, 50 Hz, TN-S/TN-C network
Total connected load	approx. 133 kVA	approx. 133 kVA
Mean air consumption	1.0 Nm^3/min (7 bar)	1.0 Nm^3/min (7 bar)
■ CNC control system		
Siemens	SINUMERIK 840 D	SINUMERIK 840 D

*Specification depends on machine equipment. The illustrations shown in this brochure may vary from actual facts showing additional or special equipment. ** Determined according to SW works standard WN-9665801. See also www.sw-machines.de.

TECHNOLOGY PEOPLE: FORWARD THINKING.

There are quite many who build machining centres. But only a few take such intensive and successful care of the entire technological demand of your project like we do. The highest priority is given to deliver the best economical and sustainable solution for your manufacturing task. Which machine model ends up being the right one and how it will be applied most effectively, depends on your requirements for materials to be machined, quality and production volumes.

We proclaim to be 'Technology People'. This is more than building machine tools. Competent counsel in all technological and commercial questions from 'A' like Automation to 'Z' like Z-axis thrust. All topics are addressed before the first chip falls. We provide cost-per-part calculations and we are flexible in crafting your project finance. So your decision for SW as your preferred business partner is based on dependable data. We dev elop our machines from the inside out to make sure it is tailored for its future effective use in your plant.

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