

MACHINING CENTRES **BA W04-22 BLOCK** | **BA W04-22** | **BA W04-42**



PERFECT PERFORMANCE.



**QUBE** construction The BA W04 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 two or four spindles. The BA W04-22 is optionally available with two independent Z-axes or with a robust, block-type spindle head. The BA W04-42 is equipped with a block-type spindle head. Faster and more dynamic due to linear motors in X, Y and Z-axis.

**cidrum** architecture All a modern machining centre needs: absolute measuring systems in all axes. A double swivel carrier with two fixture carriers, hydraulically locked on both ends, driven via a torque motor. In-cycle loading. Horizontally arranged clamping fixtures in an optimum ergonomic position. Direct workpiece loading via loading gantry. Overhead machining, optimum chip flow.



**BA W04-22 Block**  
**BA W04-22**  
**BA W04-42**

- Machine bed as a monobloc patented by SW
- 2 or 4 spindles
- 3-axis unit as a box-in-box design
- Linear motors in X, Y and Z-axis
- 2-spindle machine with a block-type spindle head or with two independent Z-axes
- Motor spindles up to 17,500 rpm
- Central cooling unit
- Integrated, upgradable hydraulic system (250 bar)
- 4- or 5-axis machining
- Planetary tables with 2 / 4 satellites (torque motors)
- Up to 64 workpieces per clamping fixture, hydraulically locked on both ends
- Up to 10 hydraulic lines and 5 pneumatic lines per table
- Modular tool magazine, extensible from 72 to 232 pockets
- SW broken tool detection in < 0.15 s
- Optimum accessibility to all assemblies

## SUPERIOR TECHNOLOGY FOR MAXIMUM PRODUCTIVITY.



Complete machining in two setups. For medium and high volume production of complex, high-quality components. Wet or dry machining (oil mist lubrication). Clamping fixtures direct mounted or on 2- or 4-satellite planetary tables. All satellites with torque drive and separate, direct measuring system. Can be retrofitted at any time. Maximum accuracy and dynamics. Typically for 4 to 64 workpieces. Various tool magazine capacities, modular extension possible.

Productivity. Machining processes defined by our experienced project engineers provide for optimum quality and cycle times, giving lowest cost-per-part and long-term quality performance. These results can be achieved either as a stand-alone machine or as a turn-key facility and can include automation and other processes. In our technology centre we test and optimize established methods and try out new techniques. Whatever it concerns new tools, hardware or software, we advance your cutting processes.

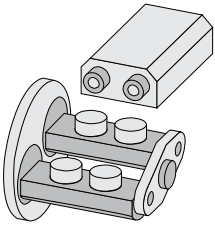


- For aluminium and non-magnetic material
- Rotary axes with torque motors and locking mechanism
- Coolant supply through the spindles up to 150 bar
- Additional coolers for all types of climate
- Clamping fixtures to be loaded direct and from the top
- Programmable flushing for clean clamping fixtures
- Optimum accessibility to all assemblies
- Time required for fixture change < 30 min

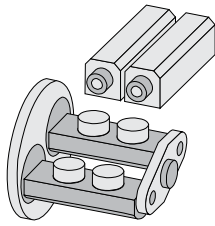
- Process design and simulation
- Fixture design and collision detection
- Tool trials
- Process development
- Process optimization on site and at SW
- Cost-per-part calculations
- Multi-spindle, 5-axis simultaneous machining
- Maintenance contracts and individual services
- Training at the SW-Academy
- SW Online Service, including Condition Monitoring

# DIMENSIONS

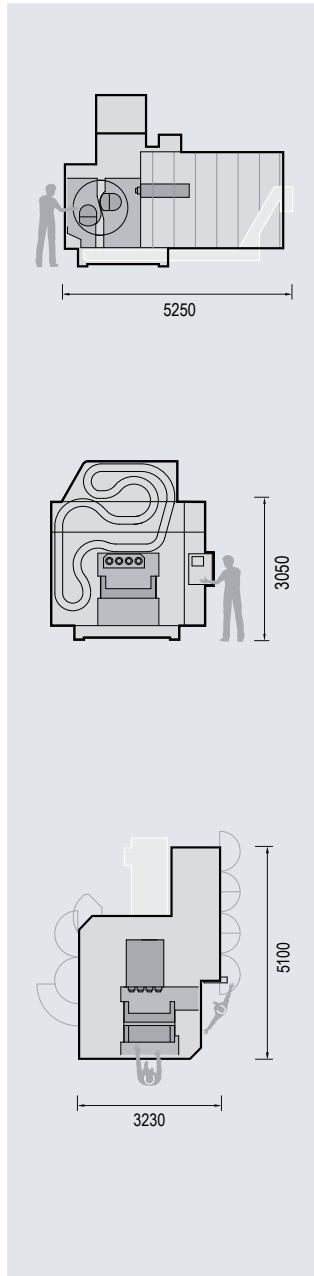
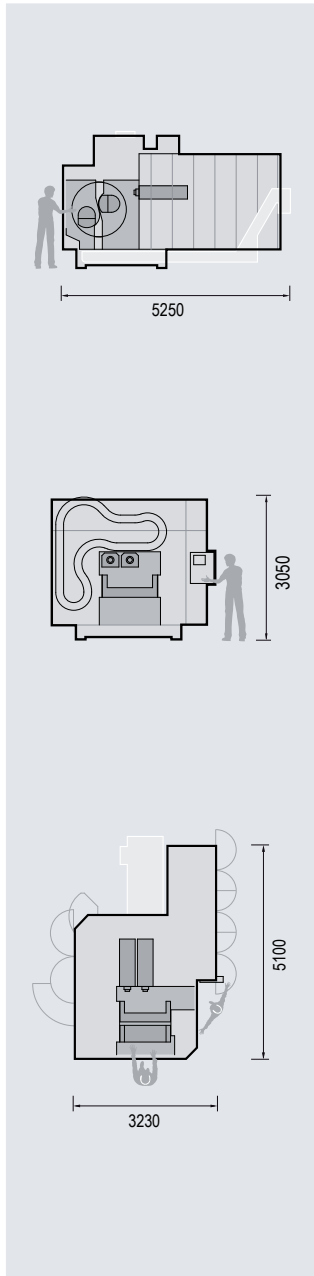
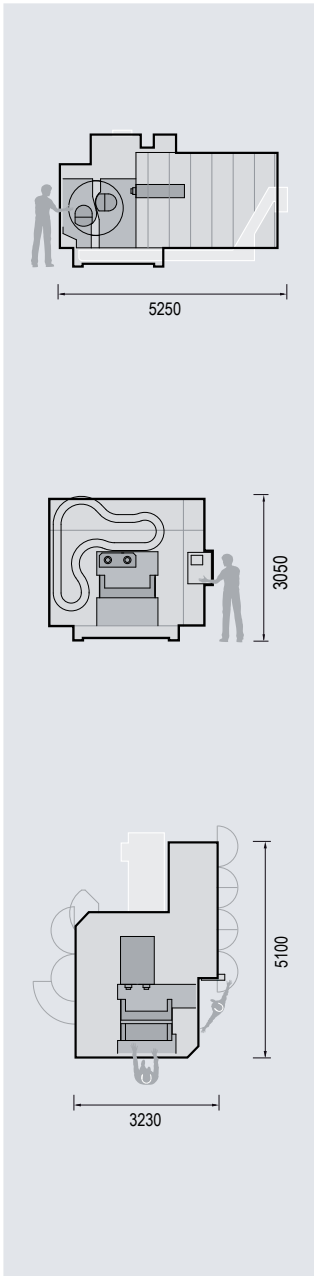
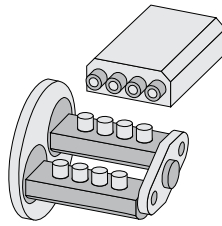
**BA W04-22 Block**



**BA W04-22**



**BA W04-42**



## TECHNICAL DATA

	<b>BA W04-22 Block</b>	<b>BA W04-22</b>	<b>BA W04-42</b>
<b>■ Working range</b>			
X-axis	400 mm	400 mm	200 mm
Y-axis (toolchange position)	500 mm (775 mm)	500 mm (775 mm)	500 mm (775 mm)
Z-axis	425 mm	425 mm (Z- and Z <sub>i</sub> -axis)	425 mm
Spindle distance	400 mm	400 mm	200 mm
<b>■ Workpiece carrier</b>			
Swivel carrier / counter bearing with crown gear: swivel time 0/180°	approx. 3.5 s	approx. 3.5 s	approx. 3.5 s
A- and U-axis, prepared for mounting a fixture plate, up to max.	Ø 550 mm x 1,030 mm	Ø 550 mm x 1,030 mm	Ø 550 mm x 1,030 mm
Drive system	Torque motor	Torque motor	Torque motor
Load capacity	2 x 450 kg	2 x 450 kg	2 x 450 kg
Speed range A-, U-axis	1 - 50 rpm	1 - 50 rpm	1 - 50 rpm
C- and W-axis*	2 / 4 satellites	2 / 4 satellites	4 satellites
<b>■ Work spindle</b>			
Spindle taper	Hollow shank DIN 69893 – HSK–A63	Hollow shank DIN 69893 – HSK–A63	Hollow shank DIN 69893 – HSK–A63
Speed range	1 - 17,500 rpm	1 - 17,500 rpm	1 - 17,500 rpm
Run up time n <sub>max</sub>	0.7 s	0.7 s	1.1 s
Spindle bearings ø	80 mm	80 mm	80 mm
Power (40% duty cycle)	2 x 35 kW / 4,200 rpm	2 x 35 kW / 4,200 rpm	4 x 32 kW / 4,200 rpm
Torque (40% duty cycle)	2 x 80 Nm	2 x 80 Nm	4 x 72 Nm
<b>■ Feed drive</b>			
Drive system	Linear motor	Linear motor	Linear motor
Rapid traverse X / Y / Z	100 m/min	100 m/min	70 / 100 / 100 m/min
Axis acceleration X / Y / Z	13 / 12 / 23 m/s <sup>2</sup>	13 / 12 / 23 m/s <sup>2</sup>	10 / 10 / 22 m/s <sup>2</sup>
Max. feed thrust X / Y / Z	10,000 / 10,000 / 10,000 N	10,000 / 10,000 / 2 x 5,000 N	10,000 / 15,000 / 15,000 N
<b>■ Accuracy</b> (according to VDI/DGQ 3441)			
Position measuring system	Direct, absolute	Direct, absolute	Direct, absolute
Position tolerance X / Y / Z	Tp=0.008 mm	Tp=0.008 mm	Tp=0.008 mm
<b>■ Tool magazine</b>			
Toolchange system	Pick-Up	Pick-Up	Pick-Up
Capacity	2 x 36 (2 x 60 / 2 x 92 / 2 x 116)*	2 x 36 (2 x 60 / 2 x 92 / 2 x 116)*	4 x 18 (4 x 30 / 4 x 46 / 4 x 58)*
Max. tool ø	80 mm / 160 mm (free adjacent pocket)	80 mm / 160 mm (free adjacent pocket)	80 mm / 150 mm (free adjacent pocket)
Max. tool length	300 mm	300 mm	300 mm
Max. tool weight	10 kg	10 kg	10 kg
<b>■ Toolchange</b>			
Chip-to-chip time	approx. 2.25 s	approx. 2.25 s	approx. 2.40 s
<b>■ Weight / Dimensions</b>			
Total weight	approx. 18,000 kg	approx. 18,000 kg	approx. 18,000 kg
Transport dimensions W x H x L	3.23 m x 3.05 m x 5.10 m	3.23 m x 3.05 m x 5.10 m	3.23 m x 3.05 m x 5.10 m
Machine installed W x H x L	4.35 m x 3.10 m x 7.00 m	4.35 m x 3.10 m x 7.00 m	4.35 m x 3.10 m x 7.00 m
<b>■ Connected load</b>			
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C network	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	approx. 156 kVA
Mean air consumption	1.0 Nm <sup>3</sup> /min (6 bar)	1.0 Nm <sup>3</sup> /min (6 bar)	1.0 Nm <sup>3</sup> /min (7 bar)
<b>■ CNC control system</b>			
Siemens	SINUMERIK 840 D	SINUMERIK 840 D	SINUMERIK 840 D



## 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 develop our machines from the inside out to make sure it is tailored for its future effective use in your plant.

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**SW** Technology  
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