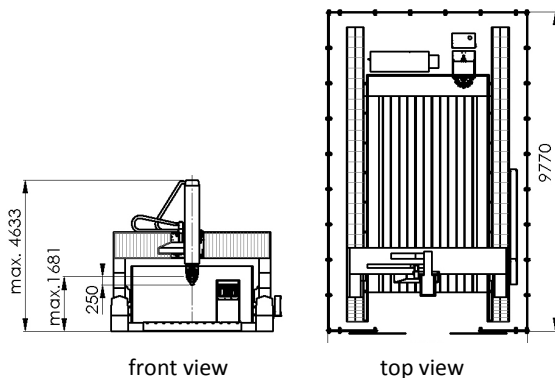


Portal milling machine

BORNEMANN Star

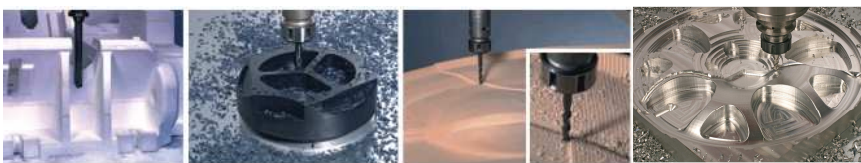


Application fields

- for very fast, precise, and reliable milling of many different materials
- for extremely diverse manufacturing applications including large-volume models (foundry models, design models, data control models, cubing models), moulds, samples, sculptures, decorations, packaging and many more
- travel distances X=6000 mm, Y=3000 mm, Z=1250mm (optional Z=1500mm, A = $\pm 100^\circ$, C = $\pm 200^\circ/\pm 270^\circ$)
- milling spindle power up to 13.5 kW

Milling materials

- foamed plastics
- homogeneous plastics
- resins
- wood
- composite materials
- fibre composites
- aluminium



Portal milling machine **BORNEMANN Star**

Advantages

- functional and innovative machine concept
- highly dynamic
- always reliable
- good resale value
- attractive design
- moving portal – workpiece stationary
- stable, vibration-free machine modules
- portal with gantry synchronous drive
- drive motors are digitally controlled
- supply cables tidily integrated
- X- and Y-axis with play-free rack and pinion drives
- Z-axis with play-free ball-type linear guide
- effective bellows covers for the axes
- guiding elements protected from dust and machining chips
- short installation/commissioning time at the site
- operation is easy to learn
- low maintenance expenses

Equipment variants

type 'Standard'

for milling foamed plastics

- 3 NC-axes
- milling spindle: milling motor with hollow shaft, with tool holder for hollow cutters and collet chucks
- milling table: clamping plate made of laminated wood, 6000x3000x180 mm
- CNC control Heidenhain TNC 640
- mobile operating console with colour monitor and keyboard
- electronic hand-wheel
- central lubricating system
- CE protective wall system: 1 front wall, 1 side wall
- switch cabinet incl. air conditioning unit
- painting in RAL 7036 (platinum grey) / RAL 3000 (flame red)
- technical documentation incl. operating instructions, wiring diagram, maintenance plan and spare parts list

type 'Class'

for milling of plastics, compound materials, fibre composites, wood, laminated wood

as type Standard, but:

- milling spindle, 13.5 kW, max. 18000 min⁻¹, with tool holder HSK A 63
- milling table: clamping plate made of cast, 6000x3000x280mm, with T-grooves

in addition to type Standard:

- direct travel distance measuring systems for the axes
- tool changing system with 6 tool places
- ricochet walls as chip collector for the working area
- lighting below the portal

type 'Premium'

for milling of aluminium

in addition to type Class:

- lubricant starvation system
- oil mist suction system

Options for all equipment variants

for type Standard:

- direct travel distance measuring systems for the axes
- vacuum pump set for clamping plate made of laminated wood

for types Class and Premium:

- 6 additional tool places for tool changing system

for types Standard, Class and Premium:

- additional A-swivelling axis for 4-axis milling incl. software for dynamic collision monitoring
- additional A-swivelling axis and C-rotating axis for 5-axis milling, incl. software for dynamic collision monitoring
- CNC control from other manufacturers
- extension for CE protective wall system: 1 side wall and/or 1 rear wall
- CE full housing including the ceiling
- radio hand-wheel
- touch probe for automatic tool measurement and tool fracture check
- painting in up to two RAL colour shades according to the customer requirements

Technical data

	Standard / Class / Premium	Option
working ranges		
X-axis	6000 mm	
Y-axis	3000 mm	
Z-axis	1250 mm	1500 mm
A-swivelling axis		±100°
C-rotating axis		±200°/±270°
feed rate		
X-axis	30 m/min	
Y-axis	30 m/min	
Z-axis	30 m/min	
A-axis		60°/s
C-axis		60°/s
required space		
length	9770 mm	
width	6110 mm	
height	4633 mm	5133 mm
machine weight		
type 'Standard'	15700 kg	
type 'Class'	28300 kg	
type 'Premium'	28600 kg	

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