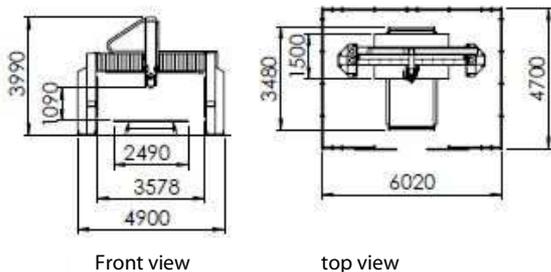




Picture not showing the CE safety wall system

Portal milling machine **BORNEMANN Twenty**



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=1500 mm, Y=2400 mm, Z=800mm (optional 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



Portal milling machine **BORNEMANN** Twenty

Advantages

- functional and innovative machine concept
- highly dynamic
- always reliable
- good resale value
- attractive design
- portal stationary – moving table
- stable, vibration-free machine modules
- drive motors are digitally controlled
- supply cables tidily integrated
- X-, Y- and 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, 1500x2490x530 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 aluminium, 1500x2490x580mm, with T-grooves

in addition to type Standard:

- direct travel distance measuring systems for the axes
- tool changing system with 6 tool places
- lighting below the portal

Options

for type Standard:

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

for types Class:

- 6 additional tool places for tool changing system

for types Standard and Class:

- 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 Daten

	Standard / Class	Option
Working ranges		
X-axis	1500 mm	
Y-axis	2400 mm	
Z-axis	800 mm	
A-swiveling axis		±100°
C-rotating axis		±200°/±270°
Feed rates		
X-axis	30 m/min	
Y-axis	30 m/min	
Z-axis	30 m/min	
A-axis		60°/s
C-axis		60°/s
Required place		
length	4700 mm	
width	6020 mm	
height	3990 mm	
machine weight		
type 'Standard'	7800 kg	
type 'Class'	8700 kg	

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