

PBZ® PROFILE MACHINING CENTRES

5-axis profile machining for highest technological requirements.

HANDTMANN SOLUTIONS - COMPREHENSIVE SOLUTIONS FROM ONE SOURCE.



MACHINE SOLUTIONS

- 5-axis HPC/HSC machining centres
- Four product lines provide solutions for a variety of machining requirements from profile machining through to structural parts and large-volume workpieces



TURN-KEY SOLUTIONS

- Increased competitive advantage through optimized processes
- Support and consultancy to provide bespoke customer solutions: tool selection, simulation, programming, milling strategy, etc.



SERVICE SOLUTIONS

- Long-term machine availability and continuous increases in productivity
- Broad offer in terms of machine maintenance, spare parts, expert support, training, support hotline



FINANCE SOLUTIONS

- Comprehensive advice and a wide variety of financial offerings from Handtmann Finance

Handtmann
A-Punkt Automation GmbH
Eisenbahnstrasse 17
88255 Baienfurt
Germany

Phone: +49 751 5079 0
sales.apunkt@handtmann.de
www.handtmann.de

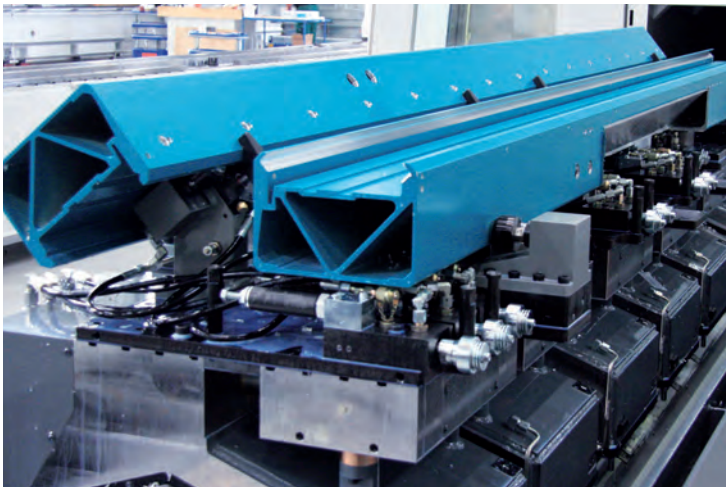
Handtmann CNC Technologies, Inc.
205 Prairie Lake Rd., Unit B
EAST DUNDEE, IL 60118
USA
Phone: +1 847 844 3300
info@handtmanncnc.com

Handtmann CNC UK
A Division of the Engineering Technology Group
Northfield Road · Southam
Warwickshire CV47 0FG
Great Britain
Phone: +44 1926 818 418
sales.uk@handtmann.de

000 Handtmann CNC Machines
Dorogobuzhsckaja Str. 14, Building 6
Moscow 125284
Russia
Phone: +7 913 956 70 22
service@handtmann-cnc-machines.com

000 Handtmann CNC Machines
Frunse Str. 86, Office 202
Novosibirsk 630005
Russia
Phone: +7 383 3195 945
service@handtmann-cnc-machines.com

→
The PBZ product line meets your application requirements due to various individual clamping concepts.

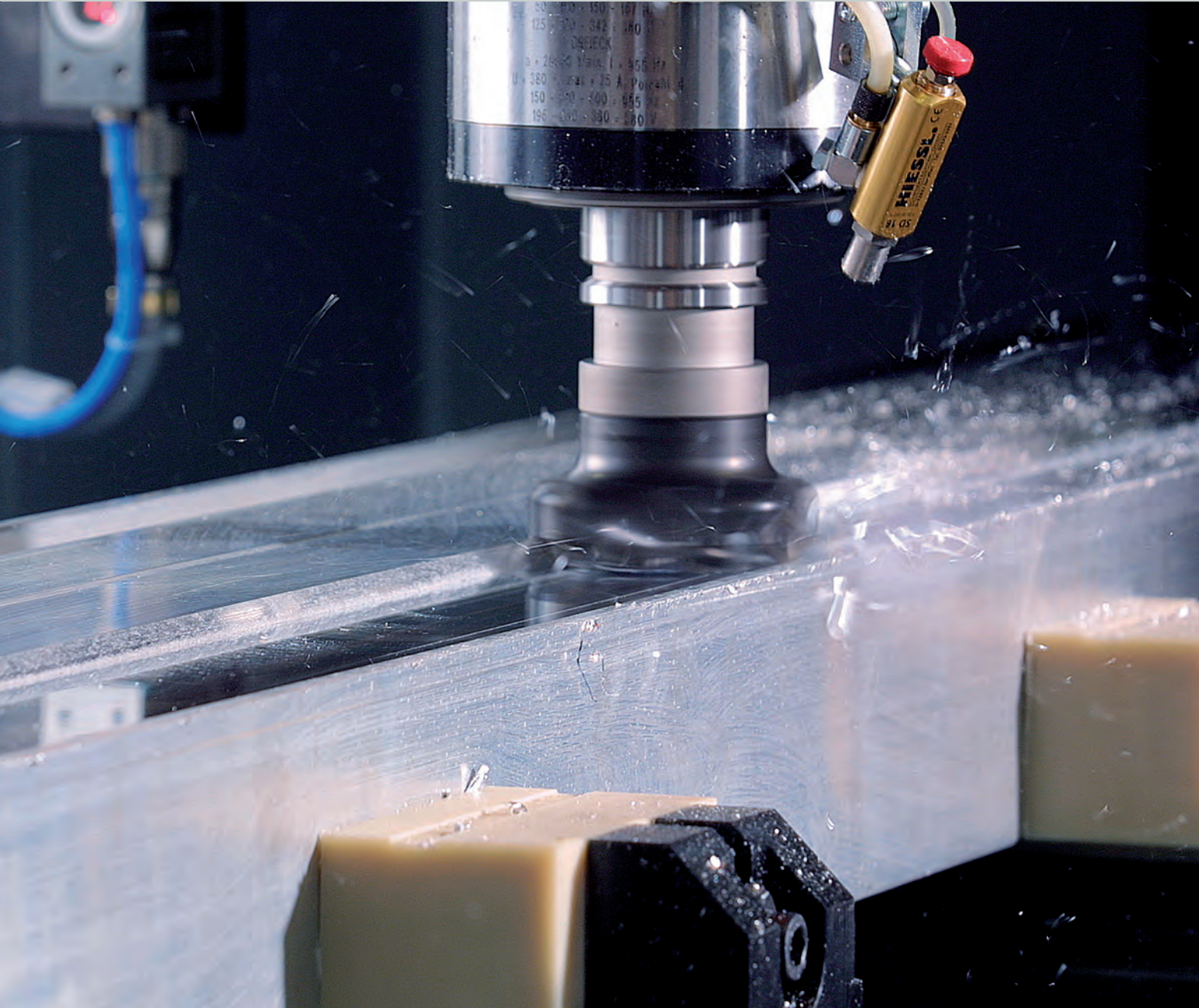


LEADING TECHNOLOGY FOR PROFILE MACHINING

Three series as a benchmark for demanding and economic profile machining.

↑
PBZ profile machining centres.
Ideal ergonomics for machine operators.

↑
High performance machining centres for high precision profiles.



Profile machining centres have always been the core competence of Handtmann A-Punkt Automation GmbH. The company has been a leading manufacturer of 5-axis HPC/HSC machining centres for more than 25 years.

As a member of the international Handtmann Group with about 3,300 employees Handtmann A-Punkt Automation GmbH has become a well-established machine constructor for profile machining in aerospace, façades, door and window construction as well as further metal working industries.

The Handtmann PBZ® product line includes three machine series - each with different sizes and various technological highlights for the dynamic machining of composite, aluminium and steel. Almost every task in profile machining such as machining of light extrusions, heavy extrusions, short and thin as well as long and wide profiles up to 30,000 mm can be achieved by meeting high quality demands and economics. Varied solutions for flexible workpiece clamping are possible due to the individual configurations of clamping vices and table versions. Various automated solutions allow short set-up times and reduced downtime.

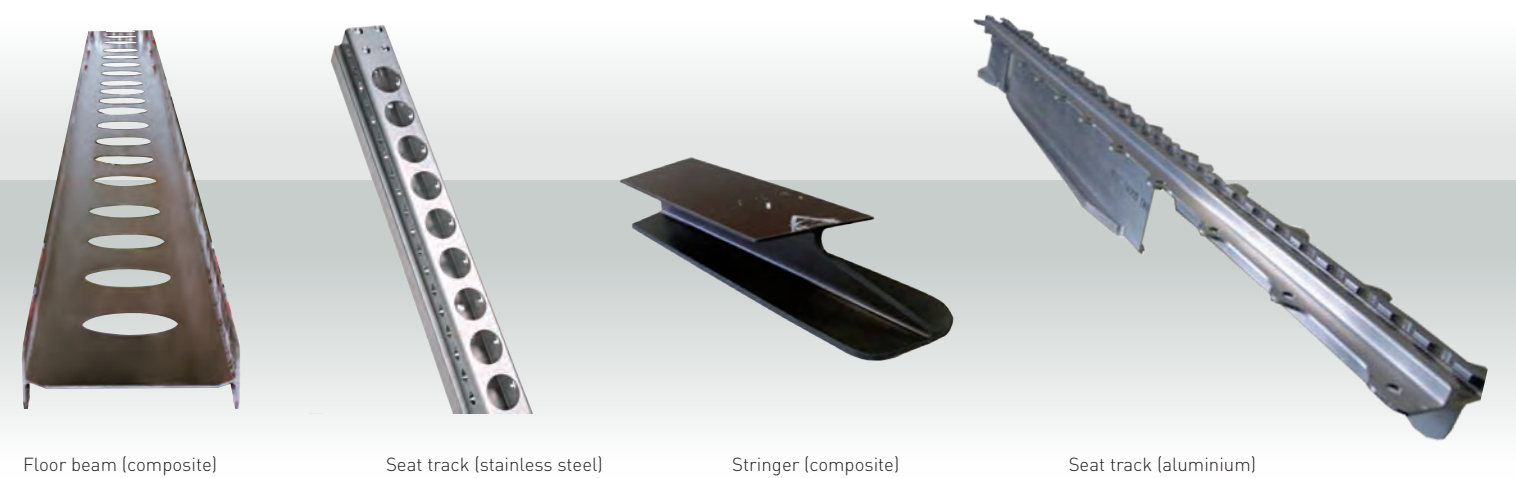
Handtmann clamping technology:

- Integrated, flexible, CNC-controlled clamping system for reduced downtimes
- Clamping vices for standard clamping or customer-specific clamping systems
- Variable number of clamping vices
- CNC-controllable positioning of clamping vices
- Workholding fixtures with integrated media supply possible (hydraulics, pneumatics, vacuum, electrics)
- Workpiece clamping for 6-sided machining
- Shifting of clamping vices provides ideal access to each side of the profile
- Economic, cost efficient clamping technology

Content

PBZ® SC	4 – 5
PBZ® NT	6 – 7
PBZ® HD	8 – 9
Automation / Options	
Technical Details	
Turn-Key Solutions	10 – 11

→
Two separate workzones allow pendulum machining which leads to high productivity with savings in set-up times and cost per part.



Floor beam (composite)

Seat track (stainless steel)

Stringer (composite)

Seat track (aluminium)

PBZ® SC

Dynamic pendulum operation up to 24 meters in length.

Pendulum operation for loading and unloading parallel to machining with minimal floor space requirement.

The PBZ SC combines the advantages of pendulum machining with high spindle power and a minimum floor space requirement for profiles up to 24,000 mm in length. This combination allows efficient machining of aluminium and steel profiles as well as composite parts. A table version even allows the machining of plates in various materials.

Pendulum machining creates two separate workzones. Thus, parallel to machining loading and unloading is possible and expensive downtimes are reduced enormously. The rigid machine construction provides high machining accuracy and quality for interference-free, 6-sided contour machining.

Highlights:

- Loading and unloading parallel to production due to two workzones and pendulum operation
- High productivity with minimal floor space requirements
- 6-sided machining of profiles up to 24,000 mm in length
- Application diversity: From light profiles made of composite and aluminium through to steel profiles and solid material
- Highly flexible production
- Direct thread cutting without compensation chuck
- Burr-free machining with HSC technology
- Rigid machine construction

Technical data:

- 3- and 5-axis configuration for highly dynamic profile machining
- Interference-free contour machining of profiles up to 24,000 mm in length
- Profile cross section: max. 800 x 500 mm (5-axis), max. 1,200 x 550 mm (3-axis)
- Spindle data: max. 37 kW, max. 28,000 rpm
- Travel speed (X/Y/Z): max. 70/55/55 m/min
- Axis travel (Y/Z): max. 1,100/720 mm
- Table version is available
- Integrated saw blade with a diameter of 500 mm
- Angle head is available
- Control: Siemens 840D SL

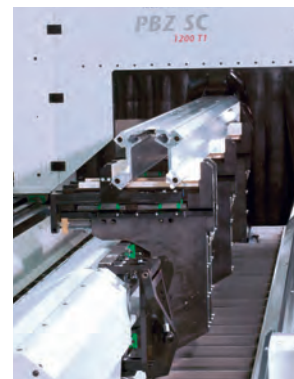
Clamping technology – further features:

- Proven Handtmann clamping technology
- Customer-specific clamping technology with a variable number of vices or table version
- Free positioning of vices throughout the entire length
- Easy change of clamping elements
- Multi-function clamping vices prevent damage of painted and coated profiles during shifting of vices

↓
6-sided profile machining up to 24,000 mm in length.



↓
Flexible clamping technology.



↓
Simultaneous loading and unloading.



↓
Table version with a maximum width of 800 mm.

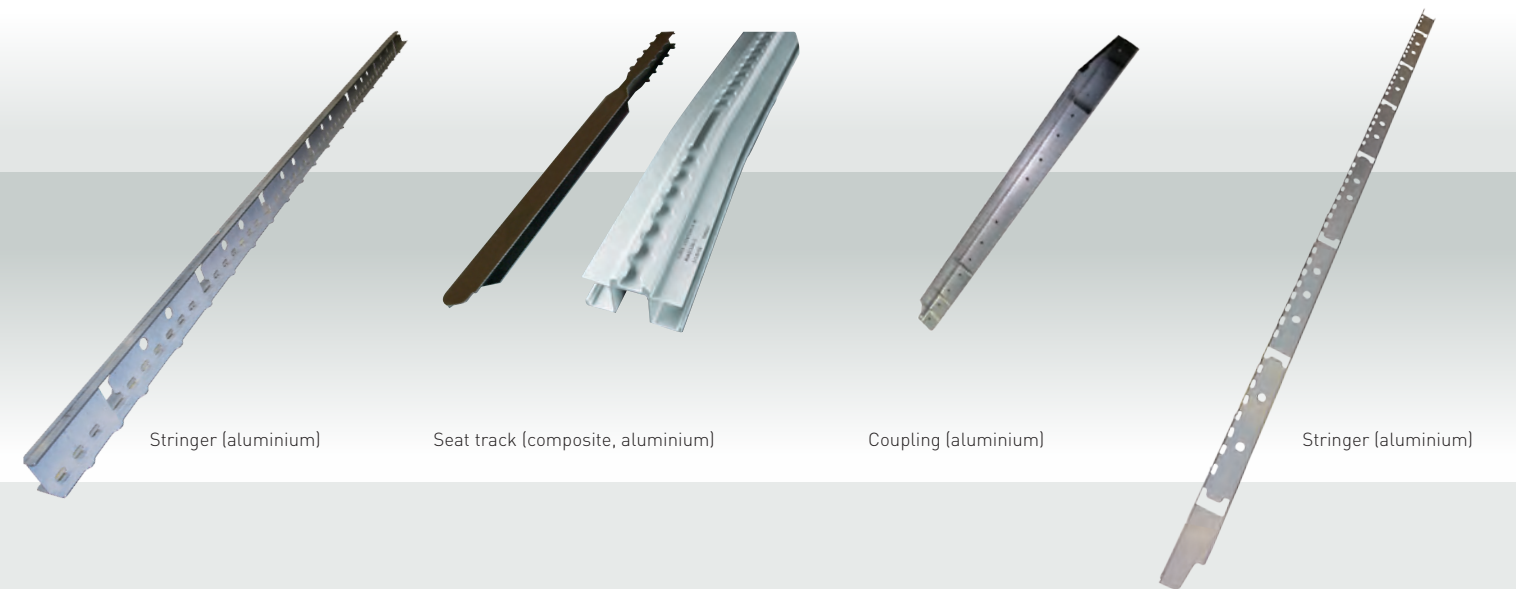


→
Economic profile machining up
to 25,000 mm in length.



PBZ® NT

Flexibility and capacity for 6-sided profile machining.



Stringer (aluminium)

Seat track (composite, aluminium)

Coupling (aluminium)

Stringer (aluminium)

Dynamic, precision and power.

The PBZ NT offers high precision and accurate machining of aluminium and sheet steel profiles up to a length of 25,000 mm. The high machine stability is the result of the machining centre's fixed portal.

Powerful and interference contour free machining of aluminium and steel profiles up to 25,000 mm is possible. By pulling apart single clamping vices machining of several workpieces on both ends throughout the entire machine length is possible.

Highlights:

- Interference-free contour machining, 6-sided complete machining of aluminium, sheet steel profiles and extrusions up to 25,000 mm in length
- Machining on both ends of several parts over the entire machine length is possible
- Milling, sawing, drilling, thread milling and cutting, shift cuts from different angles in the space
- Burr-free machining with HSC technology
- Highly flexible production
- Very high X-axis travels
- Integrated saw blade with a maximum diameter of 500 mm, direct insertion in the spindle, spatial cuts in 5-axis mode are possible
- Completely enclosed workzone
- High machine rigidity
- Proven machine kinematics
- Ergonomic workplace
- Ideal insight into the workzone
- Loading and unloading at convenient working height

Technical data:

- Profile length up to 25,000 mm
- Machining of profile cross sections up to 750 x 300 mm
- Spindle data: max. 37 kW, max. 28,000 rpm
- Axis travel (Y/Z): max. 1,100/850 mm
- Travel speed X/Y/Z: max. 90/55/55 m/min (Rack and pinion drive and ball screw)
- Control: Siemens 840D SL

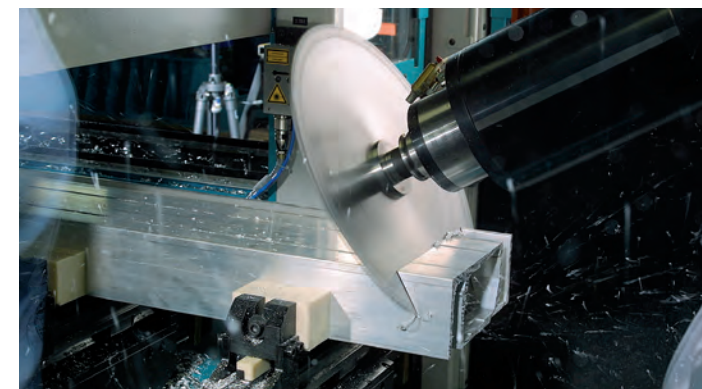
Clamping technology – further features:

- Proven Handtmann clamping technology
- Flexible clamping system for the machining of all common profile cross sections
- Free positioning of clamping vices throughout the entire length
- Standard clamping vices or wide version up to 700 mm as an option
- Automated pulling apart of the part for 6-sided machining of several workpieces, machining from front and sides
- Easy change of clamping elements
- Multi-function clamping vices prevent damage of painted and coated profiles during shifting of vices

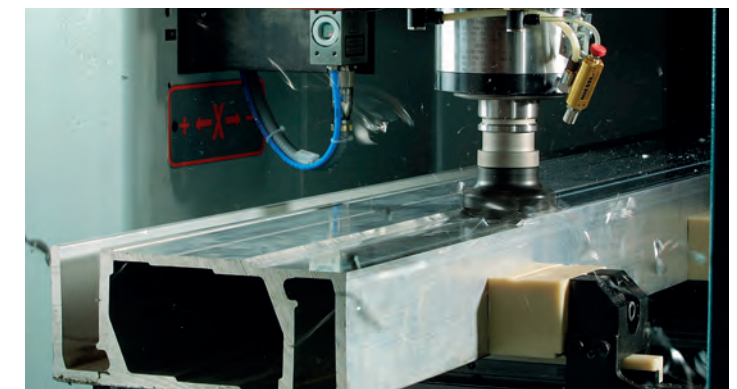
↓
Machining of complex, wide workpieces.

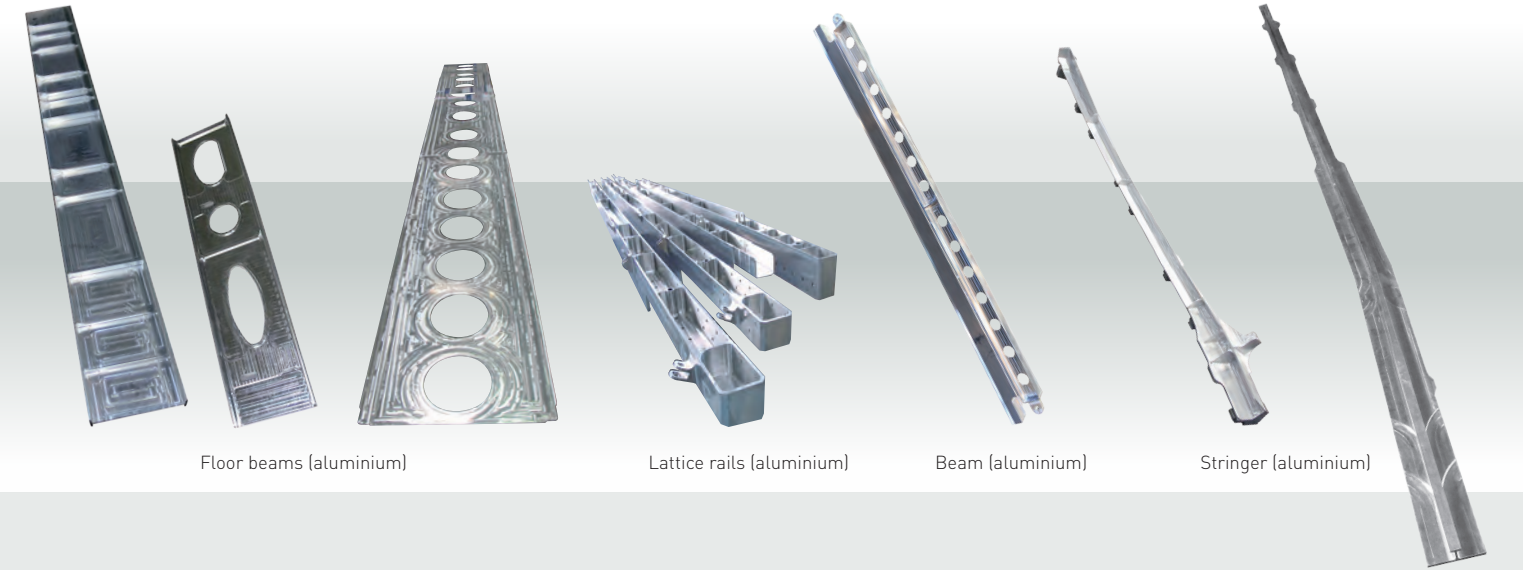


↓
Integrated saw blade allows spatial cuts in 5-axis mode.



↓
6-sided complete machining of aluminium, sheet steel profiles and extrusions up to 25,000 mm in length.





Floor beams (aluminium)

Lattice rails (aluminium)

Beam (aluminium)

Stringer (aluminium)

PBZ® HD

High precision meets highest material removal rates.

Challenging high performance machining.

The PBZ HD is the expert for challenging high performance machining. The powerful profile machining centre with fixed portal offers dynamic and flexible machining of profiles up to 30,000 mm in length providing excellent precision and performance.

The head-spindle-combination as well as the machine construction is the basis for stable, precise and extremely high performance machining. Optimum machining results with best accuracy, high material removal rates as well as short machining times and reduced cost per part are the outcome. The PBZ HD provides full 5-axis simultaneous machining.

Highlights:

- 5-sided complete machining including milling, sawing in different angles, drilling, thread milling and cutting
- Machining of composite, aluminium and steel
- Very high material removal rates during the machining of profiles and solid material up to 6.5 l/min
- Interference contour free and precise machining throughout the entire profile length up to 30,000 mm max.
- Complete integrated chip management is possible over the entire machine length
- Completely enclosed workzone
- High machining precision and surface quality
- Full 5-axis simultaneous capability
- Table version is possible as an option
- Ideal insight into the workzone
- Ergonomic access to the workpiece

Overview technical data:

- Max. workpiece length: 30,000 mm
- Profile cross section: max. 800 x 575 mm
- Axis travel (Y/Z): max. 1,500/1,000 mm
- Spindle data: max. 81 kW, max. 30,000 rpm
- Travel speed X/Y/Z: max. 70/40/40 m/min
- Saw blade diameter: max. 500 mm
- High rigidity due to robust and dynamic fork-type milling head design
- Control: Siemens 840D SL

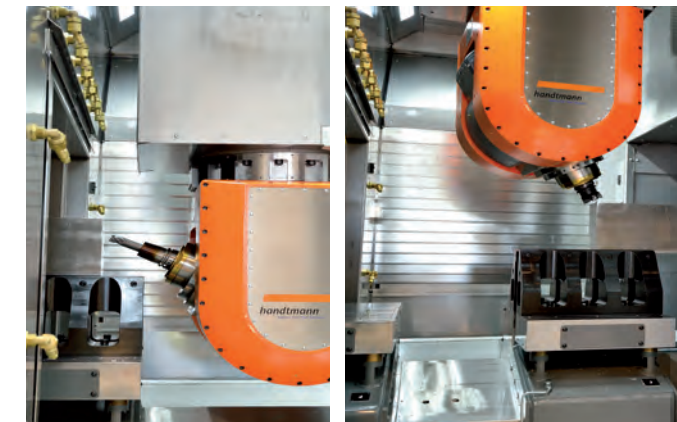
Clamping technology – further features:

- Proven Handtmann clamping technology
- Customer-specific clamping system with a variable number of clamping vices or table version option
- Huge and long workholding fixtures can be changed rapidly
- Dovetail clamping is possible

↓
Best ergonomics for machine operators.



↓
5-sided complete machining with highest material removal rates and precision.



↓
Customer-specific configurable clamping systems.

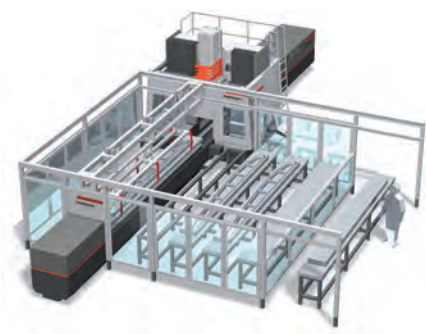


INDIVIDUAL SOLUTIONS

Configuration of automated solutions and options according to your requirements.


Automation:

- Process optimization, process safety and flexibility
- Minimization of downtimes and cost per part due to pallet automation or pendulum operation
- Customer-specific solutions can be realized according to machining requirements



Options:

- Chip conveyor
- Suction and filtration systems
- Radio wave touch probes
- Briquetting plants
- Precision package
- Turn-Key Solutions
- Pallet changing systems
- Coolant purification plants
- Minimal quantity lubrications
- Spray nozzles at the portal and in the workzone
- Handtmann Spindle Monitoring System (HSMS)
- Laser-controlled tool control and tool measurement
- Various configurations of tool magazines
- Further options on request

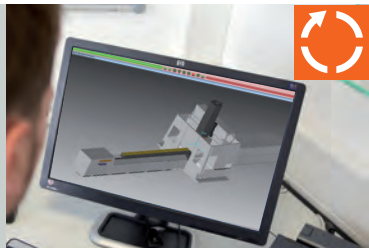
 The automated solutions and options for your machining centre are individually adapted according to your requirements.



TECHNICAL DATA:	PBZ® SC	PBZ® NT	PBZ® HD
Max. workpiece length	24,000 mm	25,000 mm	30,000 mm
Max. workpiece diameter (WxH)	400 x 300 mm (Clamping vice version) 1,200 x 550 mm (Table version)	750 x 300 mm (Clamping vice version)	600 x 300 mm (Clamping vice version) 800 x 575 mm (Table version)
Max. axis travel Y/Z-axis	Y-axis: 1,100 mm Z-axis: 720 mm	Y-axis: 1,100 mm Z-axis: 850 mm	Y-axis: 1,500 mm Z-axis: 1,000 mm
Max. travel speed X/Y/Z-axis	-/55/55 m/min (Ball bearing spindle) 70/-/- m/min (Rack drive)	-/55/55 m/min (Ball bearing spindle) 90/-/- m/min (Rack drive)	70/40/40 m/min (Rack drive)
Spindle data:			
Power (S1) Power (S6)	From 14 up to 26 kW From 19 up to 37 kW	From 14 up to 26 kW From 19 up to 37 kW	From 45 up to 63 kW From 58 up to 81 kW
Spindle speed	From 24,000 up to 28,000 rpm	From 24,000 up to 28,000 rpm	From 20,000 up to 30,000 rpm
Torque (S1) Torque (S6)	From 28 up to 34 Nm From 40 up to 41 Nm	From 28 up to 34 Nm From 40 up to 41 Nm	From 31 up to 60 Nm From 40 up to 75 Nm
Tool interface	HSK 63A / HSK 50E	HSK 63A / HSK 50E	HSK 63A
Max. acceleration	4 m/s²	3 m/s²	4 m/s²
Tool magazine	Disc type tool magazine with 32 or 36 slots	Disc type tool magazine with 14, 29 or 36 slots	Disc type tool magazine with 36 slots
Control	Siemens 840D SL	Siemens 840D SL	Siemens 840D SL

HANDTMANN TURN-KEY SOLUTIONS

Integrated and individual process support delivers perfection!



As with all Handtmann machining centres, you can also enjoy all benefits of our integrated process support within the Handtmann Turn-Key Solutions when investing in a machine of the PBZ product line.

Let optimized processes enhance your competitiveness.

Specially trained and experienced employees provide individual advice and deliver every process from the initial analysis of the project onwards. This includes feasibility studies and recommending the right machining centre, right up to test machining, machine configuration and installation. Our extensive Handtmann Turn-Key solutions also include the training of your employees and professional support in programming, tool choice and simulation.

Although the Handtmann Turn-Key solutions are based on standards of our various machine types the customization to meet the actual customer requirements has top priority. Thus Handtmann combines optimum customer orientation with maximum cost-effectiveness.

The integrated process support we provide for our customers is an integral part of Handtmann's worldwide success. The process and services of the Handtmann Turn-Key solutions can be divided into four steps.

Step 1:

- Feasibility, time and capacity studies
- Advice in the selection of the suitable machining concept
- Test machining

Step 2:

- Tool selection
- Clamping solution and milling strategy
- Programming
- Simulation

Step 3:

- Production support
- Service support
- Training

Step 4:

- Analysis and optimization of existing machining strategies
- Monitoring and optimization of existing production processes
- Partnerships in technology with suppliers, global service and support for short response times