



*inspired by  
craftsmanship*

## ***Spectra***

Multifunctional CNC working centre  
for window and door manufacturers



# Spectra

## Multifunctional CNC working centre

The machine SPECTRA can independently provide full machining of windows and doors components and is an ideal solution for manufacturers looking for bespoke projects. The machine is equipped with 4 working tables with clamps for machining up to 4 pieces at the same time. The machine is easily set to do also arches, where the original solution makes this work easier and reliable. The CNC working features enable making different rebates on one piece to make opening/ fixed glazing or inward/outward opening.

The SPECTRA's robust machine construction, powerful drive units, intelligent user-friendly software and perfect ergonomics jointly contribute to meeting the customer's highest expectations regarding performance and flexibility.

The work units are divided into two separate parts. The main working spindle with rotary tool magazine on one side and five vertical drilling spindles and a horizontal milling unit on the other side of the arm.



## SPECTRA as a solution for atypical products

The connection of a separate SPECTRA machine to an angular machining centre WIZARD or CRAFTER is an indelicate combination of performance and complete machining of window and door components. While the angular centre efficiently performs tenoning and profiling operations, the SPECTRA machine will drill or mortise muntin bars joints and do milling operations for hardware, hinges, door lock etc. Composition of the machine enables to make arched structures. Machine is dedicated to work from top and back side, with aggregates also to both heads of components.

When equipped with vacuum clamps, Spectra is also suitable for panel doors up to 1000 mm wide.

---

### Machine configuration:

- 8/9,5 kW main electro spindle for HSK 63 F shafts
- C-axis for working aggregates
- Multifunctional drilling head with 5 independent drills
- 1 horizontal milling with HSK 40A quick change system
- 4 moveable working tables with 10 pneumatic clamps
- 12 positions carousel toolchanger
- 4 positions linear toolchanger for aggregates

### Additional equipment:

- Vacuum pump with manifold for vacuum pods
- Vacuum pods for flat materials to produce raised panels, panel doors, etc.



# Spectra

## Working units designed for efficient machining

The main working spindle can work with combination tools because the depth below the clamping plane is 60 mm. The main tools are placed in the rotary tool magazine, other tools and aggregates in the linear magazine.

A drilling unit with 5 independent spindles is on the second Y-axis, as well as a horizontal milling spindle for heavy duty door lock milling.



Vertical electro spindle HSK-F63 with C-Axis for aggregates on the working axis Y-1



Vertical five spindle boring head and a horizontal milling unit with HSK 40A quick change system on the working axis Y-2

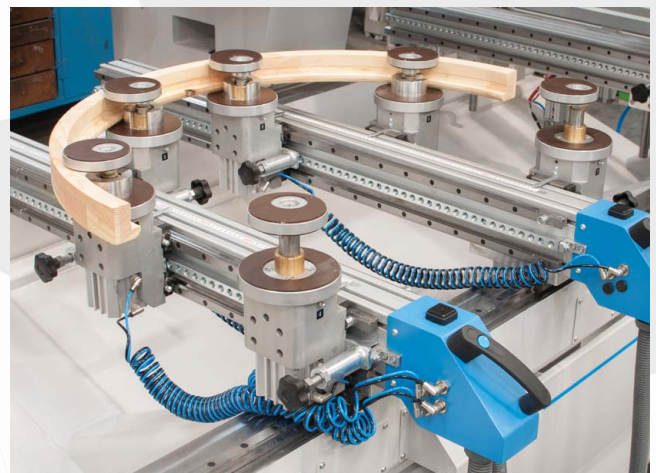
## Flexible worktables setup to suit different needs

Four manually moveable worktables with set-up assistance for accurate positioning to avoid collisions. 10 pneumatic clamps for machining of 4 components at the same time or clamping arches.

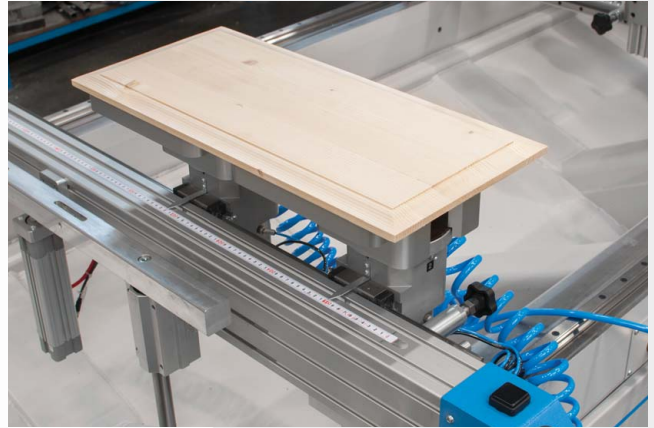
Clamping of 4 components at the same time



Moveable worktables in positions for arches



Vacuum pods with easy fixing for panel component production



Special clamps for short components



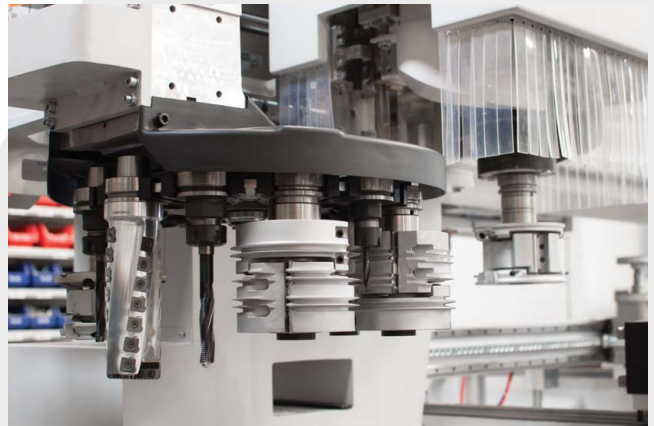
HSK 40A quick change system (horizontal milling unit)



Linear 6 position tool changer for tools or aggregates



Carousel toolchanger with 12 position



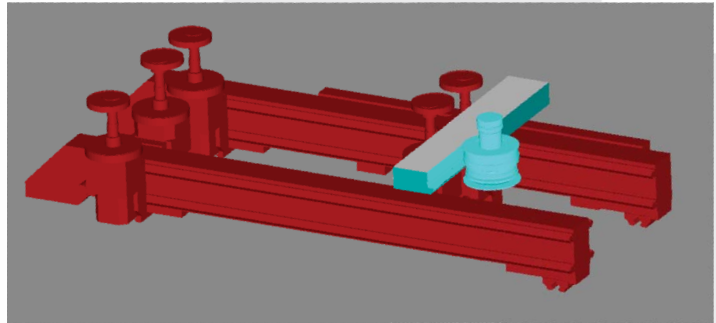
# Spectra

## Machine control

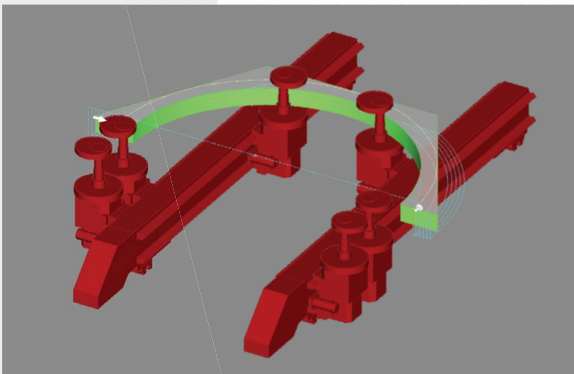
Intuitive control of the machine is provided by a **Beckhoff** PC with 15" touch screen which uses data from WinCreator or third-party software where machining and all macros are defined.

To design and produce standard and also atypical parts, the **Alphacam** environment is integrated. We also prepare the placement of elements on the table and the layout of clamps to avoid collisions.

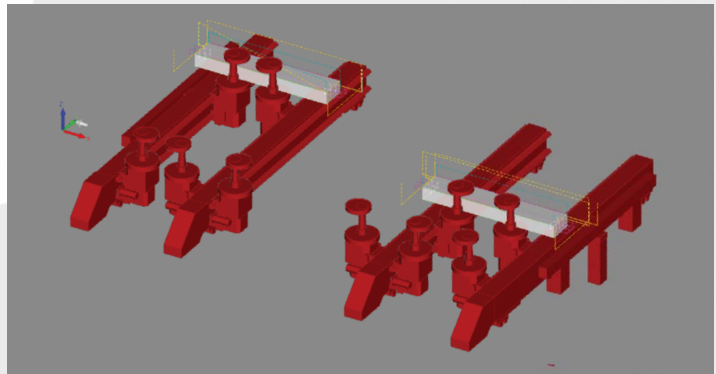
Machining simulation with production time measurement



Clamp settings and arc clamping



Clamping two parts on the worktable



## Examples of processing

The machine is designed for standard operations in window and door manufacturing but the machine can be modified for customer-specific solutions using various accessories.

Different rebates on one piece



Drilled window hinges



Door 3D and butt hinges



Head and longitudinal drilling for dowel connection



Holes for window handle, mortised for door lock cases, bevelled slots for louvres



## Technical data

### Working units

- Vertical electro spindle HSK-F63; 8/9,5 kW; 380 V; 24.000 rpm; 4 poles; cooling: electric fan; bearings (CC) ceramic front/rear; long nose with C-AXIS for aggregates
- 5 x M10 vertical spindle boring head for 5 drill bits - 1,5 kW; 380 V
- 1 horizontal milling unit 5,6 kW; 0-18000 rpm for bits up to  $\varnothing$  20 mm with HSK 40A quick change system
- X-axis stroke / length of piece  
3700 / 2840 mm
- Y-axis stroke / width of piece  
1830 / 1060 mm
- Z-axis stroke / thickness of piece  
395 / 100 mm
- Linear tool changer 6 positions for tools or aggregates
- carousel 12 position toolchanger

### Control system

BECKHOFF industrial PC with 15" touch screen for industrial applications.

- Multilingual software
- Open to third party software data
- Creating macros, templates for drilling, milling, and processing parts

ALPHACAM 3D CAD/CAM software program that supports machining it supports the production of window and door parts with all macros for connecting parts and fitting hardware.

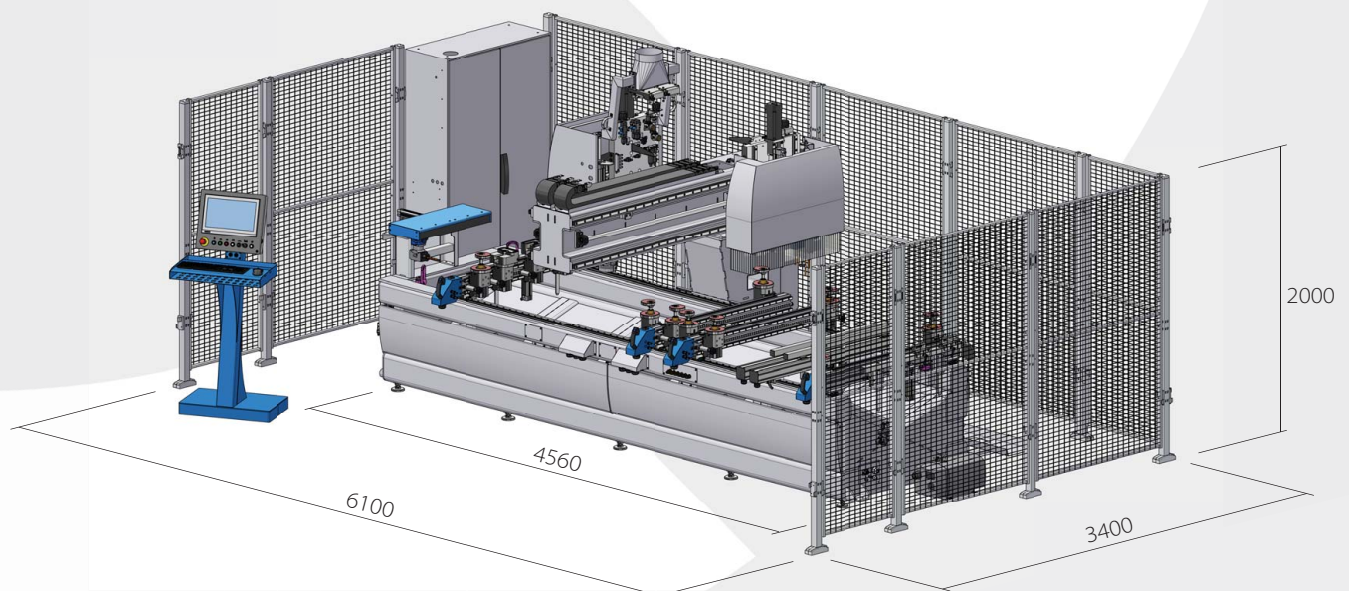
- Drawing of atypical parts or DXF import
- Individually library components or in sets
- Worktable setting to avoid collisions
- Machining operation simulation with a calculation of the execution time.

### Worktables

- 4 manually moveable worktables with set-up assistance for accurate positioning to avoid collisions.
- 10 pneumatic clamps for machining of components for thickness 50-100 mm

### Optional

- Vacuum pods 260 x 245 mm; 150 x 150 mm or 150 x 75 mm





SOUKUP, established in 1991 based in the Czech Republic, has always been in tune with its customers' requirements. The primary reason we started to build our own machines was that we were unable to find any machine on the market which could fully match the carpenter's way of thinking and doing things.

By taking a more in-depth look at our projects, you will see that there are many original approaches and solutions to various technical tasks all based on our extensive practical experience of producing woodworking machines.

We do not want our customers to simply be able to use the machines; more importantly, we want them to feel naturally involved as part of the overall process. We believe that the correct technological choices and subsequent implementation in conjunction with the needs of our customers are key factors in the success of their future production. We will be pleased to share our knowledge and experience with you.



**SOUKUP s.r.o.**  
Komerční 518, Prague - Nupaky  
251 01, Czech Republic  
Tel.: +420 241 403 110  
E-mail: [info@soukup.cz](mailto:info@soukup.cz)  
[www.soukup.cz](http://www.soukup.cz)

Soukup  
company video

