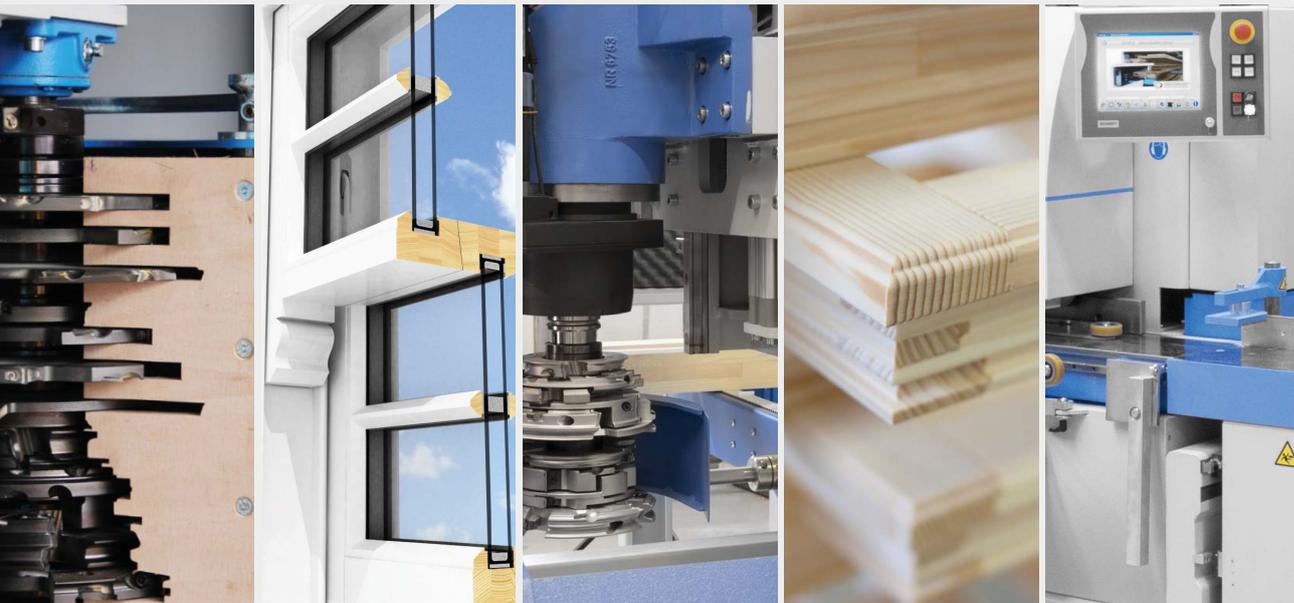




*inspired by
craftsmanship*

Window Manufacturing

Advanced technology for wooden windows and doors



Windows, wood and the future



Windows form that essential component of construction that brings natural light into our homes. However, they also serve other important and useful purposes in our modern life: helping to conserve energy, adding style, elegance and atmosphere inside our homes, and enhancing the appearance of the façade of the building. Wooden windows have always been with us, but today we are fortunate enough to be able to benefit from the dynamic developments and innovations offered by the window and door industry as a whole. Today's window manufacturers need to produce windows using the most recent developments in technology, ensuring that insulation and weather protection properties are part and parcel of the process. Meeting the demands and expectations of architects and homeowners is, of course, paramount. All of these factors collectively lead to a complex task only managed by ensuring a flexible approach.

SOUKUP Woodworking Machinery offers advanced technology for wooden window manufacturing businesses around the world and, with 30 years experience in fenestration, the company offers tailor-made solutions.



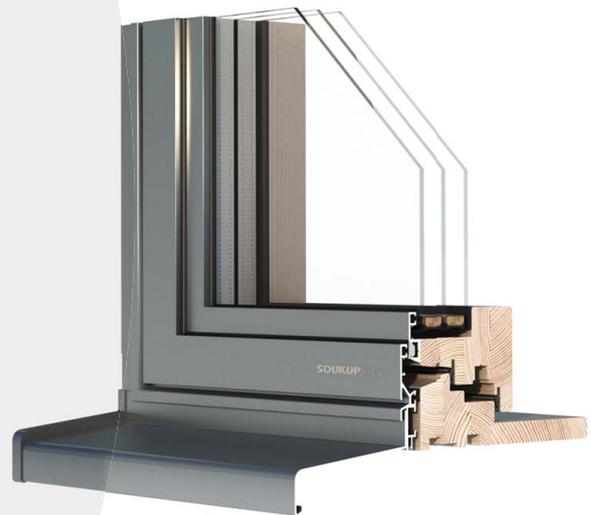
Welcome to our world of wooden windows!

SOUKUP, 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 joiner'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 longtime practical joinery experience. 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 choice of window machinery, the organisation and use of consequent technology, and the careful preparation of window projects are key factors in the success of future production. We will be pleased to share our knowledge and experience with you.

Our brand Soukup Design is focused on the development of new window and door constructions and finding the best solutions for our clients.

SOUKUPDesign

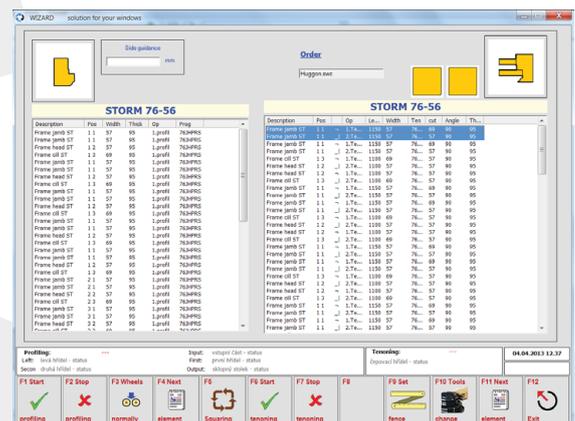
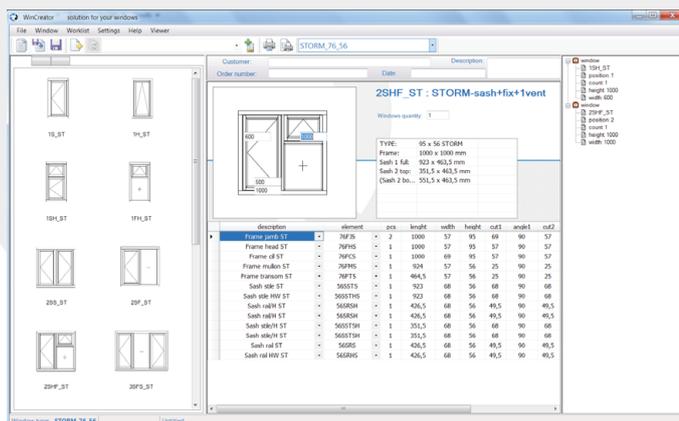


Small workshops looking for a new level of manufacturing

It is the norm that in most traditional woodworking businesses one foreman manages all of the important operations. In addition to the manufacture of doors and windows, other important and necessary products including staircases, kitchen cabinets and fitments, flooring and beading are required for completing a house or housing project. If the major part of the project involves the production of windows and doors, then it would make sense to invest in and start working with the Soukup **Crafter**. This small, compact angular centre has the capacity to undertake all tenoning and profiling operations and, with the set-up of all electronic working units, a substantial reduction in production time is achieved.



For the operation of this small joinery machine, a production list is prepared in the office using SOUKUP produced WinCreator software and directly links to the machine. WinCreator generates a production worklist for crosscutting and batch arrangement prior to machining, totally enhancing workshop organization.



Due to its compactness, the Crafter can be accommodated in almost any workshop. The special double tenoning cycle enables tenon shortening rendering the involvement of the left rotating spindle for stormproofing unnecessary. The machine is enhanced with a return conveyor enabling one-man operation. The special horn milling unit can efficiently make traditional double-hung sliding sash details when sash replacement is required. This unit, by using a trenching tool, can trench the sill and head to create the pulley stiles. Even traditional bevelled meeting rails can be produced easily. With these features, the Crafter is the machine which fully meets the artisan's needs in the more efficient production of windows and doors compared to traditional working methods. We are not able to promise that the Crafter will accomplish every single element of bespoke work, but it will efficiently manage the majority of daily orders and enable expert craftsmen to create their masterpieces.



Processing of bevelled meeting rails and stiles with horn details



Horizontal milling unit for horns and trenching operations



Sliding boxes made from profiled beads on the Crafter



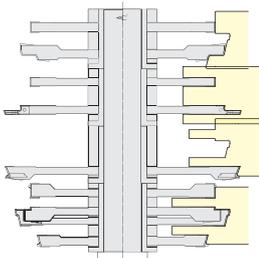
Shorted tenons allow stormproofing of sashes without breakout.

Automatic tenoning as a starting point of your business

Although Crafter is an ideal machine for handcraft window manufacturing, we can imagine that for many workshops even a simpler solution can be sufficient, especially when the business is starting or windows are not the only product of the company. The automatic tenoning machine **Temac 300** in combination with an existing profiling machine or a spindle moulder can represent a simple working centre. Temac 300 has taken the most important features from Crafter – the tenoning spindle for multiple tooling with automatic positioning, a cut-off saw and a tenoning fence. Reading data from WinCreator has revolutionized organization and the whole process.

Temac has a fully electronically controlled shaft, a cut-off saw and a fence that are automatically adjusted and powered by an industrial PC with WinCreator software.

Tenoning tools with programmed positions and split working



Temac 300 with 330 mm long shaft

The **Temac 600** incorporates thoroughbred industrial design based on the successful Wizard machining centre. It has a generous spindle length of 620 mm with an upper supporting bearing and is designed for easy tool replacement. It can achieve multi-faceted processing of the timber during a single pass through the machine. These are the main features of the machine. The Temac 600 CNC tenoning machine has been designed for tenoning of any timber frame construction but especially windows and doors.



Temac 600

Innovative change system for tenoning tools simplifies and accelerates the tool exchange with a long shaft with a contra support.



Tenoning with a forwards-backwards working cycle

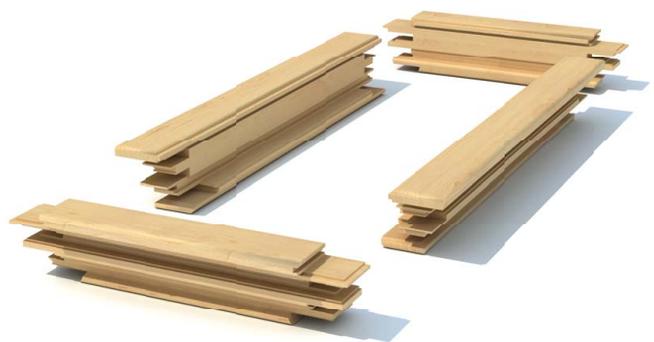


Serial manufacturing of windows and doors

We have found that the most efficient way to manufacture windows, bearing in mind the level of investment and performance, is by the knockdown system on an angular centre. Window components are tenoned and profiled first and, before assembly, treated with impregnation agents and a primer coat. This system not only saves time in the stormproofing of assembled casements, but also renders the sanding, repairing and handling of window components easier.



The Wizard series, intended for window businesses of all sizes, offers high level performance. The [Wizard 4L](#) model and [Wizard 2L](#), with its unique configuration, enables pre-squaring production. The tenoning operation is carried out by spindles long enough to comprise all tenoning tools. SOUKUP's unique tenoning cycle tenons and mills the outer shape of the timber end in a time-effective manner. The duality of the left and right profiling spindles ensures what is essential on this system - precision. As only one single machine operation is involved, the process is incredibly fast and precise. All units are driven by high-speed brushless motors and the long gear feeder guarantees smooth surface finishes.



The machine is intuitively controlled via a 12" touch screen. For accessing files there are two options: either by creating a worklist in WinCreator or by using interface link data from the estimation software. The full use of the machine into the wooden window-making process is then ready for implementation - from the initial cutting and moulding to the final stages of assembling and finishing.



Another member of the Wizard family is the [Wizard 3S](#). This machine is designed for the production of traditional windows (which commonly have complicated profiles) or, often, alu-clad windows. The machine offers absolute durability, full electronic control, extra space for tooling and everything that you would expect from an industrial machine.

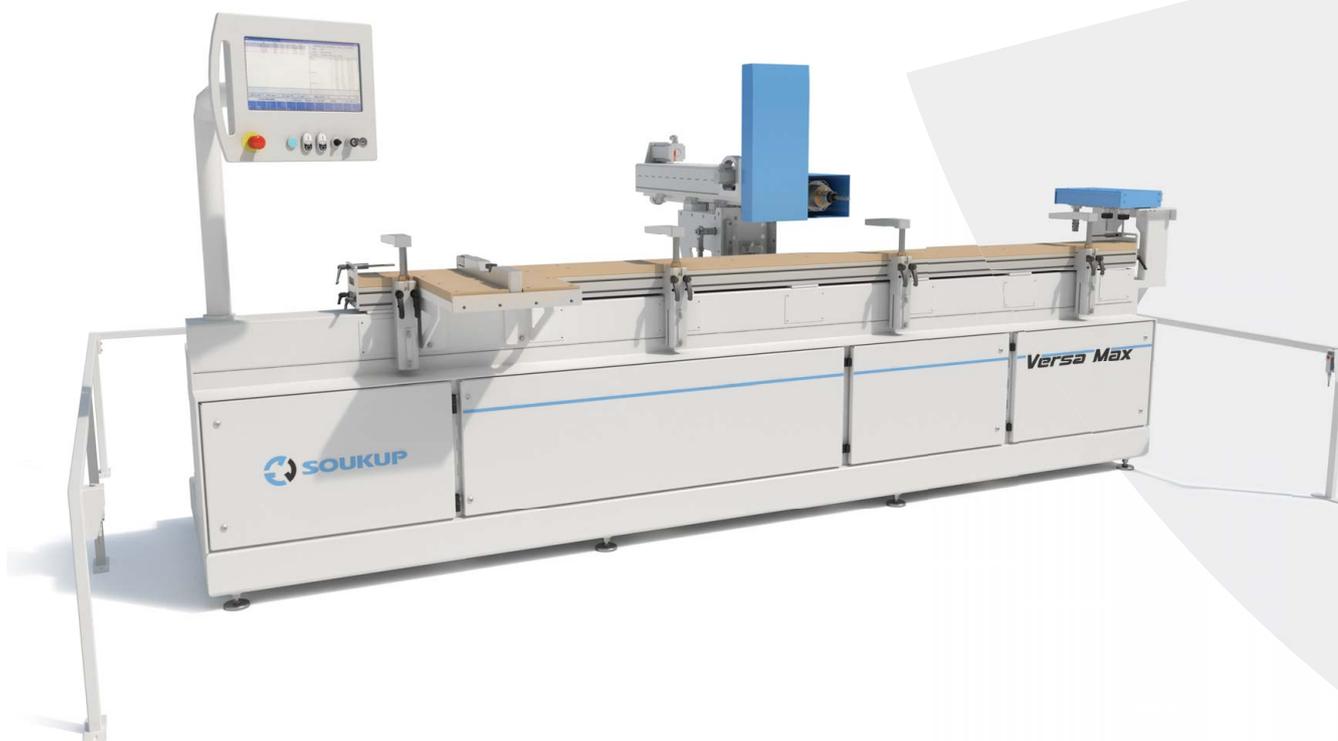


Drilling and milling

After the initial excitement from the new Crafter machine, where all components are effectively tenoned and profiled, we realize that a lot of drilling and milling operations (e.g. chiselling, boring, mortising hinges) remain. **Versa** is an ideal helper here, and the machine can handle all windows and doors production requirements. Like all our machines, Versa proceeds data from WinCreator software and can also work individually with manually put macros.



If we are looking for a fully automatic machine for higher performance, **Versa Max** is the solution. It is the benchtop CNC boring and milling machine. The machine is equipped with a main working spindle with $-10+90^\circ$ tilting and linear automatic toolchanger with 4 positions. The vertical drilling unit has three independent spindles for drills. The machine allows you to drill holes for dowel connection or mortise slots. The lateral drilling unit allows drilling in any schema and mortising slots for tenons. Additionally, you can do door lock pocket milling, hinge seats, bevelled curtains mortises, and front rounding of tenons.



Making arched components

For workshops which mainly concentrate on window production, the special **Arcus** machine provides a practical solution. Thanks to shared data from WinCreator can be curved segments or shaped door parts produced more efficiently than on a universal CNC router.



The specially developed **Segment** press facilitates the precise joining of finished pieces.



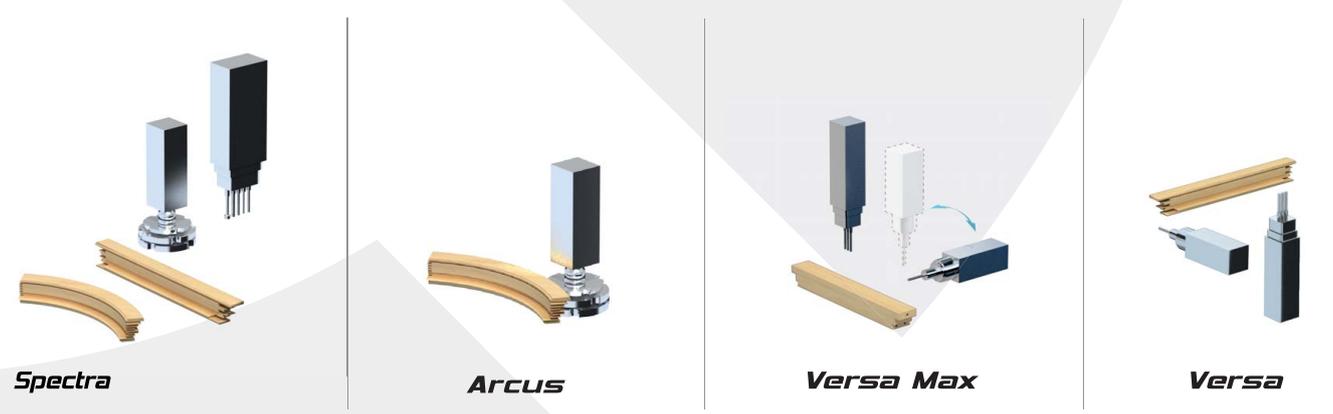
Whole spectrum of machining operations

We always have two principles in mind when manufacturing windows. Firstly is that the tenoned corner joint should always be the best and secondly that our machines are used by people who appreciate working with the natural qualities of wood. The concept of angular machining centres has always seemed to us to be the most appropriate and highly productive technique in window production, therefore we are continually developing and improving it. Other operations such as drilling and mortising have always slowed down the main processes, so we decided to separate them out from the main production flow. Thus two machines, **WIZARD** and **SPECTRA** were created.

WIZARD is a highly efficient, main production machine for making angled profiles with the operator controlling material input feed. SPECTRA performs all other machining operations. In certain production situations SPECTRA would be used exclusively, for example when producing doors where corner joints are doweled and substantial drilling and mortising is required. SPECTRA is also designed for arched structures and machining of diverse profiles for fixed and opening glazing on the frame piece.



Variety of technique for any requirement

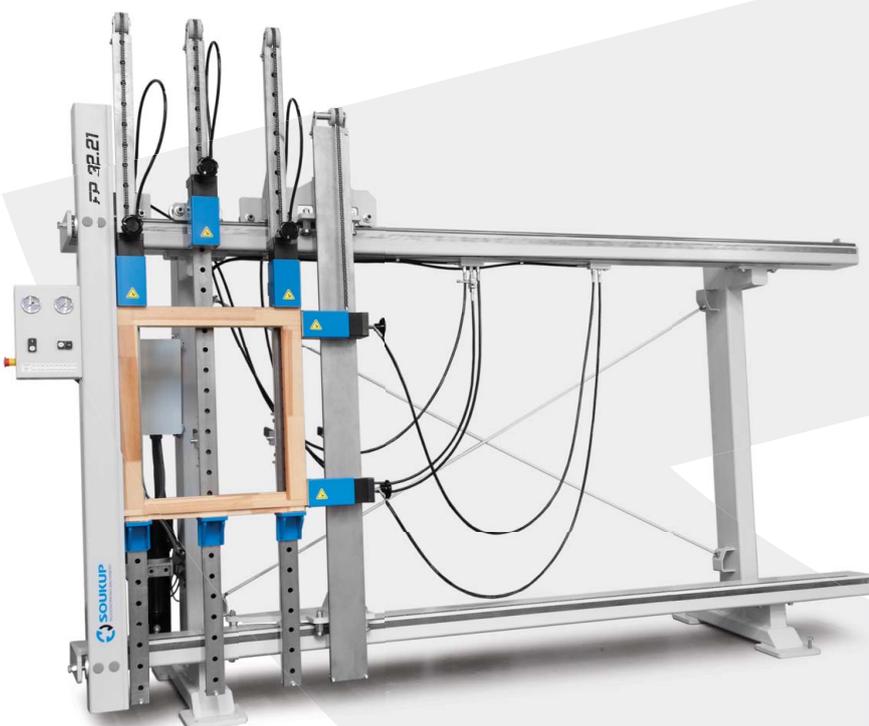


Contribution to smart manufacturing

The **Crossline 500** was designed to meet the needs of our clients. Besides standard cutting, the machine is capable of cutting window scantling in pairs which simplifies production sequencing. An optionally attached label printer can be used to attach labels so as to identify cut elements in subsequent operations. When used in conjunction with data downloaded from WinCreator, the Crossline 500 becomes an integral part of the production control system along with other key machines which use the same data.



The basic equipment of all window manufacturers is a frame press. We focused with the **FP series** on heavy-duty design and flexibility that manufacturers need. The ergonomic solution was also important in order to make the frame press easy to operate. Vertical clamping units that easily slide along rails are designed so that even very small windows can be clamped. A counterweight makes adjusting the clamping units easier. Nylon profiled magnetic shoes allow clamping of pre-squared components for knock down window manufacturing.



Precisely tailored operational window project

The experienced SOUKUP team of window specialists is engaged in research in Europe, the USA and Asia, monitoring developments in window design so as to be able to integrate the most up-to-date trends into customers' projects. Complex studies start with the consideration of environmental conditions, local building rules, standards and conditions, evaluation of existing window conventions, and end with the hardware or insulation glass unit being specified. Customers can profit from this expertise, being able to focus on their part of the business and with SOUKUP delivering an optimized window line with a fully operational window project.

The strength of the SOUKUP team in turnkey projects has been realised through cooperation with its reliable partners throughout the entire window making process - from the initial cross cutting, to fourside planning, glazing bead moulding, to frame cramping, sanding, finishing, assembling and finally to the fitting of the completed windows. The main machines can be linked together to one communication centre which is essential for a well-organized workflow.

The SOUKUP control system brings a new dimension to the work

The whole range of SOUKUP machines are powered by Beckhoff industrial control system. The SOUKUP team of experienced software specialists integrates the industrial PC with Ethercat connected servo-drive systems and input-output modules to create a harmonised system without compromise. The creation of window components to be machined begins in WinCreator as a simulated workflow which is then sent to the machine and processed by the SOUKUP control system. The user-friendly intuitive environment makes machine control, tool set-up, tenoning, profiling and macro-processing straightforward. Customers can also access information relating to the real time of production. Even the smallest SOUKUP machine is fully integrated into an information system.

Customer support

We are very much aware of what it means to integrate new machinery into your existing manufacturing process. The SOUKUP service team will take care of the installation, commissioning and training of your operators up until the time they are familiar with all the specific technical details. We will support you in future operations within the window manufacturing process in order for you to get the best use from our quality products. An instant helpline provided by our aftersales service team provides local support in all countries throughout the world - making SOUKUP your reliable partner.



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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.



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