



SOLVING PRESENT-DAY CHALLENGES FOR WOODWORKERS

A WHITEPAPER BY SWOOD AND OVVO



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CHALLENGES FOR MODERN WOODWORKERS

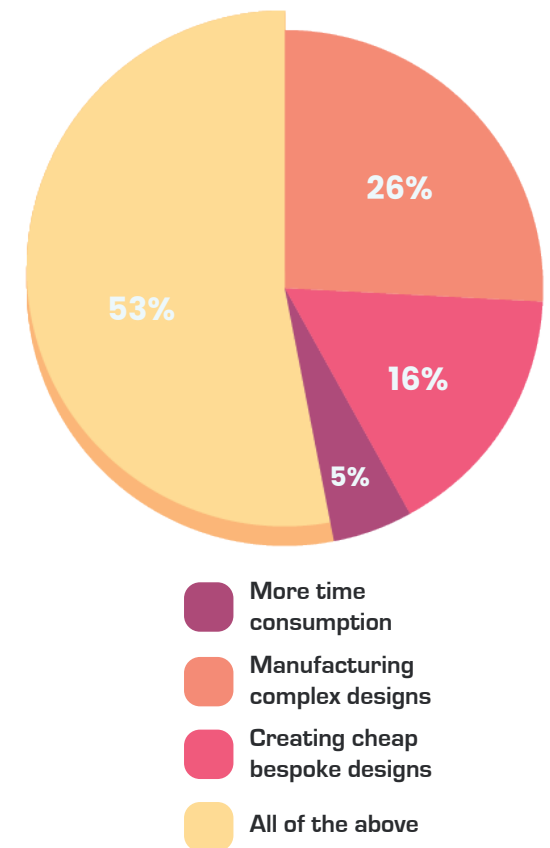
Woodworking has been around since epochs, and it has strengthened a lot through the years. There was a time when everyone wished for a similar interior design just as their neighbor. But now we are living in an age where personalization and unique projects are appreciated more. Everyone wants to be the owner of unique furniture. The delicate structures, elegant tables, and graceful wood crafts are demanded throughout the world because of the wood's aesthetic nature that symbolizes luxury.

This has made the jobs of the woodworkers difficult, as now they have to respond to any demand of customization to stay ahead of their competition. And while creating original designs for almost every project, they are met with a lot of challenges!

In the poll, the industry specialists were asked about what challenges they are facing, where almost half of them chose all the options which were manufacturing complex designs, creating cheap bespoke designs, and more time-consuming.

And as said before, the major challenge the modern woodworkers are facing is the demand for complex structures and designs. Woodworking professionals are spending a lot of time, money, and effort to fulfill the new market demands.

WHAT CHALLENGES IS THE WOODWORKING INDUSTRY FACING?



With the fast-paced lifestyle, new and complex designs are demanded by the customers that involve delicate cutting and furnishing. A single detailing error can lead to scrapping the manufactured product and to starting all over again. Thus, the time, money, effort, and even the raw materials are all lost.

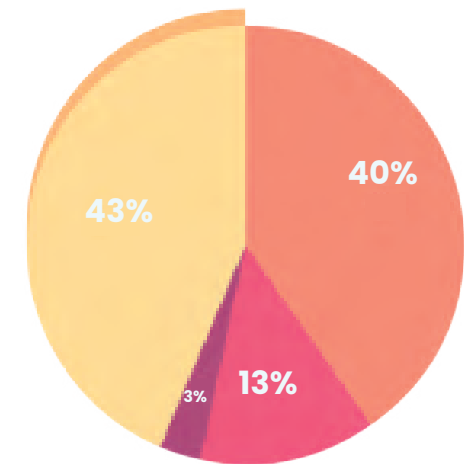
But fortunately, there is a solution to this challenge! With technological advancements, software and applications such as CAD and CAM are available to the woodworkers, which help them fulfill customer demands via computers. The required designs are coded in the software, and complex woodcutting machines prepare the outputs. However, such technologies have yet to experience widespread adoption. Organizations incorporating this software and machines have a significant edge over their counterparts.

In another poll, the woodworkers were asked about the new trends that are affecting the woodworking market, where 40% of them chose all the mentioned options and 43% chose automation to be the top emerging trend in the woodworking industry.

Some companies like OVVO are producing various tools to improve the productivity of a woodworker by specifically making the manufacturing and assembly processes more efficient. With OVVO's innovative invisible connection system they are transforming the wood joints and furniture connection, hence making it even easier to design furniture. Overall, the woodworkers are saving more time, money, and raw materials while working on the complex demands of their customers.

In this whitepaper, we will discuss how OVVO and SWOOD are working together to make the life of a modern woodworker easy

TOP 3 EMERGING TRENDS IMPACTING THE WOODWORKING INDUSTRY



- Automation
- Robotic machines
- Prefabricated wood house
- All of the above

ABOUT **OVVO**

Established in Ireland in 2014, the OVVO brand has gone from strength to strength, picking up many highly regarded industry awards along the way. Most recently awarded a “High Product Quality” award at Interzum 2019 for the innovative V-1230 Connection system, the relentless quest to make life easier for people ensures that simplicity is at the heart of every new product: with each new product developed, the OVVO range has become more accessible to manufacturers, with the ability to be integrated into existing production processes, and suitable for a wide range of production capabilities.

OVVO’s recently expanded range of invisible Wood Joining connectors leads the way in furniture assembly components, making life easier for consumers and end-users, and delivering a more profitable and efficient solution for manufacturers.



WHAT ARE OVVO PRODUCTS?

OVVO products are a range of cleverly engineered, award-winning, invisible connectors that make joining wood simple. The connectors are installed during the manufacturing process so the end-user can simply click together cabinets, shop fit-out components, door frame assemblies, or furniture with no tools, glue, or screws. The result is an accessible, sustainable product that saves time, money, and effort for consumers and manufacturers alike. Manufacturers can also benefit from significantly reduced shipping costs, as items can be shipped flat-packed.

All OVVO connectors are designed for easy insertion, and recently announced partnerships with leading software provider SWOOD ensure manufacturers can easily incorporate OVVO into their existing processes, and into new product design and development.



All OVVO connectors can be installed into a variety of materials ranging from high-quality hardwoods to low-grade particleboard, and our recyclable plastic means any waste is put back into the production of our product. OVVO works best in boards >12mm thickness and is available in a range of sizes to perfectly match your requirements. All connector sizes are available in both PERMANENT and RELEASABLE options, extending the range of materials and opportunities to inspire the creative design and innovative development. The RELEASABLE fittings enable further benefits within the circular economy, where individual panels can be replaced, as opposed to complete units if damaged, and items of furniture can be refreshed with new external panels, adding additional life to items that would otherwise go into the landfill.

REDUCE REUSE RECYCLE

Using the OVVO releasable and connector system makes the disassembly of products simple. Since individual panels are replaced separately, there's no need to replace complete units if one panel is damaged in transit. And, because OVVO means you can deliver products flat-packed, this dramatically reduces shipping volume and the carbon footprint of each unit. After all, it makes no sense to ship fresh air with pre-assembled units. All OVVO products are recyclable, so they can also be re-used at the end of the life cycle, therefore maximizing the use of the materials during their lifetime.

Furniture Assembly made simple—no need for tools, glue, or screws. Simply push, click and connect.



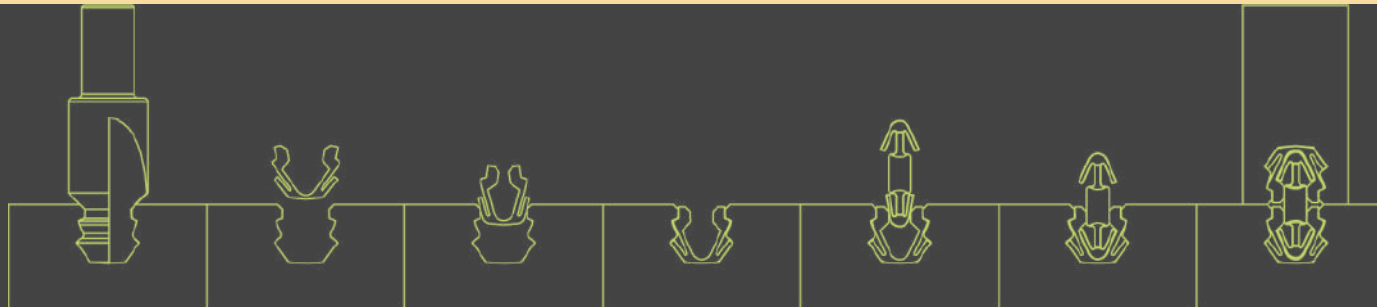
PROBLEMS SOLVED BY OVVO

If you've ever struggled with trying to assemble flat-pack furniture, then you will know all too well how frustrating the process can be. Hard to follow instructions combined with many screws, wooden dowel pins, and other hardware connectors, conspire to make the task a complex puzzle. OVVO Ltd. has come up with a solution that is now winning global success.

OVVO is an invisible furniture connection system that delivers perfectly aligned wood joints without the use of tools, furniture screws, or glues. Available in a range of sizes, with permanent and releasable options to perfectly match your manufacturing requirements, OVVO will deliver significant benefits, including increased production efficiencies, reduced assembly time on-site, and decreased shipping costs.

OVVO is already delivering impressive customer value in not only the flat pack furniture assembly sector but also in high growth and high-value sectors, including commercial, residential, and office fit-out, as well as bespoke high-end design solutions.

Our tool-free solution takes human error out of the assembly equation. No more flatpack frustration and no complicated instructions. It eliminates many fittings and just leaves a positive, fulfilling experience. In both commercial and domestic settings, OVVO eliminates time-consuming and messy processes, makes assembly simple, and reduces waste.



- OVVO for Drilling: New invisible push-in connector featuring two self-locking-dowel-shaped “pins” with 32mm centers that use an inbuilt tolerance of the housing to deliver superior joint strength.
- OVVO for Nesting: A new push-in connector that fits in a standard 25mm drill hole. No tools, no glues, no screws needed.
- OVVO for End-milling: The V-1230 connector has a deeper profile than the award-winning V-0930 connector, and significantly increases the holding strength delivered in chipboard materials, in which OVVO® can deliver an invisible connection. It works best in high-grade chipboard with thicknesses of 15mm, 16mm & 18mm, and above, and is also compatible with leading high-end materials, such as high-pressure laminates, composite material, and solid woods.

OVVO now has products that fit all manufacturing processes, like drilling, nesting, end boring, and so on.



EFFICIENCIES OVVO CAN DELIVER

A tool-free solution

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Forward-thinking manufacturing

The future of furniture assembly lies in streamlining workflow and speeding up time to market. For manufacturers in search of a tool-free connection system that reduces assembly time, transport costs, and wastage, OVVO delivers. And since we've designed our fixings to be invisible, OVVO ensures no one needs to compromise on quality or aesthetics.



Design smarter furniture

OVVO offers designers more freedom to innovate — both practically and visually. Our click-together products can connect a wide range of wooden joints. With invisible fixings and optimal panel fit, the overall finish is consistently superior.

Award-winning innovation

Our products have received recognition from some of the most influential institutions on the planet including many interzum awards, most notably the 'Best of the Best' (ran in collaboration with Red Dot), a global endorsement of belonging to the "best in business for design".

ABOUT

SWOOD

So, as you know, it is almost impossible to have a unique and complex piece of furniture or cabinet for every single project. The more complex and customized furniture is getting, the more effort one must put in to have a well-engineered product. And not only that, it should be produced on time and at a reasonable price.

Well, at EFICAD, we have developed a solution that can tackle all these challenges called SWOOD. SWOOD is a CAD/CAM software for woodworking, from design to manufacturing. With SWOOD, you can create new projects in a few clicks by automating all the repetitive tasks from design to manufacturing and making them ready for mass customization.

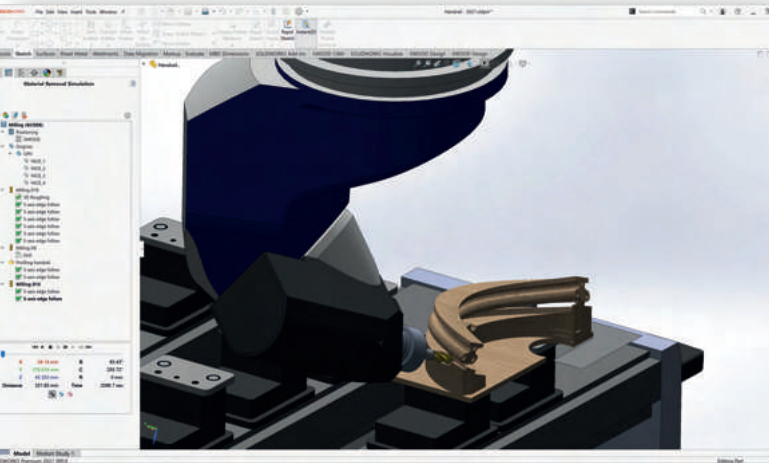
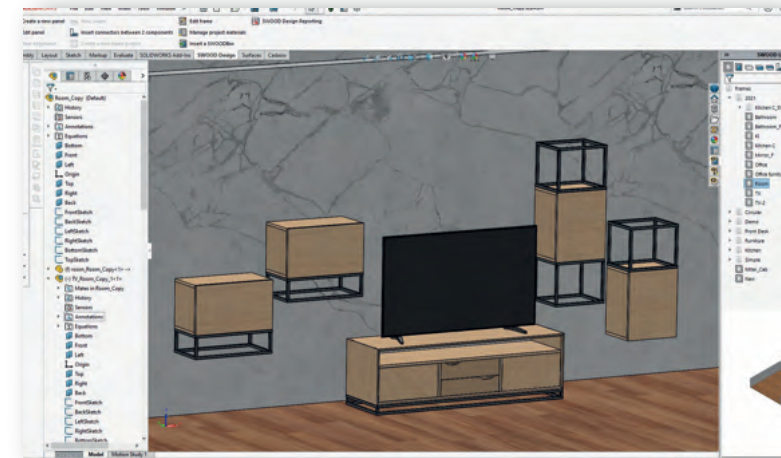
SWOOD is for anyone designing and producing in the wood industry. The users can easily produce furniture, shop fittings, vehicles interiors of boats, trucks, vans, etc. interior fittings such as kitchen, wardrobe, bathroom cabinets, etc. joinery, office furniture, point of sale, and many projects.

This software is flexible and scalable, thus it is being used by international mass manufacturers to small woodworking shops.

SWOOD PORTFOLIO

SWOOD Design allows you to quickly model furniture, furnishings, interior fittings, etc., thanks to dedicated woodworking features in SOLIDWORKS. These features are:

- SWOODBox
- Connectors
- Parametric modelling
- Layout mode
- Automatic data export



SWOOD CAM enables fast and efficient control of CNC woodworking and panel machines. These CNC machines have specific tools (drilling block, edge banding unit, form tools, etc.) as well as specific holding technologies (suction cups/bar, clamps, solid table) The features of SWOOD CAM:

- Automatic machining
- Adaptation to design changes
- Simulation of CNC trajectories
- Program export
- Up to 5 simultaneous axes
- Management of machining tables / special tools





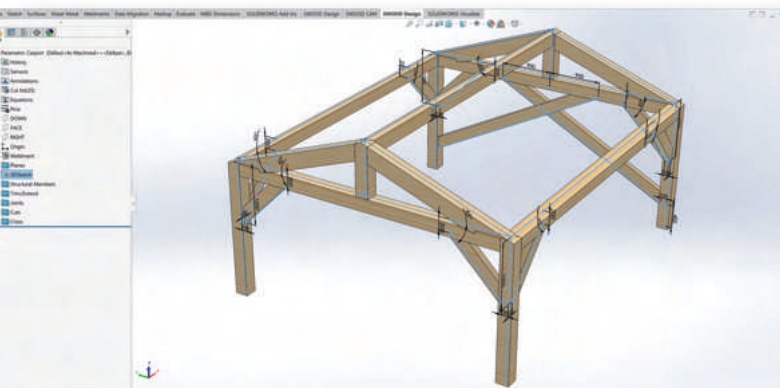
SWOOD Nesting is an additional module of SWOOD CAM. It optimizes the position of the parts and panels of a project in a large panel (Nesting sheet/ board). The objective of the nesting process is to minimize the raw material. The features of SWOOD Nesting:

- Nesting from 3D model
- Combine multiple projects and materials
- Optimal holding
- Manual nesting
- Grain matching on panels
- Reporting



SWOOD Center, integrated within SOLIDWORKS, automates the design and production of woodworking projects by linking any database (ERP or MES). Features provided by SWOOD Center

- Configurator
- Link with company database
- Auto-generate SWOOD Report
- Automate the manufacturing process
- Tailor-made solution



Create CNC machine programs for timber/wood framing projects to mill beams and panels for walls with SWOOD BW (Beam & Wall) The features of SWOOD BW:

- 3D Parametric and Flexible Design Tools
- 3D Geometric analysis
- Multiple machine language output
- Possibility to reuse models
- Several export configurations
- Import from various files (STEP, IFC...)



HOW ARE OVVO PRODUCTS INTEGRATED WITHIN SWOOD?

We know a connector is a reusable product that needs to follow different positioning rules depending on several parameters (contact surface length, width, angle, etc.). The connectors are hence library-based on SWOOD to reuse them easily.

All OVVO connectors' references are integrated within the SWOOD Libraries as standard and are updated at each OVVO hardware release.

One major advantage of SWOOD libraries is that our integrated components are ready to use with a simple drag and drop from the library to your project. All these library components are editable and customizable to meet our users' needs.

This full integration is beneficial for both the design and manufacturing processes, with the insertion of a 3D model and machining associated. The trajectories and programs for your CNC machines can be easily generated as well. SWOOD Report will gather all the needed information for the workshop or even different company departments (quantity, reference, connector visual, costing...)

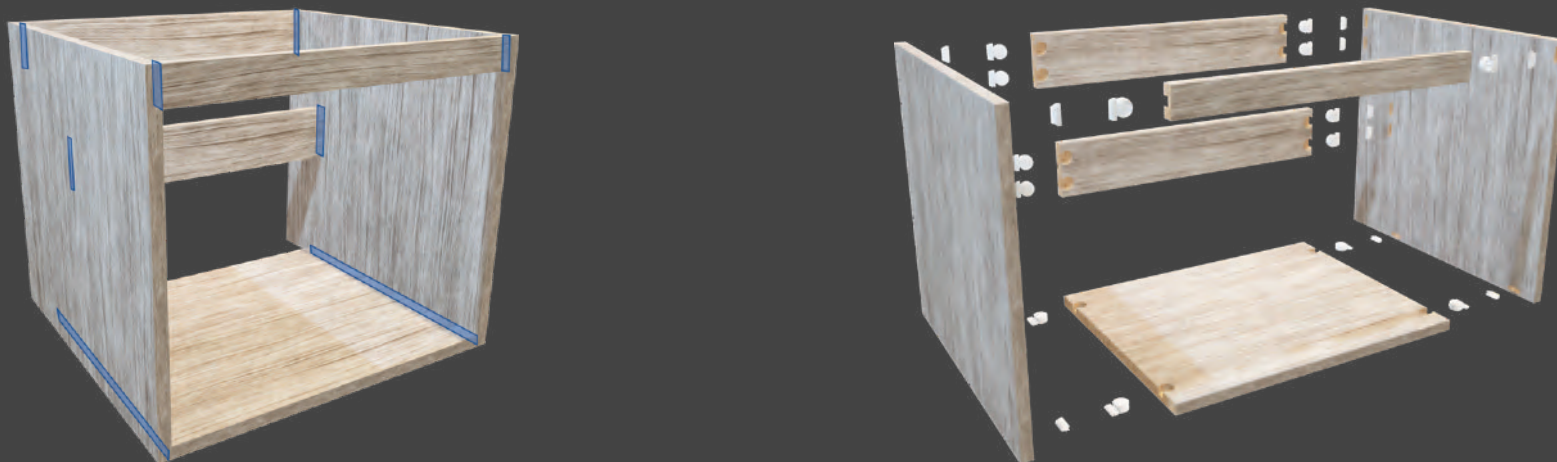


OVVO x SWOOD Design

So how does the SWOOD connector feature works?

SWOOD detects and highlights all the contact surfaces available in the 3D model. Select these surfaces with a box selection tool, or pick them to insert your fixings. The parametric side of SWOOD adapts each connector's position and quantity on the contact surface selected between the panels that need to be assembled. At this step, you have a preview of what will be the insertion result, and you can change it if needed. You have the OVVO fixings inserted, and all associated machining.

SWOOD Report extracts all the data available in the 3D model and creates workshop documents. One of them is a hardware list that gives you the information on how many OVVO fixings you have in the projects with complementary information, such as cost, reference, etc.



OVVO x SWOOD CAM

Now that you have the design, the question is, how can I mill it?

The process is straightforward. With SWOOD CAM, all you must do is drag and drop to apply your predefined machining strategies templates.

The manufacturing module of SWOOD is based on shapes recognition, so once the machining strategy is dropped on the 3D model, it automatically creates the tool trajectories.

This machining strategy is also saved in a library, allowing you to quickly apply it on any part that contains this connector machining.

You can also visualize the result of the trajectories in the simulation mode with material removal that also contains features like scrap and collision detection.

It is compatible with all machine brands on the market like HOMAG, BIESSE, SCM, MAESTRO, Felder, HOLZHER, and many more.



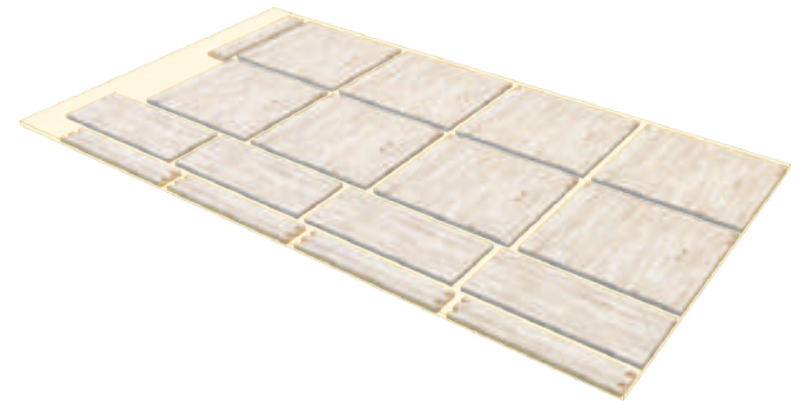
OVVO x SWOOD Nesting

What if I am using Nesting machines?

Since you have inserted your machining strategy on the part, no need to do anything else. All the CAM information is forwarded in the Nesting Module.

By consequence, you only need to focus on your nesting parameters to have panels nested in nesting sheets with all the trajectories updated. Define a part group with grain matching, bridges, or even part position in the manual mode of the nesting.

SWOOD Report also includes dedicated pages that list all nesting sheets, programs, and labels in different formats, such as: .HTML, .EXCEL, .PDF, and other related formats.



CONCLUSION

In conclusion, OVVO provides you with the perfect solution of connectors to make it easy for you to set up your furniture. The push-click-connect mechanism of OVVO connectors results in significant reductions in assembly times and delivers zero frustration.

While SWOOD, allows you to create your dream custom furniture designs in a few steps. It optimizes all your designing and manufacturing processes to produce the ideal furniture products.

OVVO integration within SWOOD provides you with another dimension of features and products to create your complete woodworking project. OVVO connectors are completely integrated within SWOOD libraries and can be used by a simple drag-and-drop process.

And as mentioned before, this full integration is beneficial from the design process with the hardware insertion to the manufacturing process, with all the trajectories encoded. These trajectories are gathered into SWOOD Report with the needed information for the workshop or even different company departments.

Hence, as a woodworker, an integration like SWOOD and OVVO will allow you to reach greater aspects of your business.



FEW WORDS BY FOUNDERS

“Most people in the world have experienced the fading exuberance of bringing home a piece of flatpack furniture, subsequently spending a number of hours putting it together vowing never to do that again. Our connection system brings to end-users a simple “Push-Click-Connect” mechanism that results in significant reductions in assembly times and delivers zero frustration. No tools, no glues, no screws. Ever. Again.”



Brendan Phillips
CEO



Christophe Vermeloux
Managing director

“SWOOD is a product created by woodworkers for woodworkers. We are working in providing a best in class solution that meets all the industry needs. With SWOOD as your woodworking solution, you can easily optimize your design and manufacturing processes and create furniture of your dreams. Our woodworking CAD/CAM software is also a certified gold product of SOLIDWORKS and is already present in 50 countries around the world.”

THANK YOU FOR READING



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