**Quick and easy online engineering**

**Get the perfect engineering  
solution in just a few clicks**

**Digitalisation is making steady strides in mechanical engineering. With the help of online tools, engineers are able to configure factory equipment in great detail. However, if they are to cope with the stringent demands and ever-increasing workloads in engineering, they require tools and configurators that can deliver clear productivity benefits. The** [**item Engineeringtool**](https://welcome.item24.de/engineeringtool?elq_form=DE-IN&elq_campaign=engineeringtool&elq_source=adwords&elq_medium=cpc&gclid=Cj0KCQjwtsv7BRCmARIsANu-CQevD4PhFdmIPkkwMjwqjapBHiYuilc7kCqD5BndSfHA16kB-vY1ROYaAkCvEALw_wcB) **offers users an intelligent and ingenious piece of software that combines the flexibility of a 3D engineering solution with an intuitive and straightforward user guidance system. Integrated filters and calculation tools make it easier for users to select the right components. These tools help them complete even highly complex engineering tasks more efficiently and much faster than when working in a conventional CAD environment.**

Online tools have been a trusted aid for mechanical and factory equipment engineers for some time now. However, conventional product configurators often focus on a predetermined selection of variants and offer little flexibility when it comes to combining individual components. “Our in-house development – the item Engineeringtool – doesn’t restrict the selection or use of system components,” explains Christian Thiel, a product manager and online tools expert at item. “This digital engineering solution is also under constant review, and we’re always adding new functions and components.” Users have an extensive catalogue of products from the item MB Building Kit System and Lean Production Building Kit System at their disposal to help them complete their engineering project. At the start of the project, they select a profile and drag and drop it onto the large 3D engineering area. Profiles are clearly identified based on their design, number of grooves, product line and material thickness. There is also the option to define the maximum deflection and buckling permitted for a specific profile length. This way, engineers can use the appropriate filters to find the right profiles for their particular application. None of this requires any specialist expertise. This software also makes it easier for users to choose compatible accessories, such as Caps, Knuckle Feet and Castors. Any collisions between components are immediately flagged up and need to be rectified before the user can continue with the engineering process. What’s more, an integrated plausibility check prevents components from being placed incorrectly. All users have to do is drag profiles, fasteners and accessories close to the point on the profile where they are to be fixed in place and they are automatically incorporated in the correct position. The intelligent program ensures only compatible components can be selected, as appropriate to the details provided by the user. This rules-based engineering approach reduces the risk of errors occurring in the working process. Thanks to the integrated variant technology, engineers can modify the characteristics of the product configuration at any time and switch from standard profiles to a design using lightweight profiles, for example. Not only that, but the length of the profiles can be easily altered at any time.

**Engineering made much easier**

The item Engineeringtool lightens the workload for engineers. A good example of this is the process of adding caps or covers to the profile ends in a design, which usually involves searching through an extensive catalogue to track down the right size of cap for each profile one by one. In the item Engineeringtool, however, users only have to select the desired cap once, which they can then drag onto the ends of various profiles, at which point it immediately and automatically adapts in size. If users add floor elements such as Swivel Castors, they don’t have to specify any screws or other fixings. “The item Engineeringtool automatically knows which small parts are needed to fix components in place,” says Thiel. “This way, users can focus entirely on the engineering tasks at hand.” Repetitive engineering steps are easy to carry out, too. For instance, relevant components can be selected and duplicated with a simple double click, making it possible to create basic frames in next to no time. To connect individual components with absolute precision, users can enter exact length values for each component using their keyboard and use a lock function to keep components at the specified dimensions. The design can be viewed from various different angles, as the display can be rotated in all directions. Once the design is complete, all the components are listed in a summary, which can be used to subsequently change individual components or entire designs, such as the colour and design of the profiles or the type and number of grooves.

**Export designs to common CAD programs and share them around the world**

The item Engineeringtool can be used by almost anyone, without the need for extensive induction training. CAD skills are not required, and common standard tasks can be carried out quickly. Users can create designs anywhere on any end device with internet access – without any additional software. Once the design is complete, the price is calculated, the project documentation is generated, and the design can be further processed in CAD systems. “Our CAD data output function ensures customers can take projects completed in the item Engineeringtool and continue working on them in a conventional CAD environment,” says Thiel. “When exporting constructions to common CAD programs, the complete geometry is transferred.” After the customer has named the project and registered with item, the project is assigned an internationally unique project number. This makes it easy to share designs with colleagues around the world, ensuring everyone has the same information. Once a corresponding link has been sent or a QR code has been scanned, every recipient can access all the information about the current project without having to rely on a CAD program – and all from any end device, be it a smartphone or desktop workstation.

**Documentation made easy**

Design processes tend to involve a lot of administrative work for engineers. “The documentation process is at least as time-consuming as the engineering itself,” explains Thiel. “It’s not uncommon for it to take two hours or more to create a dimensioned drawing, the parts list and the machining plan.” The item Engineeringtool saves users a great deal of time. The software analyses the design and all its installed components, checks how the profiles are machined and connected, and creates the final documentation in next to no time. Users can choose between compact, detailed or complete documentation. A parts list, a detailed machining plan, a multiview projection, an isometric drawing showing all dimensions, an exploded view and a straightforward, step-by-step installation guide for assembling the systems are all included in the documentation. Using the digital twin, the item Engineeringtool identifies the necessary machining and assembly steps and arranges them in the correct sequence.

**The clear advantages of a smart tool**

By compiling complete, error-free data and transferring it to the parts list and machining plan, the item Engineeringtool delivers a process chain that is digital from start to finish. This helps prevent any misunderstandings and considerably reduces the overall throughput time for a project. Registered users can access all the parameters relating to orders and deliveries via the item Online Shop. Once an order has been placed, it is shipped as a complete construction kit within a very short time. A package is delivered with the necessary machined profiles and the associated small parts. Customers can also commission item to assemble the entire construction, if they wish. This way, they benefit from a high level of availability and keep their warehousing requirements to a minimum. “When developing the item Engineeringtool, we set out to offer engineers countless user-friendly functions designed to make their lives easier,” explains Thiel. “Thanks to integrated variant technology, optimum component placement, the automatic application of connection processing and the rapid generation of project documentation, engineers can concentrate entirely on their actual job – engineering.” item also responds to user feedback and is constantly developing its software solution. Users are always working with the most recent version of the software and can get an instant overview of the latest changes, product enhancements, updates and bug fixes in the item Engineeringtool change log.

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**Caption 1: The item Engineeringtool lightens the workload for engineers – basic frames can be created in next to no time.**

**Caption 2: Engineering designs can be easily shared with colleagues around the world.**

**Caption 3: The online software is easy to use and can be accessed from any end device.**

**Caption 4: Christian Thiel, a product manager and online tools expert at item: “The item Engineeringtool** **makes it possible to complete even highly complex engineering tasks more efficiently and much faster than when working in a conventional CAD environment.”**

**About item**

item Industrietechnik GmbH is a global market leader in building kit systems for industrial applications and employs around 500 members of staff. It has been designing and marketing construction solutions for machinery, fixtures and plants since 1976. Today, the item product portfolio comprises more than 4,000 high-quality components designed for use in machine bases, work benches, automation solutions and lean production applications. Thanks to the inclusion of transport solutions and dynamic elements, the company’s products can cover virtually all working processes, from manual production to automated manufacturing. The highly skilled employees work day in, day out to develop innovative solutions for state-of-the-art mechanical engineering and also offer exceptional consulting services. item is headquartered in Solingen, Germany. Eleven branches and support centres ensure the company is always close to customers in Germany. The group has wholly owned subsidiaries in the USA, China, Mexico, Italy, Poland and Switzerland.

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