**Cable conduits accessible from the outside and ingenious fasteners**

**Perfect support when building machine cabins**

**Machine cabins need to meet a whole host of requirements. Depending on how they are being used, they are designed to protect processes or components against external influences such as light, dust or other impurities. Besides this, though, they also provide vital protection for staff and the environment. When it comes to incorporating flexibility into the design of machine enclosures, standard systems quickly reach their limits. The objective is to ensure quick and easy cabin assembly, maximum stability and secure and convenient cable laying, so modular building kit systems offer significant advantages. Conduits that are accessible from the outside make it far easier to lay cables, which also means operating elements can be installed quickly.**

Some mechanical engineering and industrial processes require special protection. Machine enclosures are an ideal solution. Besides protecting sensitive production processes, they are also designed to ensure staff are not exposed to excessive noise or contact/emission-related risks. Some machine cabins are used in custom applications such as laser processes, where the enclosures need to prevent light from getting in and disrupting the process. They must also ensure no laser beams escape into the surrounding area. In other applications and processes, special cleanroom criteria need to be met. In this case, the cabin interior must be kept sterile and free of dirt. All this places high demands on machine enclosures.

**Modular components for maximum flexibility**

Whereas welded structures are rigid and inflexible, screwed connections can be quickly adapted to changing conditions. A modular building kit system comprising various components that are all compatible with each other ensures maximum flexibility. “Our Line XMS makes building machine cabins a quick and easy process,” says Uwe Schmitz, product management team leader at item, the pioneer in building kit systems for industrial applications. “Stable aluminium profiles and the appropriate fastening technology create frames in different formats that are perfect for the relevant work process,” he adds. The modules of [Line XMS](https://welcome.item24.de/xms) from item ensure maximum freedom when designing machine cabins, which can be curved, angular, long or compact and are also easy to modify or extend later on, if necessary. Boasting smooth outer surfaces that are very easy to clean, the cabins also benefit from seamless transitions between the individual profiles. Special Door Profiles are used to create perfectly closing doors, hatches and maintenance openings in all sizes and thus provide quick and easy access to various process sections. What’s more, the series-standard sealing groove keeps the interior clean and free of dust.

**Convenient cable laying in machine cabins**

Cable conduits integrated into the aluminium profiles make for structured cable routing. These conduits can be sealed using easily adaptable Cover Profiles, thereby ensuring the cables are secure and protected. If necessary, plastic Conduit Profiles can be clipped into the profile groove. In most cases, laying cables inside machine enclosures involves a great deal of work. Moreover, integrating and connecting controls such as switches and buttons is both tedious and taxing. Installing these from the outside is far more convenient, so item extended the XMS profile system and developed Profiles X 8 M45 - XMS to make laying cables far simpler. Thanks to the inside-out principle, cables and leads can now be accessed from the outside. The cable conduits are open to the outside, which also means operating and control elements can be connected to applications inside the cabin in no time at all. Once the cables have been installed, the profiles are sealed using Cover Profiles.

**Creating ingenious fastenings**

The objective when laying cables is to connect machinery and equipment located inside cabins to operating elements and switches on the outside as easily and neatly as possible. Given that cables need to be routed in all sorts of different ways, fastening options must make it easy to switch between vertical and horizontal directions and vice versa during this process. Whereas profiles previously required additional machining before a cable could be routed in the other direction, item now offers special fasteners for these intersection points. They can be used in any location, holding the profiles together and making it easy to lay cables within the frame structure. Besides fastening the horizontal and vertical sections together quickly, they also create a cable feed-through to connect the equipment inside the cabin. No profile machining is required for this purpose. “This next logical step builds on the basic principle of our Line XMS. Specific requirements can be met with great flexibility and minimal assembly work,” explains Schmitz.

**Easy integration of standard components**

The clip geometry of item profiles is ideal for integrating electrical components from the M45 standard system. Switch, display and operating elements from different manufacturers can therefore be used in addition to item components. Factory equipment engineers can choose exactly the components they want and are not confined to a limited selection. The way operating elements are secured in the new Profile X 8 80x80 M45-36° from item is especially ergonomic. Here, too, there is a clip profile to quickly integrate M45 standard components into the horizontal section. Components are connected together without any difficulty, while sockets, operating elements and Cover Profiles simply clip into place and are easy to release again if necessary.

**Extensive design freedom and a sophisticated look**

From a rotating robot to a linear axis six metres long, [Line XMS](https://www.item24.de/en/productworld/machine-enclosure-system-xms.html) can create enclosures in different formats with virtually unlimited lengths and widths. All components are compatible with the building kit system. This means, for example, that carrier systems such as the item Groove Plate can be combined with Line XMS components. The portfolio includes numerous variants of the aluminium profiles and caps, along with Base Plates, Transport Plates, door solutions, Light Fittings and Lamps, safety sensors and further accessories. This extensive range makes it possible to create several functional sections, such as a further area above the process section for air filters, exhaust systems and air-conditioning technology. The supply section can also be located below the process section, with separate door segments providing easy access for maintenance work on pumps, motors or other units. The huge selection of materials for the panel elements offers a great deal of freedom when it comes to the panel design. Whether they are curved, have distinct edges or are octagonal, the frames look both sophisticated and aesthetically appealing. For this very reason, Line XMS from item has already won a German Design Award and an iF product design award for its uniform overall design and clean lines.

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**Caption 1:** The modules of Line XMS from item offer maximum freedom when designing machine cabins, which can be curved, angular, long or compact.

**Caption 2:** Doors close perfectly thanks to special Door Profiles and the series-standard sealing groove.

**Caption 3:** item has made laying cables far easier with Profiles X 8 M45 - XMS. Thanks to the inside-out principle, cables and leads can now be accessed from the outside.

**Caption 4:** The cable conduits enable operating and control elements to be connected to applications inside the cabin in no time at all.

**Caption 5:** Fastening Sets are used to lay cables and leads within the frame structure, quickly fastening together the horizontal and vertical sections.

**About item**

item Industrietechnik GmbH is the pioneer in building kit systems for industrial applications and a partner of the manufacturing industry across the entire globe. 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. The company has received a string of awards for products with ground-breaking industrial design and end-to-end ergonomics.

item is spearheading digital engineering by driving forward the digitalisation of processes with software tools developed in-house. The item Academy offers training at various levels, with on-demand training and online courses available in multiple languages.

Headquartered in Solingen, Germany, item has subsidiaries in various countries. Some 900 employees worldwide harness their know-how and passion to develop innovative solutions and services. Twelve sites make sure the company is always close to customers in Germany, with a global logistics chain ensuring swift delivery times for all components.

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