

No. 739 | SEPTEMBER

Bossard News

Assembly technology expert | Practical training with Expert Education ...
Smart factory logistics | Reliable, seamless, efficient supplier management ...
Product solutions | Invisible connections with PEM® Ghost™ technology ...

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EDITORIAL



Dear customers,

Following some turbulent years, 2023 is proving to be another year of insecurity. Many national economies have been plagued with inflation for the first time in decades, resulting in sharp interest rate rises from central banks and the risk of weaker economic growth.

In most countries, the PMI remains well below 50, with no upward trend in sight as of yet. Nevertheless, the labor market remains tight and qualified employees are hard to find, causing wage costs to rise further. Despite these trends, we have started off 2023 strong, and with sales of CHF 577 million (-1.5%) in the first half of the year, almost maintained our record from 2022 (when calculated in Swiss francs), and even exceeded it by over 3% in local currencies.

In view of current economic conditions, this is a very positive development, and we have our customers to thank for it. They continue to choose our added-value solutions in the Smart Factory and Engineering field to keep their overall costs for C-parts procurement low in the long term while maintaining high availability and product quality.

We expect more difficulty in the second half of 2023 and will continue to do everything to ensure our solutions make our customers even more competitive on the market.

I would like to thank our customers and partners for their outstanding cooperation – we look forward to providing you with our continued support.

PETER KAMMÜLLER

General Manager, Bossard Switzerland

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Online

The PDF edition of Bossard News is available online at:
www.bossard.com

JAMES WEBB SPACE TELESCOPE

Bossard's contributes to the exploration of our universe



Exactly one year ago, on July 12, what is currently the sharpest existing image of the distant universe was revealed, captured by the James Webb Space Telescope (JWST). Bossard is making its own contribution to understanding our cosmos, as the company is one of the main suppliers of fasteners for the payload fairing of the European launch rocket Ariane 5, which transported the James Webb Space Telescope into space.

On a mission to succeed with Beyond Gravity

Since as early as 1980, Bossard and its subsidiary Interfast AG have been supplying fasteners to the Swiss technology company Beyond Gravity, which has been producing the payload fairings for all missions since the first Ariane flight in 1979 and which supplied the structures for Ariane 5. The fairings play a crucial role in protecting payloads such as satellites or spacecraft, as well as in optimizing performance of the rockets during the initial phase. Thanks to their aerodynamic efficiency and shielding of the payload against external forces, they make a key contribution to the success of space missions.

Engineers and specialists from Bossard maintain a close collaboration with Beyond Gravity and provide advice on individual fasteners and drawing parts. In total, Bossard supplied more than 1,000,000 fasteners – screws, nuts, special washers, clamps, nipples and specially developed rivets for the payload fairing's separation system – to Beyond Gravity during the partnership. At the end of 2023, the Zurich-based Swiss company was tasked with producing the payload fairings for Ariane 6, the next generation of European launch rockets. In the future, Bossard will also play a key role in supplying fasteners to Beyond Gravity.

“Beyond Gravity views customer satisfaction as its top priority. We continue to do everything we can every day to exceed our customers' expectations when it comes to the industrialization of our products and the supply chain.”

Franz Straumann, Senior Manager Manufacturing Engineering

“We depend on reliable partners who stay one step ahead with us. Thanks to years of successful cooperation, Bossard is well-versed in our requirements and we are delighted to continue our journey together as a result of its affordable standard components and clever special solutions,” says Franz Straumann, Senior Manager Manufacturing Engineering.

JWST model in 1: 4 scale at Bossard World in Zug

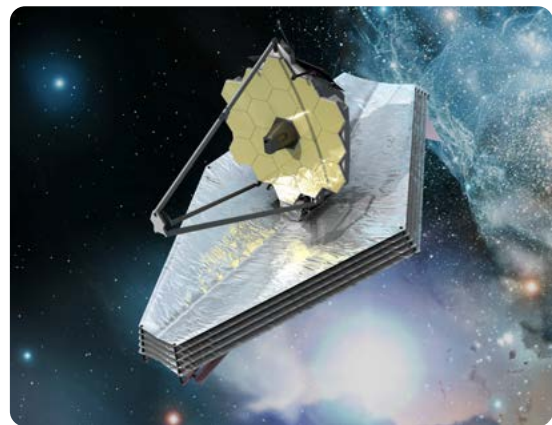
JWST will expand our knowledge of the solar system, the first galaxies, the origins of stars and planets, and the search for exoplanets with the potential to host life. On December 25, 2021, an Ariane 5 rocket launched from the European space port in French Guiana successfully transported the JWST into space, and the telescope now delivers images that no human has ever seen before.

For Guido Schwarz, Director of the Swiss Space Museum, it was clear early on that this space telescope would be in a class of its own. Even before the launch in December 2021, an idea crystallized of building a model of the JWST. “We quickly agreed that a large model was needed,” says Guido Schwarz: a 1: 4 scale model, that is, more than 5 meters long and 3 meters high. Bossard AG is proud to sponsor this project, which could be seen at Bossard World in Zug during the summer months.



“We are proud to contribute to the exploration of the universe with our fasteners for the Ariane launch rocket. Thanks to its unprecedented abilities and potential for revolutionary discoveries, the James Webb Space Telescope will expand our horizon and inspire generations to reach for the stars.”

Dr. Daniel Bossard, CEO Bossard Gruppe



Images:

- Ariane 6 Animation Page 4; Source: ESA
- JWST large-scale model and Daniel Bossard Page 5; Source: Bossard
- JWST Animation Page 5; Source: NASA



ENGINEERING

**Assembly
Technology Expert**

EXPERT EDUCATION

Practical training for safe assembly and fastening technology



With Expert Education, we turn you into experts in assembly and fastening technology. The offer ranges from standard training to specialist seminars tailored to your needs. Join in and invest in your product safety.

It is a cool but sunny Tuesday morning: Dominik Schmid, Application Engineer at Bossard, is making the final preparations for his seminar on safe screw joints. A diverse program of theory and practical exercises on the workbench awaits the 12 participants – you will not find hours of slideshows here.

At the end of the specialist seminar, the most important questions will have been answered:

“Which fasteners are the most suitable for the screwing application?”, “How can I reduce setting losses?”, “How do lubricants affect the screw joint?”, “Can I rely on my gut feeling when tightening?”, “Which standards and guidelines need to be observed in fastening technology?”

Why a training program?

Technological developments, statutory requirements and industrial standards have an impact on the guidelines and standards applicable in fastening technology. This means knowledge of the topic needs constant updating. To help you ensure maximum product quality and safety, we will train your employees in the basics and on specific topics alike.

What types of training courses are offered?

We offer a wide range of courses, ranging from providing fundamental knowledge on fasteners and core topics such as safe screw joints, corrosion, or cost savings right down to qualification in fastening technology in line with VDI/VDE 2637. If required, we can also adapt the seminars to specifically suit your company.

Who are the Expert Education training courses designed for?

This varied training program is aimed at anyone who comes into contact with assembly and fastening technology. Participants come from companies in all kinds of industries, such as the automotive industry, construction, electronics, food, medical technology, robotics and the rail industry. Whether in engineering, maintenance, production, quality assurance or procurement -management – we always provide the specialist knowledge to suit your target audience at the Bossard Academy in Zug or directly on your production site.



What learning formats are available?

Our seminars, workshops and training courses help you implement ideas for new products and cut overall operation costs in production by up to 40 percent. An e-learning portal where you can access specific specialist knowledge at any time on demand complements these formats. All learning formats can be used independently or in combination with existing programs.

The benefits of Expert Education for you:

- Providing up-to-date knowledge in fastening technology
- Laying out screw joints correctly
- Designing your product with the right fastening elements
- Developing a cost-effective, safe product
- Meeting quality standards
- Ensuring a smooth assembly process

Are you interested in benefiting from our expertise?

Allow us to help you find the best training offer for your company or find out more about what we have to offer in our video:

SCAN ME



VIDEO





Smart Factory Logistics

SUPPLIER MANAGEMENT

Reliable – seamless – efficient

Our supplier management is a game-changer for companies working in the dynamic world of smart factories. Split shipments, rising costs and complex inventory management are just a few of the issues that can compromise operational efficiency.

However, our consolidated solution offers a revolutionary approach to supplier management that addresses the above issues while transforming the logistics landscape. Let us use the typical pain points of our customers to look at how our supplier management solution can help with optimizing processes, reducing costs and improving efficiency in smart factory environments as a whole.

Partial shipments and rising costs

Our supplier management solution eliminates the problem of fragmented shipments by merging orders from multiple suppliers into a single shipment. Optimizing transport resources in this way reduces the number of shipments, which in turn greatly reduces logistics costs and helps companies achieve a competitive advantage. At the same time, it reduces the ecological impact on the environment.

Inventory management and space optimization

Managing inventories and storage space can prove challenging. Using our solution, companies can consolidate their orders and optimize their inventory management. This in turn reduces the amount of storage space, minimizes waste and improves overall use of storage space, leading to increased efficiency and cost savings.

Delivery reliability and customer satisfaction

Our supplier management optimizes logistics processes by keeping potential delays due to fragmented shipments to a minimum. Reliable deliveries and consistent fulfillment of customer expectations allow companies to improve delivery reliability and increase customer satisfaction. This promotes strong customer relationships and positions the company as a trustworthy partner within the industry.

Promoting ecological sustainability

Every customer who uses our supplier management becomes part of the wider Bossard network with shared supplier base. In this way, shipments and transport routes can be additionally consolidated, further reducing fuel consumption.

For example, one prominent Swiss customer was able to avoid 24% of CO₂ emissions within one year – without consolidated deliveries, this would not have been possible.





PRODUCTS

Product Solutions

FASTEKS® COMPRESSION LIMITERS

A strong hold in plastics

FASTEKS® compression limiters are injected into or pressed into plastic components. They reinforce and protect the plastic component by absorbing pressure forces that arise when a screw is tightened during the assembly process.

How they work

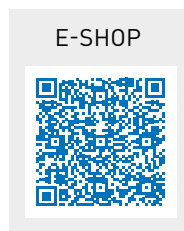
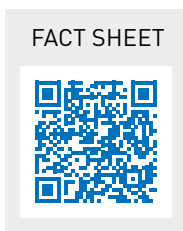
Soft and porous plastics are unable to counteract radial forces caused by screw joints. This results in stress cracks and fractures in the carrier material. The special design and geometry of the FASTEKS® compression limiters ensure a compression of less than 1% of the total length of the compression limiter, thus guaranteeing that the screw sits securely while also protecting the component. FASTEKS® compression limiters offer sufficient mechanical strength to withstand the clamping forces generated by a tightened screw in ISO class 10.9.

Installation

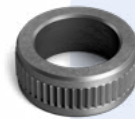
The centralized external knurling enables the plastic to gradually flow around and into the knurling during the molding process. During press-fit installation, the non-knurled region ensures that the compression limiter is sitting precisely in the drilled or molded opening before assembly.

Designs

FASTEKS® compression limiters are available for mounting screws of dimensions of M4 to M10. They are made from zinc-nickel passivated steel and are each available in two round and oval-shaped designs with head and headless. The oval shapes offer additional flexibility with regard to eccentricity and tolerance compensation. The greater contact surface of the head guarantees a higher axial load.



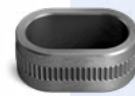
Further information and performance data can be found in the fact sheet.



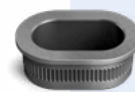
BN 2083 – FASTEKS® FCL 1
for press-fit and insertion, round, headless



BN 2084 – FASTEKS® FCL 2
for press-fit and insertion, round, with head



BN 2088 – FASTEKS® FCL 3
for press-fit and insertion, oval-shaped, headless



BN 2089 – FASTEKS® FCL 4
for press-fit and insertion, oval-shaped, with head

PEM® GHOST™ FASTENING TECHNOLOGY

Invisible yet firmly connected

A real novelty and the essence of a perfect connection in one: PEM® Ghost™ technology combines a fully concealed crimp closure with a magnetic opening mechanism, meaning that there are no visible ways to dismantle the fastener when connected.

How they work

The connection consists of a male and female part, which are each pressed into the elements to be connected using tried-and-tested press-fit technology. The connection locks when the two counterparts are joined and the bolt of the fastener snaps into the socket. The resulting connection is completely concealed and can only be opened using the correct magnetic unlocking tool. This tool is individually manufactured for the particular application. It is the only way to unlock all installed PEM® Ghost™ fastenings at the same time so that the components can separate.

Designs

Like the unlocking tool, the PEM® Ghost™ fasteners can also be customized to suit the particular application. The samples currently available are made from stainless steel with a diameter of 5.4 mm and a length of 3.3 mm.



Aesthetics and access control

Since the fasteners are installed in a concealed fashion and are therefore invisible, a whole range of new design options opens up without any need to consider technical aspects of the connection. Many manufacturers also want their products to be secured against unauthorized opening. PEM® Ghost™ products meet this requirement through the lack of any visible access option. Even people who know the fastening can be unlocked magnetically will have difficulty finding the right points and magnetizing them at the same time without using the correct unlocking tool.

PEM® Ghost™ fastener in closed state



Meanwhile, those with authorization can easily undo the connection using the suitable tool—for example, to perform repairs or maintenance work.

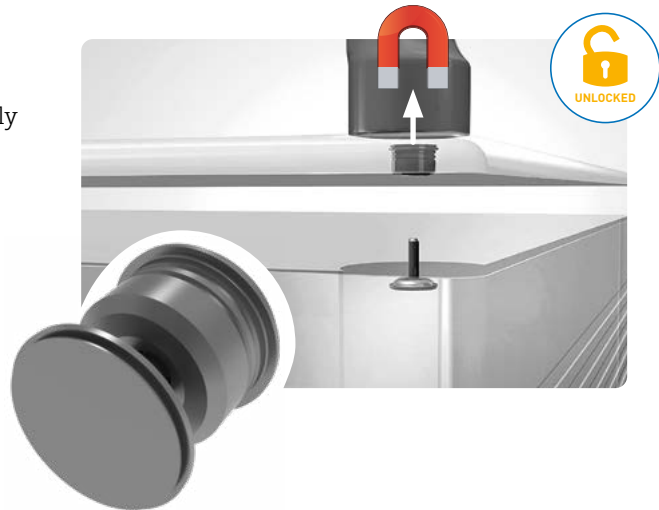
End users could also potentially be enabled to create their own connections with various designs or counterparts using the unlocking tool.

The benefits at a glance

- Complete customization possible
- Access control for your applications
- New design possibilities due to invisible connection
- Flat design for sleek aesthetics
- High reliability of the connection
- Fast assembly and disassembly as frequently as desired using the unlocking tool

Typical application areas*

- Telecommunications
- Servers
- Safety technology
- Consumer products
- Access hardware
- Household appliances
- Motor vehicle electronic systems
- Vehicle trims
- Medical technology



VIDEO



FACT SHEET



WEBSITE

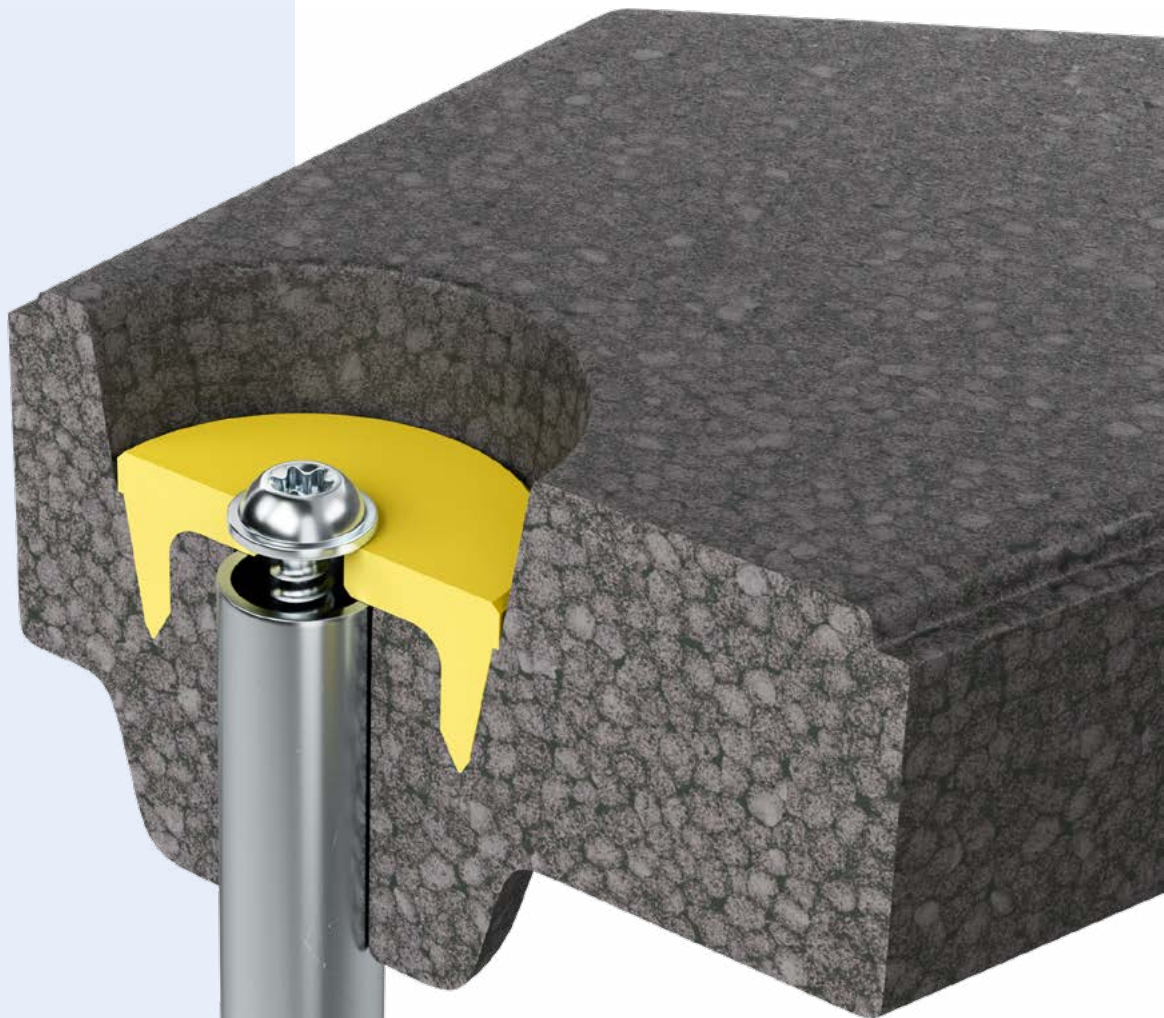


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* GHOST™ fasteners should not be used for entertainment electronics products

A SUCCESS STORY WITH STOROPACK

A milestone: a production solution for crashpads in the automotive industry



Storopack, a world-leading system supplier of custom-made protective packaging and molded parts, teamed up with Bossard to develop customized crashpads for a premium automotive manufacturer. In the process, the world's first automated series system for setting LiteWWeight® zEPP fasteners in EPP foam crashpads was commissioned, marking a new milestone in the automotive industry.

It all started on a normal Monday with a phone call from the development manager at a German automotive manufacturer. The job: to produce and supply customized EPP foam crashpads for their latest premium-class model. Crashpads are molded parts used in the side doors of passenger cars to protect the driver and passengers in the event of a collision. But how could the materials be connected together?



LiteWWeight® zEPP WSH - developed for use

New materials mean new challenges

“Despite or even because of its porous nature, EPP foam boasts unrivaled properties in terms of weight and elastic strength. But the real challenge lies in connecting parts made of this material. Techniques such as gluing or foam coating quickly meet their limits when it comes to load capacity, process reliability and strength, especially when dealing with challenging applications such as the crash structure in question here,” says Ulli Raab, Project Manager at Storopack. “We needed a different solution and were looking for a partner to support us with expertise in design, production and assembly.”

And that’s where Bossard came in. “Thanks to our expertise in fastening technology and engineering, we are the ideal point of contact for our customers when it comes to finding the right solutions,” explains Christian Busch, Business Development Manager at Bossard. “We take into account different factors such as material type, component design, production method, assembly and strength requirements to ensure that the fastening solution suits the particular application perfectly.”

Using innovative technology and engineering to meet customer requirements

Bossard and Storopack decided to use Bossard's MM-Welding® technology platform to meet the customer's requirements. This innovative technology involves the partial liquefaction of thermoplastic materials using ultrasound to produce a precise, secure and durable connection. The LiteWWeight® zEPP technology was specially developed for the requirements of EPP component connections. It is suitable for a range of EPP densities and forms a strong, precise connection within seconds. "Our team of engineers modified the existing LiteWWeight® zEPP fastener in line with the requirements set out by Storopack and the automotive manufacturer to enable the connection geometry to be integrated into the design of the desired crashpad."

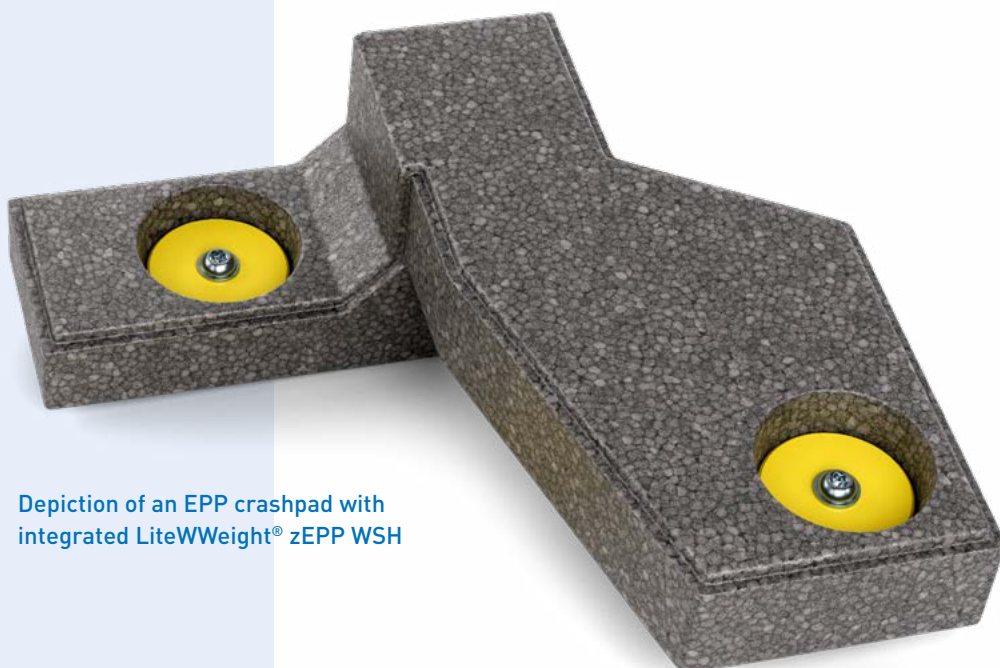
Thanks to the flexibility of the procedure itself and the engineers' skills in design and prototyping, the newly developed LiteWWeight® zEPP WSH proved to be the ideal solution for the particular challenges of this fastening project.

An industry milestone

Delivering large quantities of products to leading automotive manufacturers can be tricky, but Storopack and Bossard rose to the challenge with the same level of enthusiasm as they devoted to the project itself. Together they developed and established a new, automated system concept that meets many additional requirements of automotive parts in series production. This system is a world first, and Storopack and Bossard went through the entire process – from prototype to finished system – "hand in hand" to come out with a genuine innovation.

"We were looking for a partner to support us with expertise in design, production and assembly. Our partnership with Bossard has resulted in a world first."

Ulli Raab, Project Manager at Storopack



Depiction of an EPP crashpad with integrated LiteWWeight® zEPP WSH

High quality, optimized throughput, zero rejects

The automated production system boasts very short cycle times and enables the precise, automatic assembly of two fasteners per EPP component, with three crashpads being created simultaneously in a single work step. Ulli Raab: “The solution owes its strength and precision to optimized processes which help reduce time and costs in production. The automotive industry is uncompromising when it comes to defining and meeting quality requirements. All delivered parts must be one hundred percent as they should be and rejects must be virtually zero.”

The MultiMaterial Welding® technology passed all OEM tests with success, and each individual part is examined using cameras and sensors. “The individual component is only given the required RFID label if the entire setting process has run perfectly,” says Christian Busch. Quality is monitored in real time using big data, artificial intelligence and software to guarantee gap-free process monitoring. “This is poka yoke in its purest form and is currently unique worldwide in applications and processes of this kind.”

The partnership between Storopack and Bossard recently led to a groundbreaking solution for the automotive industry, combining cutting-edge technology with innovative problem-solving. The project’s success once again shows how important collaboration and multidisciplinary approaches are in today’s fast-paced, constantly developing market.

Customer benefits at a glance:

1. Precise fastening solutions: A fastening solution designed especially for the requirements of crashpad assembly (expert design) ensures optimal performance and safety.
2. Cutting-edge technology: The innovative MM Welding® technology enables precise, safe and durable connections, even in sensitive lightweight materials.
3. Optimized production: The automated production system cuts production times, lowers costs and optimizes throughput without sacrificing quality.
4. Zero-waste promise: The automotive industry is uncompromising. The solution produces virtually zero rejects and is a reflection of our commitment to sustainability and efficiency.

“We were looking for a partner to support us with expertise in design, production and assembly. Our partnership with Bossard has resulted in a world first: we commissioned the first automated series system for setting LiteWWeight® zEPP fasteners in EPP foam crashpads, marking a milestone in the field of fastening technology for composite materials in the automotive industry.”

VIDEO



Rear view of the EPP crashpad

GLOBAL – LOCAL: BOSSARD SWITZERLAND

Géraldine Frey and Bossard, a powerful connection



Switzerland

Bossard AG is teaming up with the fastest woman in Zug, Géraldine Frey, and supporting the sprinter in her journey to the 2024 Summer Olympic Games in Paris.

Bossard AG and the successful track athlete from Unterägeri are a perfect match. Peter Kammüller, CEO of Bossard Switzerland, is confident that, not only as a top athlete but also as a personality and representative of her country, Géraldine is a perfect choice for brand ambassador.

“Géraldine’s warm and natural character make her a welcome brand ambassador for our company.”

Géraldine Frey: Track athlete, Swiss champion and ETH student

The Swiss 200-meter sprint champion is not only an ambitious athlete: she also puts her all into her studies. The 25-year-old has been studying Pharmacology at ETH Zurich since 2017 and, in addition to her sporting successes, has proven to be a committed young woman with many interests.

Géraldine Frey has already achieved considerable successes in the sports world: she is one of the fastest women in Switzerland. As a 100-meter and 200-meter sprinter and member of the 4x 100 meter relay, she has represented Switzerland at multiple major events such as the World Athletics Indoor Championships in Belgrade. This season, Géraldine has shown off her skills at the following competitions:

- Swiss Championships in Bellinzona: **bronze medal in 100 m**
- International Summer Meeting, Langenthal: **1st place in 100 m**
- World Championships in Budapest: **100 m semi-final/4 x 100m final**
- Weltklasse Zurich: **Best time for the 100 m prelim in 11.25 s**

“With Bossard, I’m being supported by a traditional and innovative Zug-based company. It was important to me to partner with a company with strong roots in the region. I am delighted to have Bossard as a sponsor who practices values such as trust, performance orientation and team spirit, which I identify with very strongly.”

BOSSARD WORLD SHOWROOM

Get to know our products and services up close

We live in a fascinating world, surrounded by incredible products. Thousands of small parts such as screws and nuts are needed to build these. In our showroom – Bossard World –, we show off the versatile applications of Bossard's products and services in first-class customer exhibits.

Bossard World presents

USM – “Ulrich Schärer Münsingen” – timeless design and maximum quality.

The successful Swiss company employs around 400 employees at its production site in Switzerland and affiliated companies in Germany, France, the US, Japan and the UK.

The USM Haller furniture construction system was developed between 1962 and 1965. The well-known classic is used in offices, public facilities and private premises alike. At the end of 2001, it was included in the design collection of the Museums of Modern Art MoMA in New York (US), a great honor which confirmed the artistic character of the product.

Balls, screws and adjustable feet from Bossard

One unmistakable core element of this furniture construction system is the ball-shaped connector. It works its magic from the buildings of the world's biggest corporations to the Bundeshaus in Bern. It has a diameter measuring precisely 25 millimeters, is made from chrome-plated brass and has six fine threads distributed regularly across the ball body. Together with a 38.5 mm long screw and expander, it permanently holds together each USM furniture item. Adjustable feet made of special plastic give the structure a secure footing on any surface.

Though they appear simple, the components are as sophisticated and clever. There are no compromises in the USM. For almost a decade, Bossard has been one of three suppliers providing these three key components.

Further information at:
www.usm.com

SCAN ME



Loepfe – Quality control systems for textiles, developed and manufactured in Wetzikon

Since its founding in 1955 by brothers Helmut and Erich Loepfe, the company has been setting the pace for innovations in textile quality control. Loepfe has made its name with pioneering services in the field of optical yarn cleaners. Today, Loepfe is considered the specialist in integral quality control systems for the textile industry all over the world.

Through the use of innovative technologies and the clever PRISMA software, spinning mills enjoy many benefits, including higher profitability, improved yarn quality and effortless workflows. The state-of-the-art yarn monitoring system is proven to ensure consistently high yarn quality while increasing cleaning efficiency through reduced cutting rates.

Loepfe uses Bossard's SmartLabel for efficient material management of B and C parts

SmartLabel Cloud is an intelligent and modular labeling solution that can be applied anywhere. The displays show all relevant product information, including real-time order status and delivery date. Thanks to the latest IIoT communication and reliable data, Loepfe has everything under control at all times. Users trigger orders directly at the assembly work station with the simple touch of a button.



www.bossard.com

