



Expert Education

Assembly Technology Expert



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EXPERT EDUCATION

Why make our customers experts?

We believe that our customers themselves should become experts in fastening technology. This ensures the relevant internal knowledge & skills and therefore product safety and quality are directly at the site of production.

Benefits

To educate you in assembly technology

To design your product with the right fasteners

To make your product economical and safe with the choice of fasteners

To fulfill the required quality standards

To smooth your production process

Tailor-made training sessions on engineering principles, applications, and technology create synergies in our customers' minds.

We offer you different formats of learning, customized to your needs:

Seminars

(Public / Customized)

In live seminars we teach all relevant fastening topics through a balanced mixture of theory and practical workshops. Customers benefit from a hands-on approach and interactive learning sequences. You can either join a public seminar or we can set up a tailor-made customized seminar for your company only.

Webinars

If the distance is too great to participate in seminars, we offer short learning sequences that you can easily take at your desk.

E-Learning

Use our internet-based platform to acquire fastening technology knowledge through self-study. You receive a wide range of fastening information by learning fastener anatomy and function, related standards, and much more. See page 15 for more information.

EXPERT EDUCATION

Fastening Topics Overview

In our seminars and webinars we teach all relevant fastening topics. How to tighten a screw correctly. How to prevent corrosion. How to save costs by using the right fasteners.

Please find an overview of the seminar topics we offer. They can be public or customized to your needs. Find a detailed description on the following pages.

Topics

Introduction to Fasteners

1. Basic
 2. Technical
-

Core Topics

3. Securely fastened joints

- Theory of a bolted joint
- Mechanical properties
- Assembly methods
- Friction
- Seating
- Vibration

4. Corrosion

- Theory about corrosion
- Types of corrosion
- How to avoid corrosion
- Electroplating
- Hydrogen embrittlement
- Dip spin coatings
- Stainless steel and other materials

5. Cost savings

- Thin sheet applications
- Thread forming fasteners
- Assembly into plastic
- Assembly into metal
- Multifunctional fasteners
- Pre-applied patches and lubrication
- Assortment optimization

Fastening Technology VDI/VDE 2637

6. Technical fastening competence
 7. Design of bolted joints
 8. Calculation of bolted joints according VDI 2230 guideline
 9. Innovative assembly
-



SEMINARS

Basic introduction to fasteners

Gain basic knowledge of all fastening elements and make their selection effective and efficient – DIN, ISO, 8.8, A2, what do they all mean? Which parameter really matters?

Content

- Definition and measurement of fastening elements
- Material quality classes (property classes)
- Functionality of surfaces and coatings of fastening elements
- Manufacturing of bolts and nuts
- Standards and testing procedures

Audience

- Commercially active employees in supply chain, purchasing, planning
- Personnel who would like to refresh or improve their fastening knowledge



SEMINARS

Technical introduction to fasteners

Get a general understanding of the functionality of bolted joints and the influence of assembly tooling. Focuses on mechanical properties of fasteners, corrosion and prevention, and the influence of multifunctional fasteners on costs.

Content

- Basics in mechanical properties of fasteners
- Functionality of bolted joints and reasons why they frequently fail
- General knowledge about corrosion – types, surface protection, and materials
- Thread-forming screws for metals and plastics
- Multifunctional fastening and combination of elements and functions

Audience

- Technicians in manufacturing or assembly processes and planning
- Personnel who would like to refresh or improve their fastening knowledge

SEMINARS

Securely Fastened Joints

The correct fastener has to be tightened correctly – Define and design the bolted joint right from the start to optimize quality and reduce total cost of ownership.

Content

- Mechanical properties of bolts – review of the functionality of bolts and basic rules when choosing fasteners.
- Analysis of impact of friction on clamp force in bolted joints and interdependency of surface treatment and tightening torque.
- How does the method and precision of the tightening tool affect the safety of bolted joints?
- How to insure bolt assemblies against loosening – review standard solutions and assess them in terms of resistance to vibrations.
- What are the consequences of relaxation, and why does it occur?
- Introduction to new fasteners, that can provide design benefits.
- Practical experiments and calculation examples will be conducted during the seminar.
- Fasteners Hands On – practical demonstration

Audience

- Engineers, technicians from R&D, construction/ design, assembly planning and quality assurance
- Employees in repair and maintenance department or assembly



SEMINARS

Corrosion

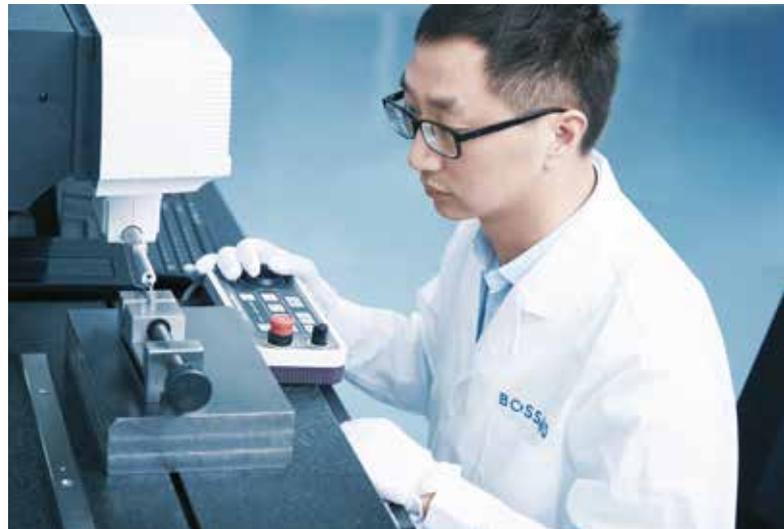
Rust can be costly – how to avoid or reduce corrosion in any joint right from the beginning.

Content

- What is corrosion?
- Why corrosion occurs and how to avoid it.
- Can stainless steel screws corrode?
- What are the criteria used for selecting the appropriate fastener?
- How to select materials and how they should be combined.
- What type of corrosion is most often seen in fasteners?
- What coating ensures effective protection against corrosion?
- What are the advantages of stainless steel in terms of cost savings and safety?
- What recommendations can be given to development?

Audience

- Engineers, technicians from R&D, construction/ design, assembly planning and quality assurance





SEMINARS

Cost savings

Cost savings up to 40% – choosing the right fastener can reduce total cost of ownership.

Content

- Introduction to design optimization
- Thread-forming screws for steel, aluminum, and plastics
- Assembly in thin sheet metal
- Assortment optimization
- Types of recesses
- Level of product quality
- Practical examples
- Fasteners Hands On – practical demonstration

Audience

- Engineers, technicians from R&D, construction/ design, assembly planning and quality assurance

SEMINARS

Fastening Qualification VDI/VDE 2637

These four seminars cover the systematic and needs-based qualifications of personnel in the field of fastening technology according VDI/VDE 2637.

Seminars description

Technical fastening competence

- Norms, standards and guidelines
- Mechanical properties of fasteners and components
- Basics of bolted joints and their characteristics
- Basics of tightening tools, measuring and testing equipment

Design of bolted joints

- Design of bolted joints
- Selection of fasteners and components
- Functionality of bolted joints
- Specification of bolted joint categories (VDI/VDE 2862)
- Determination of the tightening method

Calculation of bolted joints according VDI 2230 guideline

- Calculation of bolted joints (VDI 2230)
- Functionality of bolted joints
- Information on the right selection of fasteners
- Determination of the tightening method

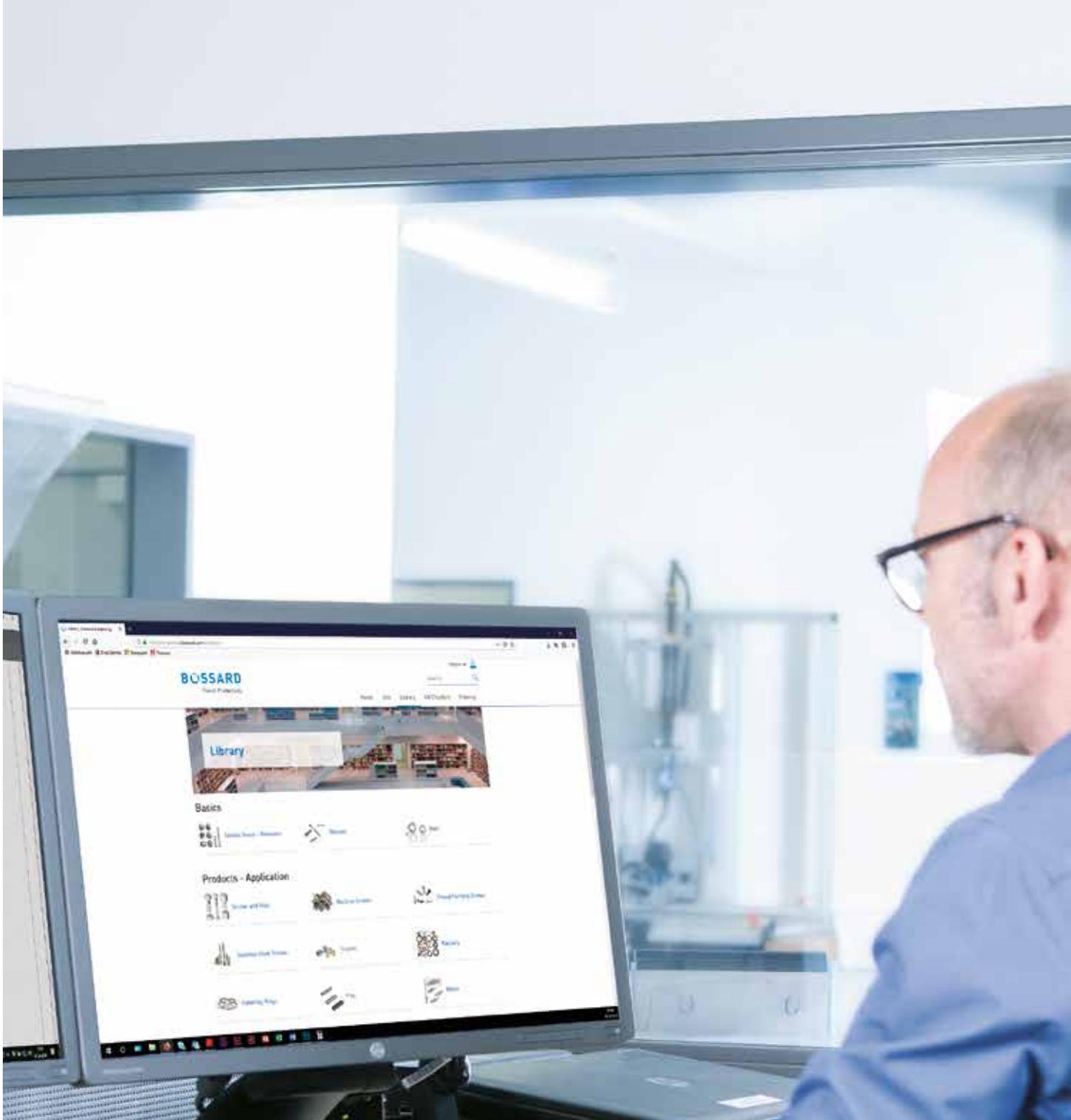
Innovative assembly

- Evaluation and standardization of tightening tooling
- Tightening tooling capability tests
- Interpretation and documentation of tightening results
- Basics of bolted joints and their characteristics

Audience

- All those directly or indirectly involved in the field of fastening technology.





“Bossard’s e-learning guarantees our customers receive high-value content to gain exceptional knowledge about fasteners and assembly procedures.”

EXPERT EDUCATION

E-Learning

Access to fastening technology knowledge with the freedom to learn at your own convenience and at a pace that is right for you. The well-illustrated lectures can be taken any number of times, from anywhere and at any time. Highly effective learning that saves time and money.

Customer Visit

E-Learning

Seminars

Content

- Introduction to mechanical fasteners
- Functional features of fasteners
- Threads for screws, bolts and nuts
- Drive systems
- Screws and nuts
- Locking screws and lock nuts
- Structural bolts
- Self-clinching nuts and bolts
- Thread-forming screws
- Thread-cutting screws
- Self-drilling screws
- Threaded inserts
- Washers
- Retaining rings for shafts and bores
- Pins
- Rivets
- Prevailing torque fasteners
- Stainless steel screws and nuts
- Fasteners made of special materials

and much more.

Audience

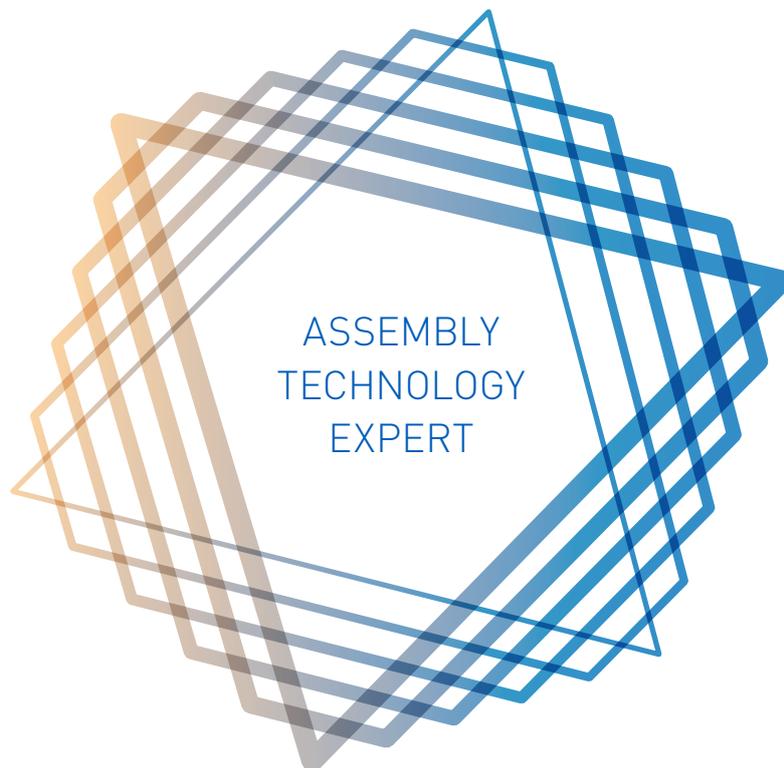
- Commercially active employees in supply chain, purchasing, planning
- Engineers, technicians out of R&D, construction/design, assembly planning and quality assurance
- Employees in repair and maintenance department or assembly



OUR SERVICE MODEL

Six Expert Services

With more than 185 years of experience in the fastening industry, we provide a wide range of engineering services. Expert Education is one of the six Assembly Technology Expert services. Each part contributes to improving your productivity step by step. Explore all of them at bossard.com.





Expert Walk

We take an in-depth look at your production facility. We examine all workstations and assembly lines. Our engineering experts study fasteners and tools you are using and determine how to proceed leaner and smarter.



Expert Assortment Analysis

To reduce your total cost of ownership, we streamline your bill of materials by identifying opportunities for fastener rationalization. We work with proven analytical processes, application audits and state-of-the-art methodologies and techniques.



Expert Education

We empower you to become an expert in the full range of assembly technologies. In our seminars and e-learning, you learn about the essentials and secrets of fastening, from novice level to mastery.



Expert Teardown

We disassemble your product and examine every inch of it. Focusing on the fasteners, their design, their functionality and their assembly procedure, we identify the best fastening solution and the cost-saving potential for you.



Expert Design

Having the right fastener at the right time at the right place is crucial for your success. We provide you with technical solutions and access to big data to find the most practical part for you.



Expert Test Services

Bossard's test laboratories in Europe, America and Asia have cutting-edge measuring and testing equipment at their disposal. They guarantee that your manufacturing reliably meets quality requirements and that your production procedures are flawless.



“Bossard Assembly Technology Expert helps our customers slash their time to market and cut costs by as much as 40% or more.”

Find out more at:
www.bossard.com

BUSINESS MODEL

Assembly Technology Expert as part of the whole



From years of cooperation with our customers, we know what makes a proven and sustainable impact. We have identified what it takes to strengthen the competitiveness of our customers. We therefore support our customers in three strategic core areas.

First, we find optimal [product solutions](#) by evaluating and selecting the best fastening part for the intended function in our customers' products.

Second, from the moment our customers begin to develop a new product, our [Assembly Technology Expert](#) services deliver the smartest solutions for all possible fastening challenges.

And third, we optimize our clients' production in a smart and lean way using [Smart Factory Logistics](#), our methodology, intelligent logistics systems and tailor-made solutions.

Understood as a promise to our customers, "Proven Productivity" contains two elements: First, it demonstrably works. And second, it sustainably and measurably improves the productivity and competitiveness of our customers.

This philosophy motivates us each and every day to always remain one step ahead.

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