

**BOSSARD**

Proven Productivity



---

## Electrical Engineering

Smart solutions for the electrical engineering sector



«Fastening solutions for electrical applications from A to Z. Bossard is your one-stop shop.»

## SMART SOLUTIONS FOR THE ELECTRICAL ENGINEERING SECTOR

# An industry powers ahead

We are the experts for all fastening components in the field of electrical engineering.

Be it fastening elements for electrical cabinets or white goods, conductive fasteners for energy distribution or micro fasteners for circuit boards: You will get it from Bossard. In this brochure we want to show you an exemplary excerpt of the wide range of products we are providing to your industry. But our service continues where the palette of standard products ends: Our engineers will be pleased to

advise you in regards to alternative fastening solutions, innovative developments or specific material requisitions. If the best solution for your application does not yet exist, we will create it for you! Worldwide thousands of satisfied customers trust in the quality of Bossard products and services. They know why.



### One-stop shop

- Fasteners for electrical purposes
- Fasteners for mechanical purposes



### Engineered parts

- In-house engineering know-how
- International network of specialised partner companies



### Professional consulting

- Comprehensive engineering services
- Customer trainings for fastening solutions



### Own testing laboratories

- ISO/IEC 17025-accredited test laboratories in 10 countries around the world.
- Comprehensive mechanical, optical, geometric and chemical test methods



### Optimal delivery conditions

- We are on the spot with more than 70 subsidiaries worldwide
- Short response and delivery times
- E-Shop for all catalog products



### Smart Factory Logistics

- B- and C-part management
- IoT ready
- Smart, lean and reliable





## QUALITY, EASY AND RELIABLE

# Electrical Cabinet

Challenges of fasteners in electrical engineering include saving valuable space and reducing costly manual steps in production.

The following product selection of Bossard combines these requirements and are characterized by:

- One-side installation leads to space-saving design.
- Tolerating different material thickness leads to fewer loose parts and less storage costs.
- Installation could be done on coated surfaces so less manual steps are necessary.

## ELECTRICAL CABINET

### RIVETS

Fast and safe mounting for housings & internal components

- Watertight fastener
- High pull-through capability with extreme shear performance
- Applicable in fluctuating material thicknesses or irregular hole sizes
- Installed from a single side



### BCT® BLIND RIVET NUT

One thread element usable for various material thicknesses

- Low blind side protrusion
- Bulge-forming without stress induction
- Easy assembling to poorly prepared or oversized holes
- Depending on thread size cover range of up to 9 mm



### CLINCHING FASTENER

Fast and clean fastening solution for housing with double-side access

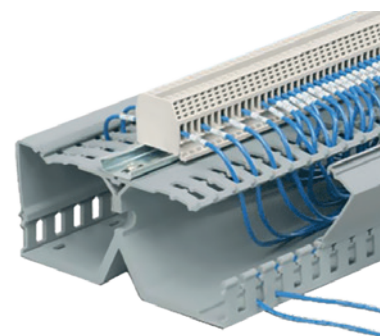
- Extreme load capacity even in metal sheets as thin as 0.5 mm
- Usable on coated surfaces
- No protrusion on backside
- No recutting of threads



### WIRING DUCTS

30% space saving combined with less material costs and more flexibility

- Space optimized arrangement of sensitive cables and use of free space in enclosure corner
- Speeds installation and maintenance with lighter and easily cut materials
- Perfect compatibility to DIN components



# ELECTRICAL CABINET

## VENTING ELEMENTS

Elimination of condensation for electrical enclosures

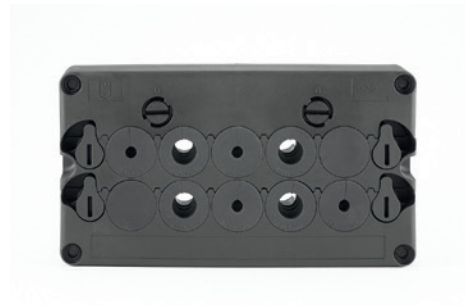
- Continuous ventilation and adaption of the inner pressure
- Hydrophobic and oleophobic PES membrane



## CABLE ENTRY PLATES / SYSTEMS

Process optimized cable implementation

- Tool-free entry and connecting technology
- Space-saving
- Fast mounting
- Modular construction available



## HINGES

Easy solution for quick and low-cost installation

- No protruding hardware
- Removable hinge pins allow quick door removal for maintenance and service
- Full 180 degrees rotation of the door



## LATCHES

Innovative access-control systems for enclosures

- Multiple cam options satisfy frame configurations with numerous grip dimensions
- Access control with multiple tool-access and keylocking/keycode capabilities
- Drop-in replacement for existing latches with industry-standard panel preparation







« Cable glands and accessories can be made of polyamide, brass and stainless steel. »





**QUALITY, EASY AND RELIABLE**

## Energy Distribution

---

From cabinet framework to interior cable and bus bar fastening.

Essential features for fasteners in these application fields are anti-vibrating and high temperature resistance guaranteeing constant clamp load and therefore safe energy distribution in low and high voltage applications.



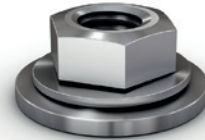
## ENERGY DISTRIBUTION

---

### LOCKING NUTS

Vibration resistant and permanent strength of screw joints

- Washer is already pre-assembled
- Reduced assembly time
- Retaining clamp load even under high temperature changes



### CLINCHING BOLTS AND NUTS

Fast and clean fastening solution for applications with double-sided access

- Extreme load capacity even in metal sheets as thin as 0.5 mm
- No special preparation of the mounting hole necessary
- No recutting of threads
- High positional accuracy



### COMPRESSION CABLE LUGS

Perfect part for less space applications

- Small but more thicker flange as normal cable lugs
- Transmission of permissible maximum current is guaranteed



### NON-TENSION COMPRESSION JOINTS

Connection for copper and aluminum conductors

- Precise ending for easy cable insertion
- With crimp markings for correct crimping



## ENERGY DISTRIBUTION

---

### GROUNDING CAGE NUTS

Ensure electronic conductivity in casings

- High thread stripping resistance in thin sheets
- Compensate positioning errors
- Integrated claws that penetrate surfaces for grounding



### CABLE GLANDS

Solid and close cable protection with one-sided accessibility for limited space

- Quick and easy installation in applications without special tools
- Adjustable in wall thickness from 1-4 mm
- No inner thread required



### WRAP SLEEVING

Slitted and self-closing sleeving facilitate draw-in of a pre-assembled cable

- Fast mounting
- ROHS and halogen-free material
- Suitable for subsequent installation

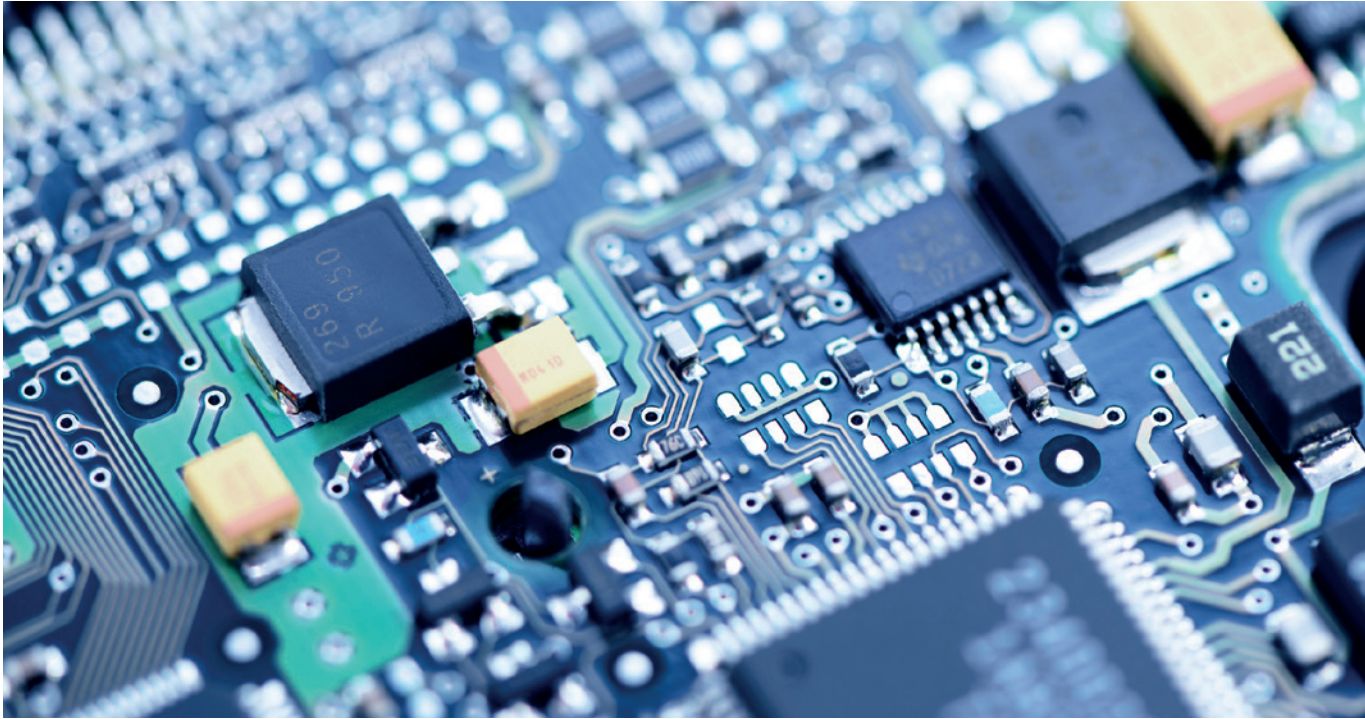


### CABLE TIE

Remove excess tail by twisting without tool

- Operating temperature between -40°C and +85°C
- Halogen and silicon free





## CLINCHING FASTENERS AND RIVETS

# Circuit Board

---

One of the smallest and most delicate applications in electrical engineering needs small and space saving fasteners with controlled mounting and no stress induction on the panel.

The following selection of special panel fasteners is characterized by

- Optional automated feeding process
- Close to edge mounting
- Controlled deformation and Surface Mount Technology



## CIRCUIT BOARD

---

### MICRO PRESS STUD

Fast alternative to screws. Building up a connection of two parts without tapping

- Strong connection due to diagonal knurling
- Low protrusion
- Conical tip simplifies mounting
- Vibration resistant



---

### SPEED RIVETS

Used as spacer or to fix plugs and soldering terminals on circuit boards

- High product safety
- Quick reloading
- No mandrel rest to fall off
- Vibration resistant



---

### THREADED INSERTS

Strong thread on composite materials with less shear strength

- Suitable for thin section materials
- Usable for thermoset and thermoplastic materials
- Several installation methods for moulding in and after moulding

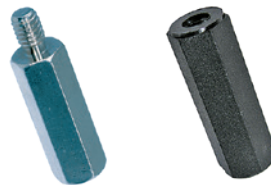


---

### STAND-OFFS

Various types of appropriate stand-offs for an easy panel connection

- Vibration resistant
- Available with internal and external thread or only internal thread



## CIRCUIT BOARD

---

### MICRO CLINCHING FASTENER

Irreversible mounting on ultra-thin membrane

- Available from thread size M1
- Automatic installation with Surface Mount Technology reduces assembly costs
- No stress on circuit board while installing
- High process reliability



---

### RIGHT-ANGLE CLINCHING FASTENER

Creates strong right angle attachment points close to edge

- Applicable from sheet thickness of 1 mm with improved shielding characteristics
- Applicable on slight edge distances
- Tighter design control
- Material savings



---

### CLICK-IN BOLTS

Quick removable connection of PC boards and subassemblies

- Less handling during assembly
- Less risk of damaging delicate circuitry
- Snap mechanism
- An option to pre-tapped holes

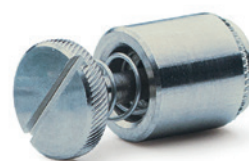


---

### CAPTIVE PANEL SCREWS

Cost saving screw due to soldering assembly

- Spring action of plastic fingers holds screw in retracted position
- No additional part necessary
- Anti cross-threading feature improves assembly line productivity
- An option to pre-tapped holes



## WHEN YOU WANT TO BE SURE

# The accredited testing laboratory for fastening technology

---

The correct specification plays an important role in many areas of fastening technology. Bossard meets this challenge with a state of the art testing laboratory.

### Tested quality

Whether developing products, projects or processes, you need a proven and independent inspection to ensure that both the legal requirements and high standards expected of you are complied with at every stage.

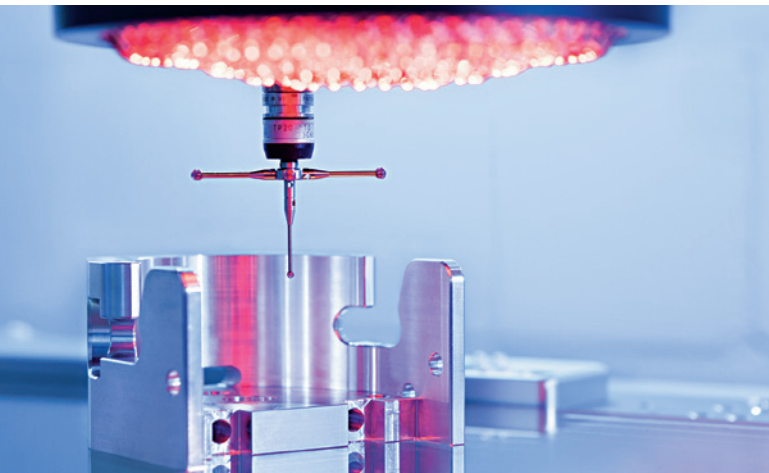
Our comprehensive range of leading test services for fastening technology, which are carried out by qualified and experienced staff, help you in risk reduction and quality assurance as well as the fulfillment of the relevant and statutory requirements for your components and products.

### Competent partner

To meet all required quality standards Bossard has ten accredited test laboratories in Europe, America and Asia, ensuring reliable quality assurance and flawless production quality with their cutting-edge measuring and testing equipment. Moreover in product testing we deeply work together with our business partners as one team to offer the best quality to you.

### Measurement results of the highest standard

In our quality- and test laboratories we use industry standards and individual customer requirements to go over your products with a fine toothcomb. In combination with ISO/IEC 17025 accreditation we have reliable competence in testing, which are both available to the customer for tests accompanying development, special tests and complete tests. Both nationally and internationally, laboratory accreditation is seen as a recognized and reliable indicator of technical competence. Clear adherence to normative specifications ensures that the measurement results delivered enjoy the highest level of confidence. This is also guaranteed by our competent specialist staff.

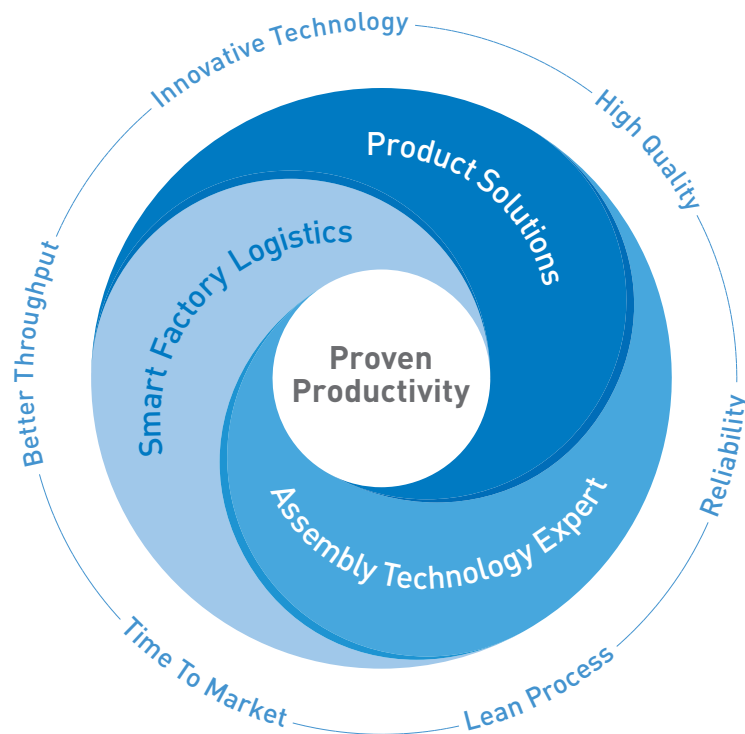




## PROVEN PRODUCTIVITY – A PROMISE TO OUR CUSTOMERS

# The strategy for success

---



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

Firstly, when finding optimal **Product Solutions**, that is in the evaluation and use of the best fastening part for the particular function intended in our customers' products.

Second, our **Assembly Technology Expert** services deliver the smartest solutions for all possible fastening challenges. Our services cover from the moment our customers developing a new product, to

assembly process optimization as well as fastening technology education for our customers' employees.

And thirdly, optimising our clients' productions in a smart and lean way with **Smart Factory Logistics**, our methodology, with intelligent logistics systems and tailor-made solutions.

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

And this for us is a philosophy which motivates us every day to always be one step ahead.

---

[www.bossard.com](http://www.bossard.com)