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## Engineering Services

Expert knowledge for every fastening challenge

## EXPERT IN AEROSPACE FASTENING TECHNOLOGIES

# Over 55 years of experience

With over 55 years of experience in aerospace fastening technologies, we provides invaluable expertise through our deep industry knowledge, innovative and tailored solutions, comprehensive services, and robust quality assurance.

Our consultancy optimizes design and development processes, ensures regulatory compliance, and mitigates risks, ultimately enhancing reliability and efficiency.

With a global network and long-term partnership approach, Bossard Aerospace offers cost-effective, cutting-edge solutions that address the unique challenges of the aerospace industry.



Our expert knowledge for every fastening challenge

With over 55 years of expertise in aerospace fastening technologies, we help our customers solving every challenge they face from design phase to optimization of the existing components.

Our expert is specialized in consulting for

- Support at preliminary design review to fulfill the master requirements and customer expectations
- Specification review and alternative suggestion
- Special toolings concept
- Drawing parts modification with MRB Board
- Optimization in weight reduction, physical conditions, surface treatments, obsolete management, installation process and production

## UNSURE WHICH FASTENING TECHNOLOGY TO USE IN YOUR PRODUCT?

# Starting right from the design phase

We provide expert guidance to help you identify the optimal fastening solution from the very beginning of your project.

No matter if you are looking for solutions from the beginning or looking for an alternative to the existing methods, our team collaborates closely with you up to the preliminary design review (PDR) to ensure the chosen fastening method meets all master requirements until the design process is frozen.

Here's how we ensure you get the best possible solution for your product:



### Detailed Consultation

We begin with an in-depth consultation to understand your product's specific needs, performance expectations, and any constraints.



### Master Requirements Analysis

We analyze the master requirements, such as load-bearing capacity, material compatibility, environmental conditions, and assembly processes.



### Technical Evaluation

Our engineers perform a technical evaluation of various fastening methods by testing them at [Bossard's accredited test laboratory](#), considering factors like strength, durability, ease of installation, and cost-effectiveness.



[Learn more about Bossard Accredited Test Laboratory](#)



### Performance Comparison

We compare the performance of different fastening solutions against the master requirements to identify the most suitable option.



### Cost-Benefit Analysis

A thorough cost-benefit analysis is performed to ensure the chosen solution provides the best value for your investment.



### Tailored Recommendations

Based on the comparative assessment, we provide tailored recommendations, highlighting the advantages and potential trade-offs of each option.



## WHEN FACED WITH UNIQUE ASSEMBLY CHALLENGES

# Special toolings for higher efficiency

## Tailored solutions for specific requirements

When faced with unique assembly challenges, Bossard Aerospace excels in developing specialized tooling that is meticulously manufactured and tailored to meet customer requirements and expectations through a thorough and collaborative process.

We conduct a comprehensive evaluation of the specific requirements, collaboratively design the tooling solution with the customer, and leverage our extensive supplier network to identify the best tooling suppliers and manufacturers.

We handle all communications with the tooling supplier to ensure that the customized tools precisely fulfill the customer's requirements, ensuring a seamless and efficient implementation.



## FASTENING DESIGN EXPERTISE

# Drawing parts modification

## Ensuring the best possible performance

Drawing parts is the solution when there are no other suitable solution for your specific requirements on the market.

We support our customers in developing drawing parts from the design phase. With our expertise in fastening, we offer inputs for modification of the drawing parts based on the MRB board.

### **Our approach:**

#### **In-Depth Review:**

We start with a thorough review of your existing design drawings to understand the current fastening challenges and limitations.

#### **Requirement Analysis:**

We discuss your specific requirements, constraints, and goals to tailor our consultancy services to your needs.

#### **Expert Recommendations:**

Our experienced engineers provide expert recommendations on modifications that can improve the fastening performance, reliability, and manufacturability of your product.

#### **Material and Geometry Adjustments:**

We suggest adjustments to materials, part geometries, and tolerances to enhance the compatibility and efficiency of the fastening solutions.

#### **Close Collaboration:**

We work closely with your design team for their incorporation of our recommendations into the existing drawings, ensuring alignment with your overall design objectives.

#### **Iterative Feedback:**

Through an iterative feedback process, we refine the modifications to meet all functional and aesthetic requirements.



## ENHANCING YOUR PRODUCT VIA SPECIALIZED EXPERTISE

# Comprehensive Optimization

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### 1. Weight Reduction:

**Material Analysis:** We analyze different materials and suggest alternatives that offer the same strength and durability with reduced weight.

**Structural Optimization:** Our engineers recommend structural modifications to minimize weight without compromising integrity or functionality.

### 2. Physical Conditions:

**Environmental Suitability:** We evaluate and optimize your product to withstand various environmental conditions such as temperature, humidity, and exposure to chemicals.

**Durability Enhancement:** Our recommendations focus on enhancing the durability and longevity of your product under different physical stresses.

### 3. Surface Treatments:

**Coating Selection:** We advise on the best coating materials and processes to improve corrosion resistance, wear resistance, and aesthetic appeal.

**Surface Finish Optimization:** Our team suggests optimal surface treatments to enhance product performance and lifespan.

### 4. Obsolescence Management:

**Component Review:** We review your product components to identify any that are or will become obsolete.

**Replacement Strategies:** We provide strategies for replacing obsolete components with up-to-date alternatives, ensuring continuous production and support.

### 5. Installation Process:

**Process Streamlining:** Our experts analyze your installation process and suggest improvements to reduce time, labor, and errors.

**Tooling and Training:** We recommend specialized tooling and provide training to your installation team for more efficient and reliable assembly.

### 6. Production Optimization:

**Manufacturing Efficiency:** We examine your production processes to identify bottlenecks and inefficiencies, proposing solutions to streamline operations.

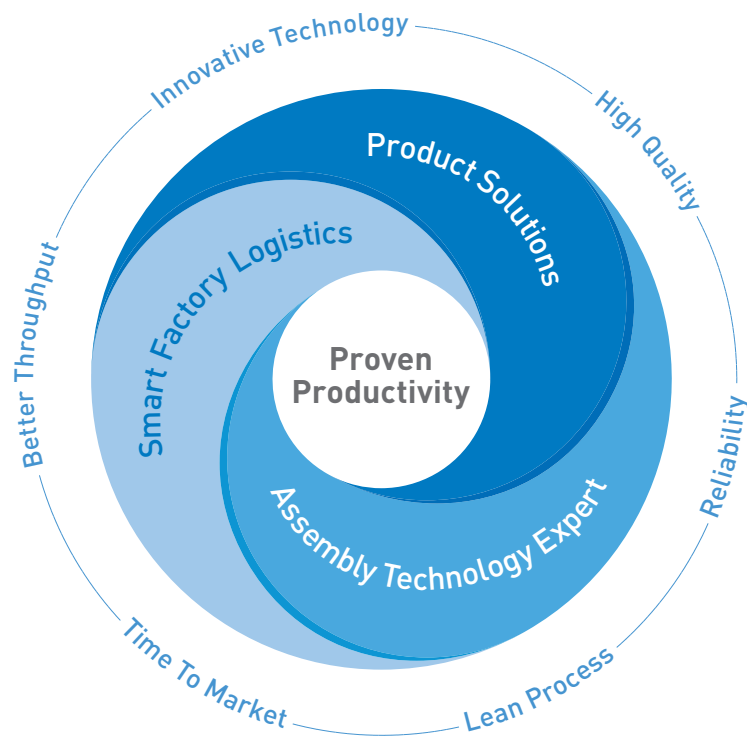
**Quality Control:** Our consultancy includes enhancing your quality control processes to ensure consistent product quality and reduce defects.



## PROVEN PRODUCTIVITY – A PROMISE TO OUR CUSTOMERS

# The strategy for success

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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.

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