

Case Study: METFAB Supports MBRAUN with Safety-Significant Enclosures for Critical Industries

Project Overview

METFAB partnered with MBRAUN to engineer and manufacture specialized enclosure systems for safety-significant applications across the nuclear, defense, research, and advanced manufacturing sectors. The collaboration leveraged METFAB's expertise in precision fabrication and quality-controlled manufacturing to deliver robust enclosure solutions designed to meet stringent performance, reliability, and regulatory requirements.

Through close collaboration between engineering, quality, and manufacturing teams, METFAB successfully supported MBRAUN in bringing complex enclosure systems from concept to production while maintaining the highest standards of quality and workmanship.

Customer Challenge

MBRAUN required a fabrication partner capable of producing complex enclosure systems used in applications where reliability, containment, and long-term performance are critical.

The enclosure systems needed to:

- Meet demanding structural and dimensional requirements.
- Support integration of specialized process equipment and glovebox technologies.
- Maintain high levels of manufacturing quality and repeatability.
- Accommodate complex assemblies and utility interfaces.
- Support projects requiring rigorous documentation and traceability.
- Meet the expectations of customers operating in safety-significant environments.

Given the complexity of these applications, MBRAUN required a manufacturing partner capable of delivering both technical expertise and a disciplined quality approach.

Engineering Approach

METFAB worked closely with MBRAUN's engineering and project teams throughout the design and manufacturing process to ensure every enclosure met the functional and quality requirements of the end application.

Collaborative Design Review

Early engagement between the engineering teams enabled design optimization for manufacturability while preserving all critical performance requirements. This collaboration

reduced production risk, improved assembly efficiency, and streamlined fabrication activities.

Precision Fabrication Strategy

METFAB developed manufacturing plans tailored to each enclosure design, ensuring dimensional accuracy, repeatability, and efficient production.

Key manufacturing processes included:

- CNC laser cutting
- Precision forming
- Machining
- Structural welding
- Surface finishing
- Mechanical assembly
- Quality inspection and verification

Quality and Traceability

For projects supporting safety-significant industries, METFAB implemented enhanced quality controls, inspection checkpoints, and documentation processes to ensure compliance with customer and project requirements.

Manufacturing Solution

METFAB manufactured a range of enclosure systems designed to support MBRAUN's advanced process technologies and containment solutions.

Features of the fabricated systems included:

- Heavy-duty welded steel construction
- Precision-machined interfaces and mounting points
- Complex utility and service penetrations
- Integrated structural support systems
- High-quality industrial finishes
- Modular designs to support installation and maintenance

Each enclosure was manufactured to exacting tolerances and subjected to comprehensive inspections before shipment.

Results

The partnership between METFAB and MBRAUN resulted in the successful delivery of enclosure systems used in critical applications where performance and reliability are essential.

Key Outcomes

- ✓ Successful execution of complex enclosure fabrication projects
 - ✓ Consistent adherence to demanding quality requirements
 - ✓ Reliable support for safety-significant applications
 - ✓ Improved manufacturability and assembly efficiency
 - ✓ On-time delivery of critical project components
 - ✓ Strong collaboration between engineering and manufacturing teams
 - ✓ Enhanced support for customers in nuclear, defense, research, and advanced technology markets
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Impact on Safety-Significant Industries

The enclosure systems fabricated by METFAB have supported MBRAUN projects serving organizations that operate in highly regulated and mission-critical environments. These applications demand robust construction, precise manufacturing, and comprehensive quality controls to ensure long-term operational reliability.

By providing high-quality fabrication and engineering support, METFAB has helped MBRAUN deliver solutions that meet the expectations of customers working in some of the world's most demanding industries.

Conclusion

The successful partnership between METFAB and MBRAUN demonstrates the value of combining engineering expertise, advanced manufacturing capabilities, and a commitment to quality. Through collaborative project execution and precision fabrication, METFAB has become a trusted manufacturing partner supporting MBRAUN's efforts to deliver enclosure solutions for safety-significant and mission-critical applications.

About METFAB

METFAB provides precision fabrication, machining, welding, assembly, and engineering services for customers operating in highly regulated and technically demanding industries.

About MBRAUN

MBRAUN is a global provider of glovebox systems, inert atmosphere technologies, and containment solutions supporting research, nuclear, defense, pharmaceutical, and advanced manufacturing applications.