



CASE STUDY · ALUMINUM CASTING

Optimizing Aluminum Casting Operations for Automotive Suppliers

ECKLEBE Automation supports leading aluminum casting manufacturers and automotive suppliers worldwide with advanced automation, controls, and safety solutions that optimize casting processes and ensure consistent product quality.

The Challenge

Aluminum casting facilities face constant pressure to increase throughput and reduce scrap rates, and that pressure only intensifies as production targets rise. The challenge is achieving it inside a multi-step casting process with tight cycle times and stringent quality requirements, all without interrupting production that's already running. Any misstep in sequencing or control across a casting line can show up as scrap, downtime, or both, which makes precision and reliability inseparable from profitability in this environment.

The Solution

ECKLEBE delivered tailored automation and safety systems for the facility's casting machines and production lines, built around a long-term lifecycle partnership rather than a one-time installation. The work included:

- Control systems for individual casting machines and full production lines
- Functional safety systems to ensure safe and compliant operations
- Automation of casting turntables, tilt casting, and thermal treatment systems.

Because casting processes vary significantly from one facility to the next, the systems were engineered around this operation's specific requirements rather than a standardized template.

The Results

The project delivered substantial results:

10–20%

Increase in production throughput through optimized cycle times and automation sequencing

15–30%

Reduction in scrap rates driven by more precise process control.

20–40%

Reduction in unplanned downtime thanks to reliable control systems and predictive diagnostics

These improvements provided the facility with a more stable operation, supporting future production goals.