

## CASE STUDIES

# Laser Beam Welding

## Assembly

### The Application

The manufacturer was engaged in laser-beam welding using advanced welding heads equipped with precision micro-optics and laser diodes mounted to robotic arms. These systems demand extreme accuracy and stability, as even minor disruptions can impact weld quality and overall process performance.

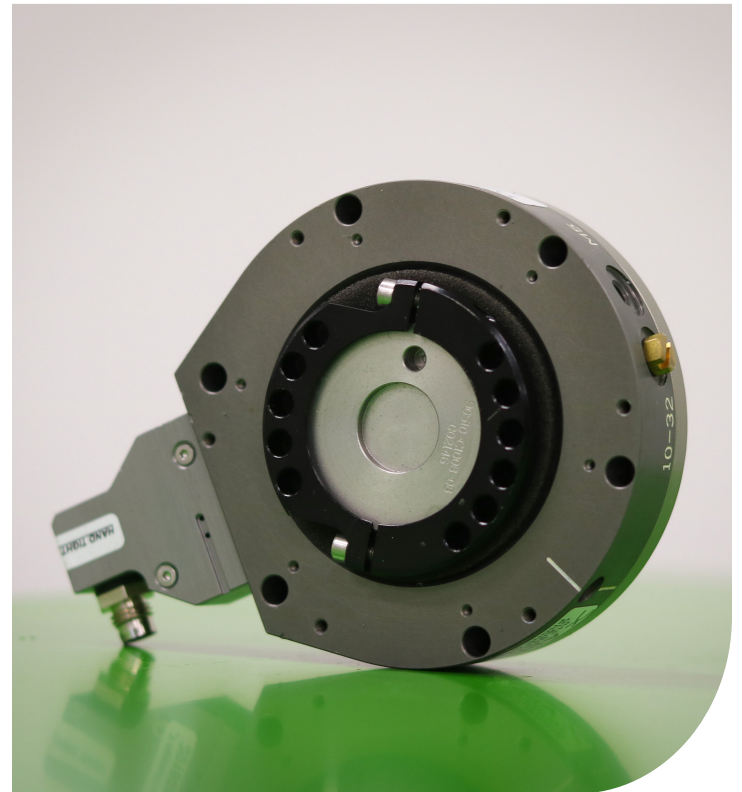
### The Challenge

Due to the high value and sensitivity of the tooling, a reliable collision protection solution is critical. The collision sensor must not only protect expensive laser equipment and the robotic arm, but also support the significant weight of the tooling. Maintaining rigidity and consistent performance is essential to ensure both safety and process integrity in this high-precision environment.

### The Solution

EFFECTO addressed this challenge with the **QuickSTOP®** collision sensor, engineered to deliver both protection and stability. Its pneumatic design uses regulated air pressure to maintain rigidity during operation, ensuring consistent performance under heavy payloads.

In the event of a collision, the air chamber seal instantly opens and sends a shutdown signal to the robot controller, protecting both the tooling and the system. This combination of strength, responsiveness, and reliability makes **QuickSTOP®** an ideal solution for demanding, high-precision laser welding applications. ●



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