



Automatic Cut to Length Line feeds – C.N.C. Roll



▶ SEE IT IN ACTION 

Engineering Challenge

CHALLENGE ▼

Design an automated tube manufacturing line capable of producing 3”–24” diameter tubes with one operator overseeing the entire process. The system needed to integrate uncoiling, straightening, cutting, and precision roll forming into a continuous workflow, while producing consistently round, weld-ready tubes with accurate edge presentation for a separate automatic seam welding operation. Reducing labor dependency, simplifying operation, and enabling repeatable, program-driven results were key requirements.

SOLUTION ▼

Weldlogic Engineering designed and built a fully integrated Automatic Tube Manufacturing Line to accommodate tubes ranging from 3” to 24” in diameter. An uncoiler/decoiler feeds material through a straightener, where it is precisely cut to length and belt-fed into a Weldlogic roll forming system.

The automatic CNC roll former shapes the tube according to stored programs, ensuring consistent geometry and edge alignment, then ejects the finished tube for transfer to a downstream automatic laser seam welder. The result is a streamlined, one-operator tube manufacturing solution that delivers repeatable, weld-ready tubes with high efficiency and precision.

WELDLOGIC USA

2651 Lavery Court
Newbury Park, CA 91320
Tel. 805.498.4004 | Fax. 805.498.1761

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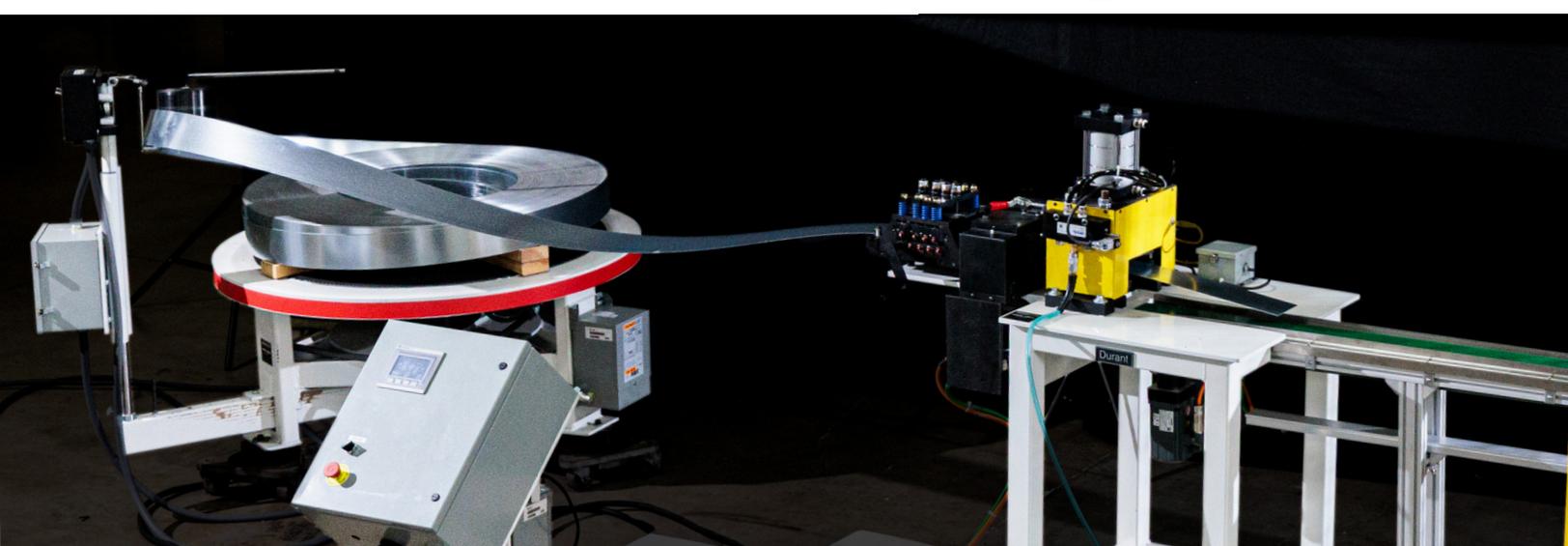
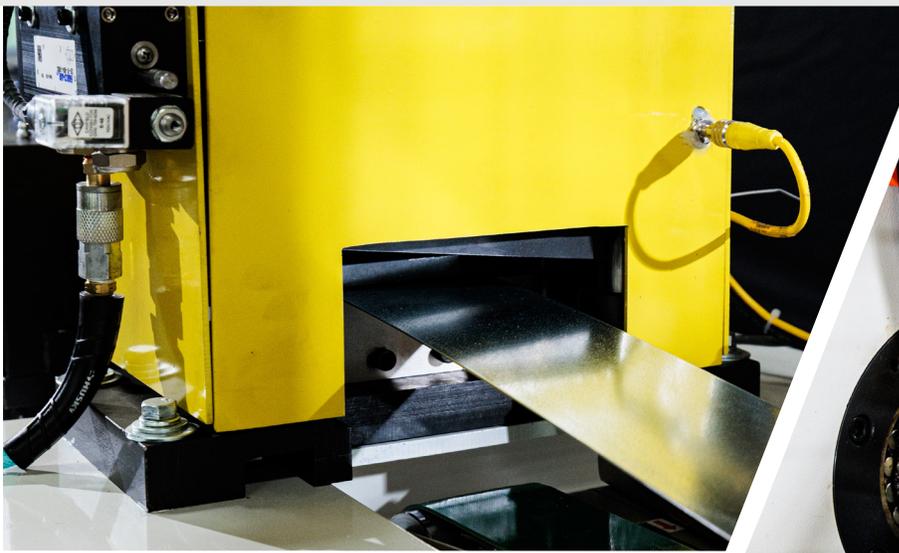
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Blackstone Road, Huntingdon
Cambridgeshire, PE29 6EF, UK
Tel. 01480 437478 | Fax. 01480 437479



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A.S.W. AUTOMATIC LASER SEAM WELDER

Plasma | TIG | Laser | Mig | Sub-Arc

▶ SEE IT IN ACTION



CHALLENGE ▼

Design an automatic seam welding system capable of handling an extremely wide range of tube diameters from 3" to 24" while maintaining the precision required for high-speed laser seam welding. The system needed to consistently present the tube seam in a highly accurate and repeatable position, regardless of size or material.

Additional challenges included developing quick-change tooling to minimize changeover time between diameters, integrating an automatic seam squaring mechanism to ensure tube consistency, and designing a mandrel with specialized clamping to properly manage and stabilize materials during welding. All motions, sensors, and process logic also had to be managed by a single controller to ensure reliable productivity and simplified operation.

Engineering Challenge

SOLUTION ▼

Weldlogic Engineering has 45 years' experience designing Automatic Seam Welding Systems, and applied that expertise to develop a highly flexible, precision-driven solution capable of welding tubes ranging from 3" to 24" in diameter. The system was engineered to accurately locate and present the tube seam for high-speed laser seam welding, ensuring consistent alignment and repeatability across all sizes.

The design incorporates quick-change tooling to significantly reduce changeover time between diameters, along with an automatic seam squaring mechanism that ensures uniform tube geometry prior to welding. A custom-designed mandrel with specialized material clamping stabilizes the tube throughout the process, while an advanced controller manages all axes of motion, sensors, and safety logic to maximize productivity and ease of operation. The result is a robust, scalable seam welding system built for precision, speed, and long-term manufacturing efficiency.

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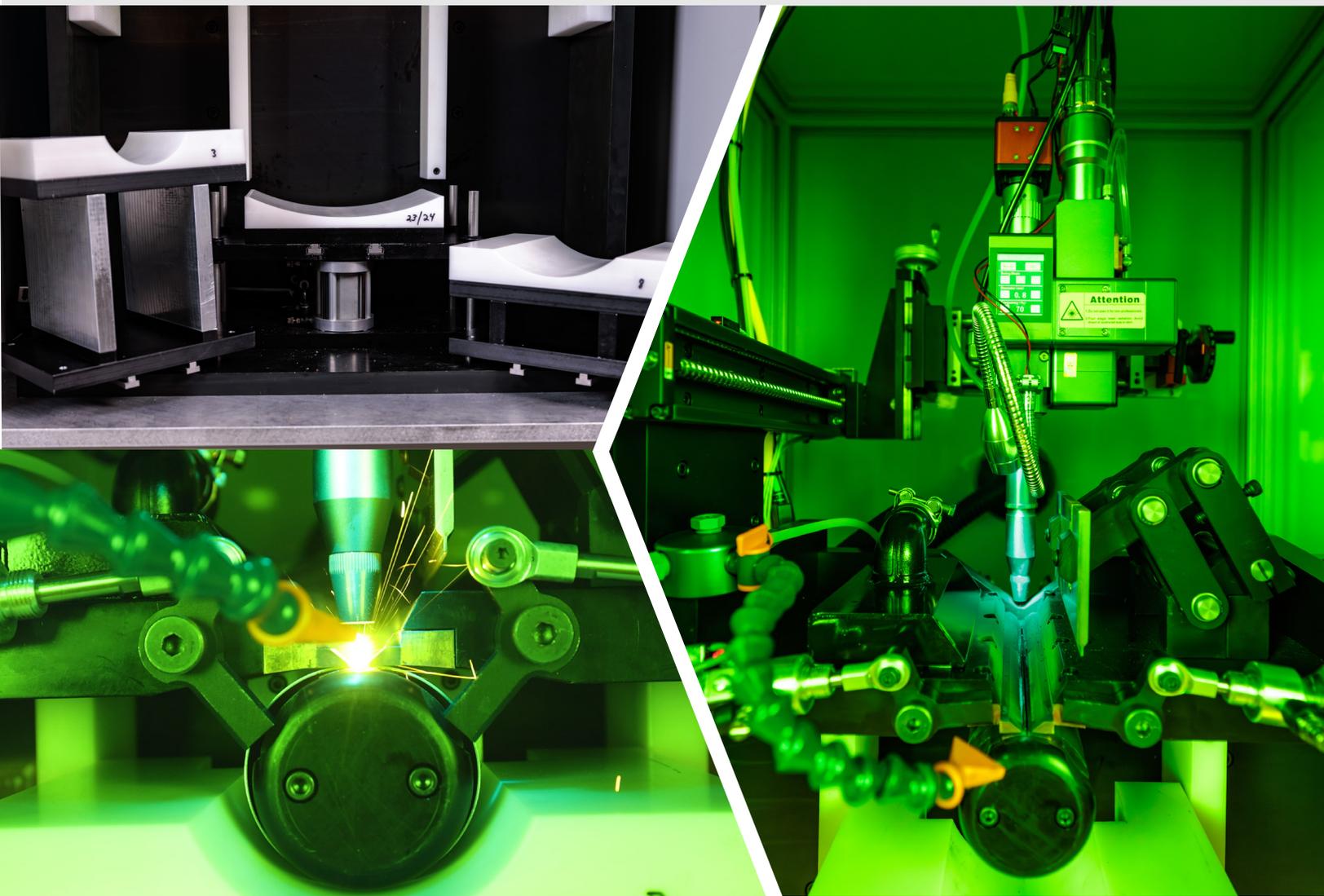
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