Aluminum tub welding

Flexible production, higher quality and throughput

Welding solutions

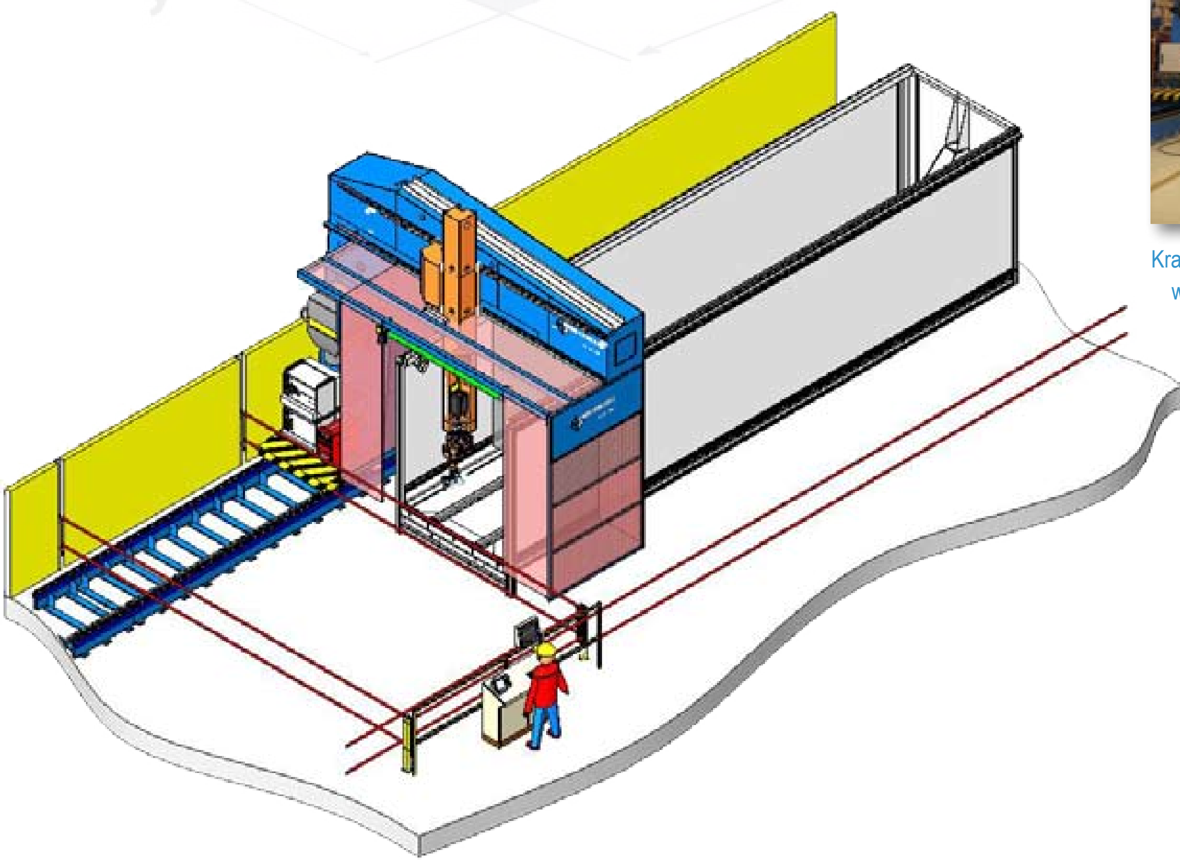
Kranendonk has supplied robotized, CNC- and PLC-controlled, one-piece, production systems for the various industries since 1989. Today's tubs and trailers are made of aluminum structures. The production of these structures are complicated due to the narrow 'boxes' that have to be welded. Kranendonk has developed a special robotic welding system for this task.

The system

In order to access the tubs and trailers from the inside or outside, a robot is suspended from a carriage that offers three additional degrees of freedom (in X-, Y- and Z-direction). The robot itself is small, but still a full six-axis industrial welding robot. The Aluminum Tub Welding Cell is designed to weld aluminum tubs in a flow direction.
Customized solutions can be supplied for other welding applications.

Accurate aluminum welding due to latest engineering technology

Kranendonk combines high quality with production flexibility by using special developed software



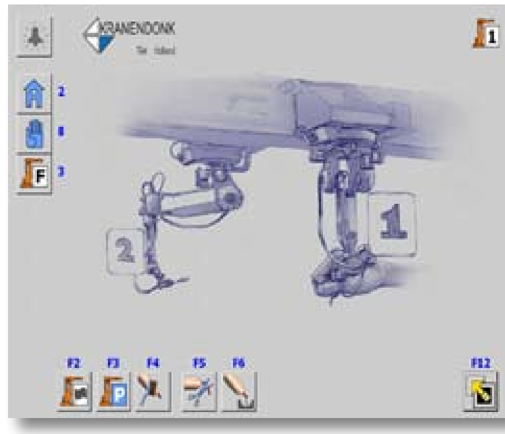
Aluminum Tub Welding Cell

ARAC offline programming and online control software

The Aluminum tub welding cell is supplied with Kranendonk ARAC software. The advanced ARAC software features macro based programming like NC-codes in such way that the contour is programmed in stead of the robot. ARAC is able to:

- Display the geometrical information by use of simulation in Excel.
- Interactively add the necessary processing information (CAM data) such as: which contours to process, processing speeds, process parameters and tool angles (e.g. torch angle)
- Convert the data into such a form, that the ARAC compiler can generate a robot program from these data.

Integration with various CAD-systems or product configurators is optionally.



Simple graphical online cell and process control

Process

The Aluminum tub welding cell is a dedicated welding system which is automatically welding inside and outside of a aluminum tub with normal process equipment. The special aluminum seam tracking sensor, in combination with the robot controller, gives precision, stability and more accuracy to the robotic welding application.

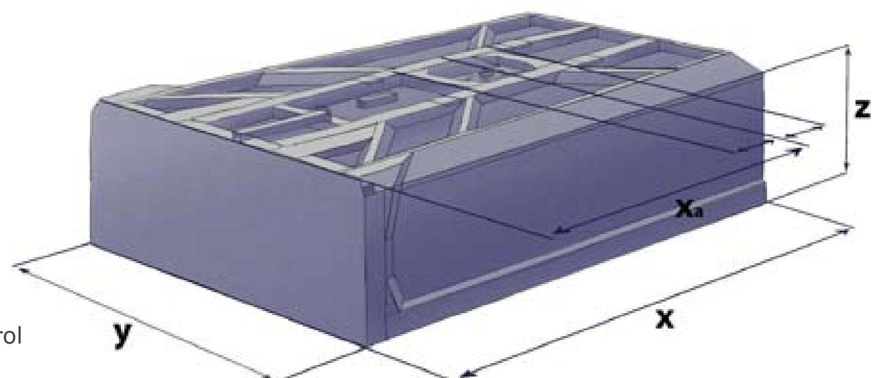
Automatically tracks weld path for accurate aluminum welding

Accuracy

In order to accommodate for slanted or bent profiles and/or plates, Tactile seam tracking system through the physical touch by sensor tip is used during welding. Tactile seam tracking system is especially developed by Kranendonk for aluminum welding application. This sensor is mounted with the welding torch and leads the torch to the seam (weld path). The position of torch is continuously corrected by the feedback of the variation of sensor signal to robot.

Main features

- One piece production
- Aluminum seam finding and tracking
- Calibrated absolute accuracy
- Possibilities for integration with CAD-system
- Easy operation due to simple graphical cell control
- No fixture necessary
- Minimal floor space requirement



Customer order driven production can be achieved by using our unique one-piece production software

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