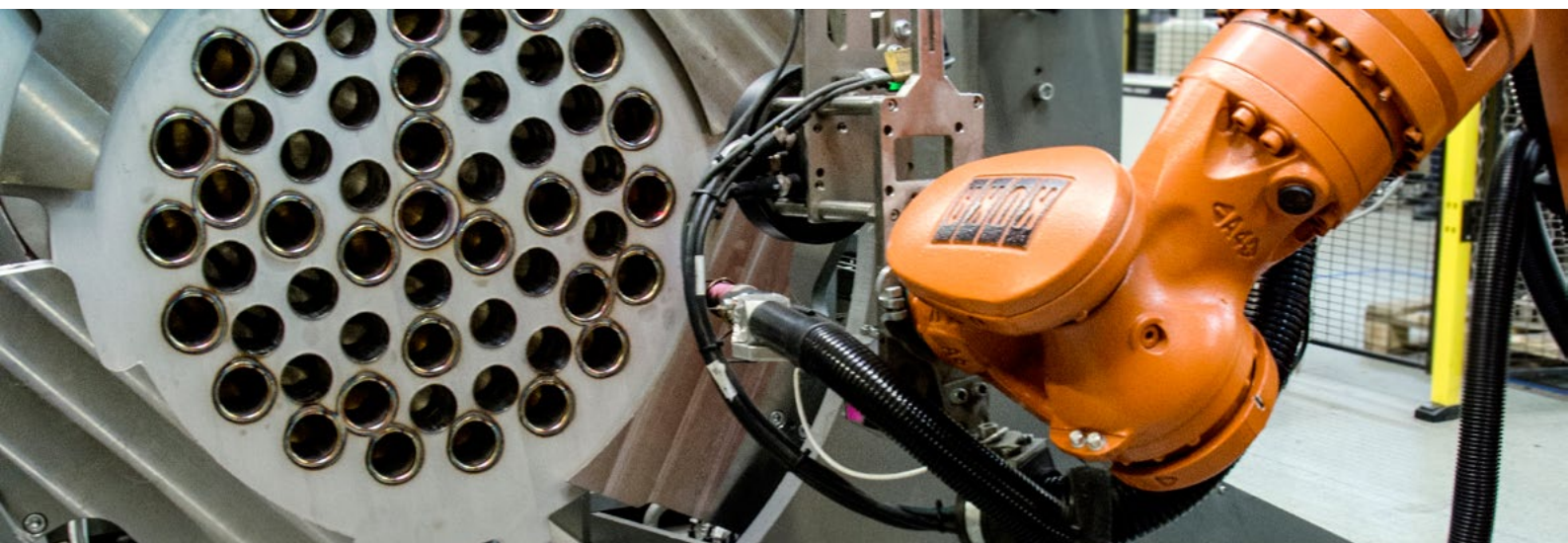


Automatic Tubesheet Treatment Station

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About ATTS:

Automation in Tubesheets production is one of the key sectors developed by RMA Sp. z o.o.

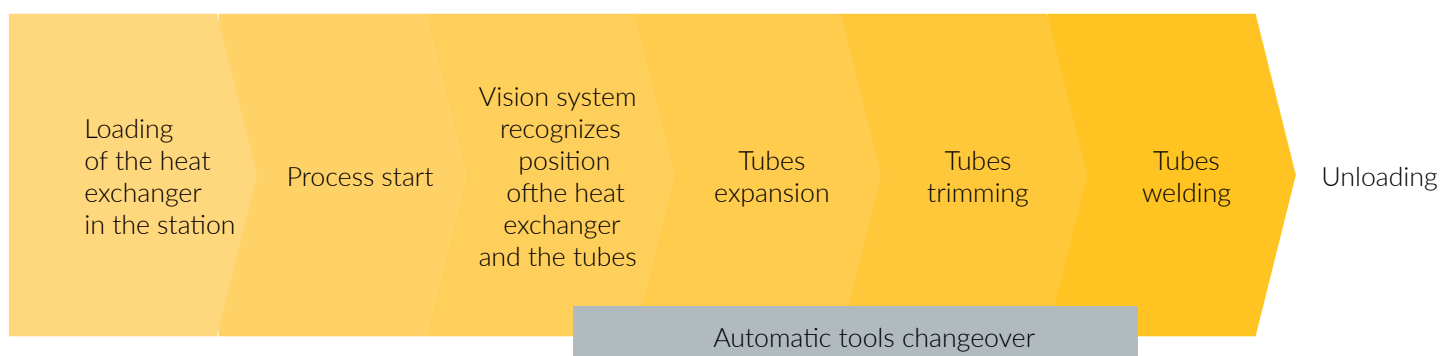
Over the past few years, we have designed & developed many new technologies that have contributed to increased efficiency as well as the quality of manufactured products.

The most important processes in Tubesheet treatment, tubes trimming and expanding, and also tubes to tube sheets welding - can be easily automated.

Process sequence:

Automatic tubesheet treatment solution is followed by three automated processes: tubes expansion, tubes trimming, tubes welding. All processes are operated by one (for each side) 6-axis industrial robot with automatic tool change.

Process sequence:

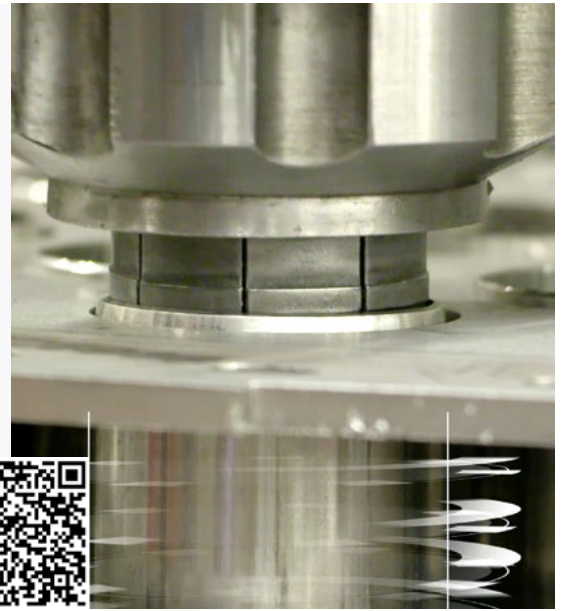


Automated Expanding Tool

The objective of the robot-mounted expanding head is to obtain the smallest possible gap between the tube and tube sheet.

The process is repeated tube by tube through following steps:

- Local control of tool distance from the reference surface
- Inserting the expander inside the tube
- Tube forming
- Tool withdrawal



Automated Tube-end Trimming

The objective of the trimming tool is to provide the required distance between the tube-end and the reference surface (tube sheet)

In order to streamline the process, an automatic tube-end trimming process has been introduced, which is performed as follows:

- Locating tubes
- Designating the local base area
- Measuring tube stick-out outside the reference plane
- Centering the tool against the axis of the machined tube
- Tube-end trimming to a defined height
- Verification of the trimming process

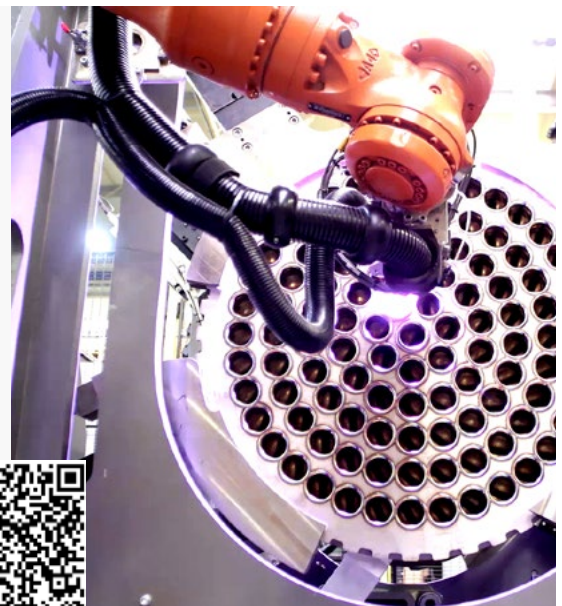


Tubes to Tubesheet Automatic Welding

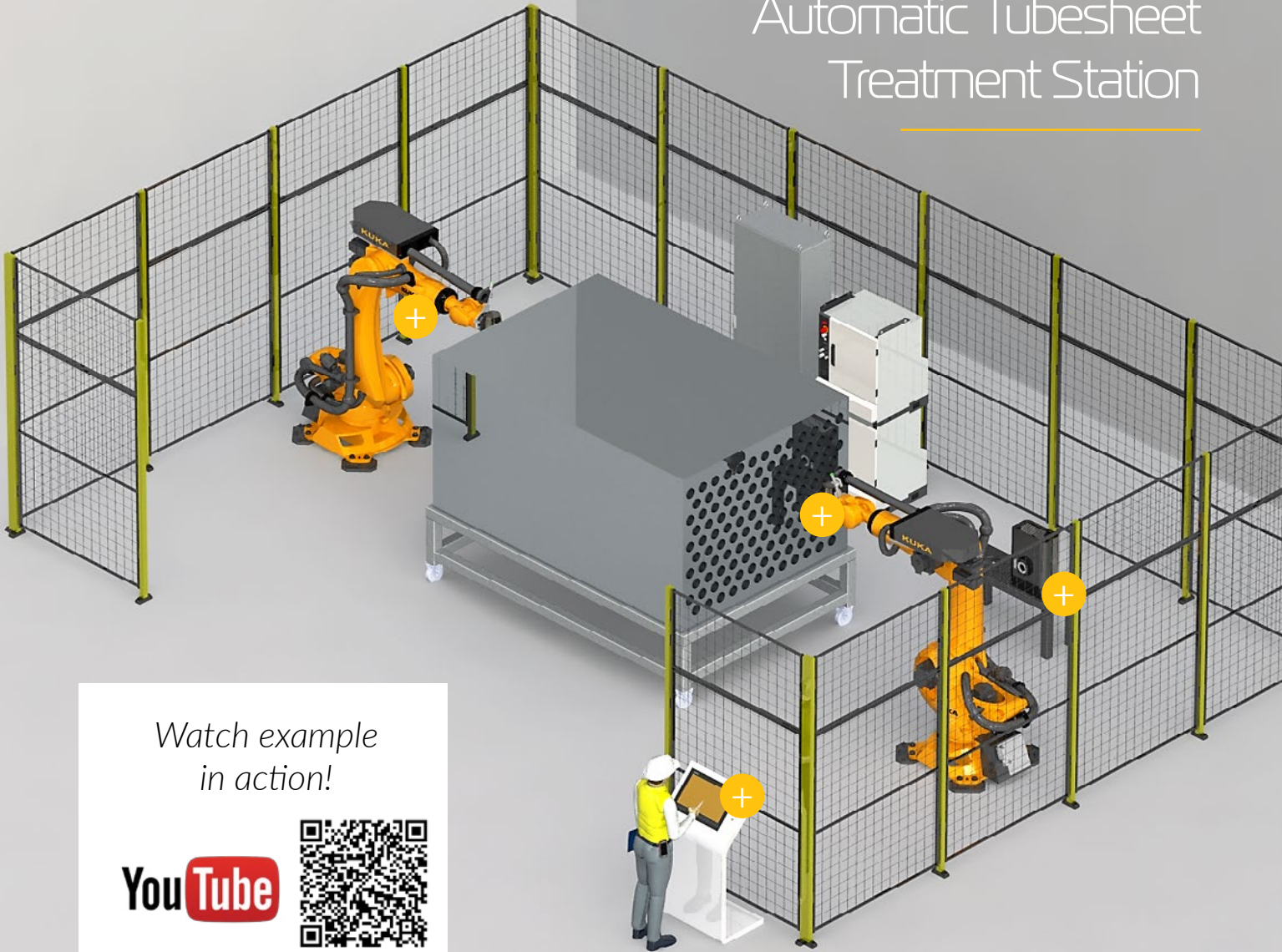
Welding of the tube to tubesheet is the last stage of manufacturing perfect quality tube bundle. The whole process is controlled by very accurate path finding system which controls and monitors welding parameters. Thanks to that we have improved quality and ensured high productivity which is the biggest advantage of this technology.

The process is repeated tube by tube through following steps:

- Finding position of the tube
- Measuring local surface of the tube sheet
- TIG or Laser Welding



Automatic Tubesheet Treatment Station



Watch example
in action!

YouTube



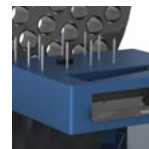
Automatic
expanding
(AES-40)



Automatic
trimming
(ATS-40)



Automatic
Welding



Automatic
electrode
change
(AEC)

AEC, ATS-40 - patent pending!



ROBOTICS
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