

## Industry 4.0: Innovative technologies reshape global manufacturing

Industry 4.0 is a global process that will fundamentally transform the competitive landscape and bring about fundamental changes in the heat treatment sector. SECO/WARWICK is a pioneer in technological solutions that enables customers not only to compete in their markets, but also to gain an advantage thanks to time-saving cycle, energy efficiency, environmentally friendly solutions and high-quality products.

### A new dimension of interaction

Augmented reality, algorithms supporting the decision-making process, predictive maintenance systems, repairs and training, and cooperation in various time zones - these are just some of the benefits of implementing the latest SECO/WARWICK technological solutions in the industry.

Through combining an economic and ecological approach with a non-standard and modern engineering ideas, SECO/WARWICK proves that heavy industry does not have to mean heavy thinking.

### See what others cannot see

The use of the latest technologies allows SECO/WARWICK to provide customers with significant benefits, adding to their business's competitive advantage. SECO/WARWICK is known for its brave implementations, breaking the rules, going beyond the obvious and standard thinking, and finally - offering unique solutions worldwide.

As one of the first in the world, the company reached for the technology of augmented reality.

This is how the SECO/LENS application was created, which, based on the holographic Microsoft computer - HoloLens, introduces to heavy industry a new dimension of benefits.





expensive and time-consuming travels.

SECO/LENS can add a 3D model of metal heat treatment equipment to its actual image, enabling monitoring, diagnostics, remote repair and planning the most optimal layout of the production line in the hall. SECO/LENS will allow for a very accurate visualization of SECO/WARWICK solutions, as well as for conducting training on the operation of the equipment without the need for

### The strength of data analysis

An intelligent tool enabling detection of potential failures before they occur, support in making key business decisions, enabling effective use of equipment and optimal planning of downtime - sounds interesting? It's an advanced set of tools designed by SECO/WARWICK.



For example, SECO/PREDICTIVE is an original system for supporting maintenance processes, using Industry 4.0 and IoT solutions, supported by an interactive calendar of required inspections and maintenance work, minimizing unplanned downtime and failures, increasing the availability of devices.

SECO/WARWICK is ranked among the most innovative companies of heavy industry. SECO/WARWICK's strong position is confirmed by many awards and increasing number of patents.

### Thanks to this award-winning innovation, automotive industry can save billions of euros a year

SECO/WARWICK has been granted the Intelligent Development Award 2017 for the development of the innovative UniCase Master® system, which challenges traditional heat treatment methods.

“Unlike conventional methods, UniCase Master® ensures high repeatability, and thanks to a dedicated, single chamber detail equipped with an omnidirectional gas cooling system with simultaneous 4D Quenching, minimizing such common and cumbersome hardening deformations,” explains Maciej Korecki, Vice President, Segment of Vacuum Equipment, SECO/WARWICK.

Hardening of steel parts by carburizing, and other hardening processes are the most common heat



treatment technologies used in mass production of mechanical transmission components such as gear wheels, shafts, rings, etc. Traditional hardening is based on atmospheric carburization and oil hardening – a process characterized by low precision and accuracy as well as large deformations that require expensive finishing. At present, the factories spend about 20 billion euros per year only on repairing distortion.

Hardening deformation correction is one of the most expensive processes in gearbox manufacturing. SECO/WARWICK's technology eliminates all of the weaknesses of traditional methods, so that using the innovative UniCase Master system will allow the entire automotive industry to save billions of euros a year.

With nearly 4,000 deployed solutions in 70 countries, SECO/WARWICK is the supplier of choice by industrial leaders in transportation, construction, aircraft/aerospace, machine tool, medical devices, defense, primary and secondary aluminum.

Learn more at: [www.secowarwick.com](http://www.secowarwick.com)