

**SECO/WARWICK**

INVENTION MEETS RELIABILITY

# SimVac™

advanced simulator for steel carburizing and hardening processes



# SimVac™

## ADVANCED SIMULATOR FOR STEEL CARBURIZING AND HARDENING PROCESSES

SimVac™ ADVANCED SIMULATOR FOR STEEL CARBURIZING AND HARDENING PROCESSES. THE SOLUTION FOR DETERMINING THE HARDNESS AND PROFILE OF CARBON IN THE MATERIAL BEFORE TREATMENT.



### SimVac™ PROVIDES:

- / An advanced, two-module simulator for vacuum carburizing processes for four types of carburizing mixes – SimCarb™ for carbon profiles, and SimHard™ for microhardness profiles.
- / Availability of all material grades from the group of structural steels for carburizing (according to standards: AISI, EN, PN, GOST, DIN) and selected grades of high-alloyed steels used in aviation,
- / Potential to create custom material grades that match a specific chemical composition,
- / A quick method to determine the correct parameters of the carburized layer in the material without the need for costly trial processes,
- / Ability to verify the influence of various process parameters on the final properties of the carburized layer,
- / Functionality to generate reports from multiple simulations and compare them in a single sheet,
- / Ease of running simulations thanks to an intuitive process wizard.



### SimVac™ PROVIDES:

- / Ability to run simulations in automatic or manual mode,
- / Potential to create a custom chemical composition of the material,
- / Functionality to edit all key vacuum carburizing parameters (e.g. material type, temperature, carburizing and diffusion times, active surface, mixture composition) and carburizing gas volumes,

- / Graphical representation of the carbon or microhardness profile as a function of the distance from the surface,
- / Possibility to compare and analyze multiple processes, including those performed and/or saved previously.



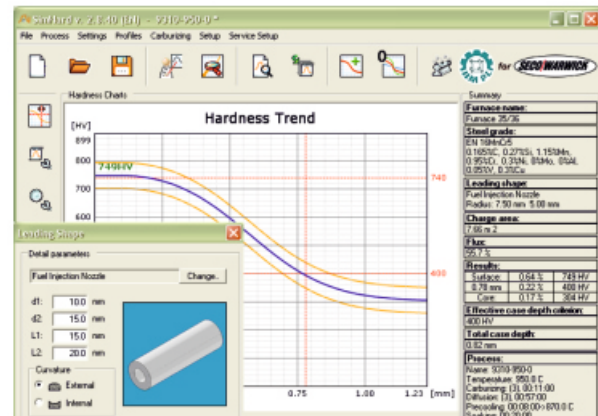
### ADVANTAGES INCLUDE:

Optimization of the vacuum carburizing process by:

- / Selecting the process temperature,
- / Selecting the appropriate number of carburizing and diffusion segments,
- / Selecting the appropriate carburizing and diffusion times,
- / Selecting the right mixture,
- / Calculating the amount of the mixture needed to ensure efficient transfer of atomic carbon to the material.

**Significantly reducing the time needed to generate a new recipe.**

Reduction of production costs – the software allows you to perform a simulation that will determine the optimal process parameters.



SECO/WARWICK is a technological leader in innovative heat treatment furnaces. Expertise includes end-to-end solutions in 5 categories: vacuum heat treatment, atmosphere and aluminum thermal processing, controlled atmosphere brazing of aluminum heat exchangers and vacuum metallurgy.

SECO/WARWICK Group has 9 companies located on three continents with customers in nearly 70 countries. The company provides standard or customized state-of-the-art heat processing equipment and technologies to leading companies in the following industries: automotive, aerospace, electronics, tooling, medical, recycling, energy including nuclear, wind, oil, gas, and solar and production of steel, titanium, and aluminum.