



**Boosting efficiency in a smart way.
The leading hardware and software solution
for carburising processes – Carb-o-Prof®.**



Hard work wins



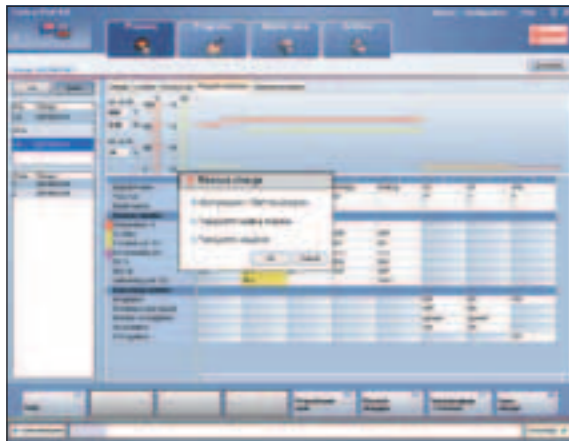
Welcome to a new dimension in process stability.

The new version of Carb-o-Prof®, Ipsen’s hardware and software solution for carburising processes, makes controlling atmospheric furnaces even easier and more reliable.

Ipsen’s Carb-o-Prof® is a modular system solution designed to control a wide variety of processes; it dependably records and manages heat treatment parameters for optimum results and generates archive data and documentation.

Ipsen’s development objectives for the new generation of this system included achieving even greater process security and stability, while providing a system that was supremely easy to work with. The latest version of Carb-o-Prof® sets new standards: the basic structure has been modified and is now even more intelligent and intuitive; the operating design has been simplified and adjusted to provide maximum ergonomics.

Recovery strategies will automatically be proposed if Carb-o-Prof® detects any kind of risk to the batch.



All of these aspects work together to ensure that companies using Carb-o-Prof® 4.0 enjoy a range of valuable benefits: time and cost savings through enhanced operating reliability, and securer, faster system handling.

Even the best programme is only as good as its user interface. Ideally, any software user interface should be intuitive. Ipsen’s new, optimised Carb-o-Prof® interface, menus and navigation are clearly structured and simple to follow. Real-time diagrams allow the user to read the current batch production status at a glance. Carb-o-Prof® takes the operation of atmospheric furnaces to a new level of automation, requiring minimum input from the operator and at the same time virtually eliminating the risk of operating errors.

The interaction between hardware and software in the new version has been further optimised. Carb-o-Prof® was built using proven, robust hardware components capable of withstanding the rigours of industrial production environments. This enhances the system’s dependability, boosts ease of maintenance and repair and reduces the time needed for installation and configuration.

In the event of PC failure intelligent communication with the furnace SPS guarantees that the current process continues seamlessly and the batch is saved. Although standardised components have been used for hardware and software, Carb-o-Prof® offers an outstanding level of flexibility, allowing the system to adapt precisely to your production requirements and specific project parameters.

Carb-o-Prof® seamlessly integrates into Ipsen’s AutoMag® automation package which controls and interlinks multiple units, such as furnaces, washers and transport systems, to create fully automated heat-treatment centres.

Smooth operator.

Everything under control: Carb-o-Prof® modules enable easy-to-use, comprehensive and dependable process control, analysis and optimisation.

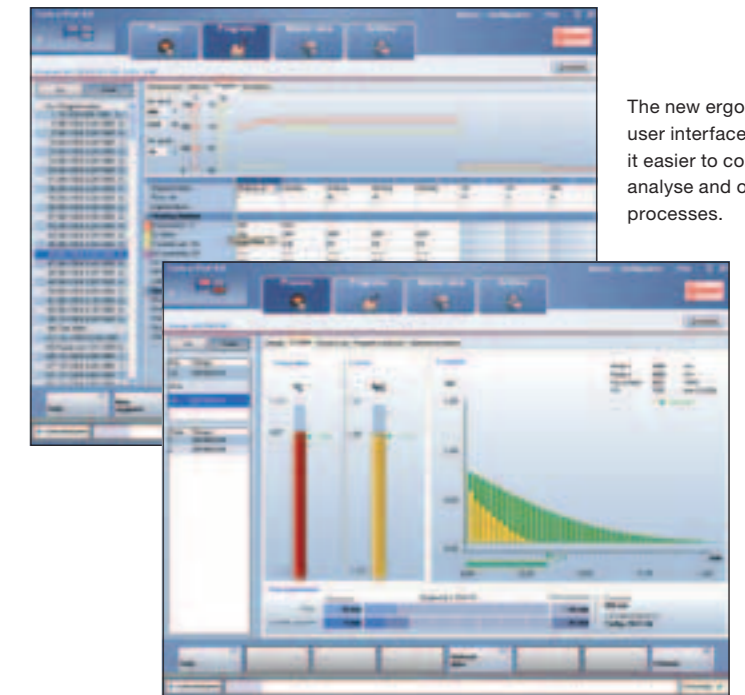
The “Main Menu” module acts as the Carb-o-Prof® gateway. All passwords and users are administered in this module, data are saved and archived and the configuration options are selected here. Because we understand the importance of security, we have implemented a highly effective user administration function to prevent unauthorised persons from accessing sensitive areas. A specific portfolio of functions can be defined for each user, thus clearly identifying permitted and prohibited actions for each operator. A variety of language options can also be selected in this module.

Under process visualisation the process status can be monitored in both C-Profile and a curve diagram. If necessary, correction of programme can be conducted immediately.

All heat treatment programmes are entered and saved in the “Programme” module. The integrated C-Profile optimisation feature allows processes to be simulated on the basis of target values and then programmed into the system. Stringent plausibility controls identify and eliminate any faulty entries. This programme optimisation ensures that target values are achieved for carburisation case depth (A_c), surface carbon content (C_s), and the graphically defined surface carbon. The C potential is calculated and controlled by the process computer on the basis of continuous temperature monitoring and process analysis. Specially developed oxygen probes (Ipsen Carbon-Sensor®) are available for taking measurements. They are suited for carrier gas procedures (endogas) as well as atmospheres directly produced in the furnace,

like SuperCarb®- and the N₂-Methanol processes. All material data are saved in the “Master Data” module and are used by Carb-o-Prof® to calculate the influence of the alloying elements on the carbon diffusion (alloy factor).

All material data are saved in the “Master Data” module and are used to calculate the carbon core and alloy factor. Process data are saved in batch records in the Carb-o-Prof® archive, enabling you to recreate a previously used process for a new batch, as well as allowing you to call up process and product records for a specific batch even several years later. Carb-o-Prof® gives you more intelligence, more process stability and greater efficiency.



The new ergonomic user interface makes it easier to control, analyse and optimise processes.

About the company.

Ipsen – we deliver performance.

Ipsen stands for cutting edge heat treatment technology and systems. Few companies in the world have had such a decisive impact on the development of heat treatment.

For over 60 years Ipsen has been finding new ways of producing steel of ever improving quality using the company's innovative, proprietary technologies, such as the AvaC® process (low-pressure carburising), the SolNit® process (solution nitriding) and the recently developed HybridCarb process (gas carburising with recycling). Ipsen's offerings combine the highest performance with outstanding reliability, which perhaps explains why our furnaces and heat treatment equipment enjoy an excellent reputation

all over the world. Our customers work in automotive, aviation and aerospace as well as tooling, machining, medical and commercial heat treating.

Despite Ipsen's many important innovations, our focus is not solely on technology: in all we do, we aim to surpass our customers' expectations. We are not only committed to developing great technology, we are also passionate about providing quick, seamless and attentive service.



If you require further information or would like to know more about our company and the products we make, please contact us. We look forward to hearing from you!

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