Carb-o-Prof®
Boost Efficiency with Intelligent Controls
Welcome to a new world of reliability and process stability.

Carb-o-Prof®, Ipsen’s leading software solution for carburizing processes, provides ease of use and reliable operations when it comes to controlling your atmosphere heat-treating systems.

Ipsen’s Carb-o-Prof software combines more than six decades of knowledge and expertise in a single controls system. This modular system is specially designed for the computation and execution of a wide variety of processes, as well as recording and managing heat treatment parameters and generating archive data and documentation.

Overall, Carb-o-Prof provides the flexibility needed to measure and analyze your equipment and processes with ease. Users can then take advantage of this analysis to refine and adjust the settings and parameters of their equipment in order to enhance their processes.

User-Friendly Design

This unique, reliable software consists of flexible controls, straightforward user prompts and color menus – making for a user-friendly experience. In addition, real-time diagrams allow users to easily read the current production status at a glance. Other features include an extensive recipe database, an adaptive C-profile control and a time- and cost-saving simulator.

Overall, Ipsen’s Carb-o-Prof system sets new standards with an operating design that has been simplified and adjusted to provide maximum efficiency and an intelligent and intuitive interface.

This system uses proven, robust hardware components capable of withstanding the rigors 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. Carb-o-Prof also takes the operation of atmosphere furnaces to a new level of automation, requiring minimum input from operators and virtually eliminating the risk of operating errors.

Adaptive Controls

In the case of an unforeseen event, such as a variation in the temperature or percentage of carbon, this intuitive controls software communicates with the system’s PLC and adapts the process to the changing circumstances, preventing the waste of parts and resources.

Carb-o-Prof offers an outstanding level of flexibility, allowing the system to precisely adapt to your production requirements and specific load parameters.
Furthermore, 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 a fully automated heat treatment center.

By utilizing the Main menus – located in the upper right border – you can adjust all users’ permissions and passwords. A highly effective user administration function has also been implemented to prevent unauthorized users from accessing sensitive information. The main administrator can define a specific portfolio of functions, thus clearly identifying the actions permitted and prohibited for each operator. In the Main menus you can also select configuration options for the atmosphere furnace system and its components, choose from a variety of language options and more.

Comprehensive Modules

All material specifications are saved in the Master Data Module, and Carb-o-Prof can use this data to calculate the core carbon content and the alloying factor.

Under the Process Module, users can monitor the process status in both the C-Profile and the curve diagram. As a result, parts within the same load are consistent in both case depth and hardness. The process computer also calculates and controls the C-potential based on continuous temperature monitoring and process analysis. Ipsen’s specially developed Carbon-Sensor® takes oxygen measurements and is suited for the carrier gas (e.g., endogas and atmospheres produced directly in the furnace, such as HybridCarb® and the Nitrogen-Methanol processes).

The Program Module is where users enter and save all heat treatment programs. The integrated C-Profile optimization allows users to simulate processes and compute the materials’ expected carbon profile according to the entered parameters.

Carb-o-Prof displays the results both as a table and as a straightforward graph. The profile can then be re-evaluated and parameters adjusted, if necessary. Stringent range-limiting controls also identify and eliminate any typing errors. This gives users the ability to review their load’s process results immediately after generating the potential recipe – all without wasting valuable parts, time or resources.

Carb-o-Prof also enables strict C-Profile control as users are able to target a carbon-content curve based on specified target parameters, such as surface carbon content and carburizing depth.

Users can save process data as batch records in the Archive Module. This also enables users to recreate previous processes for a new batch, as well as call up process and part records from a specific batch – no matter how long ago it occurred.

User-Friendly Design

This reliable software consists of flexible controls, straightforward user prompts and color menus.
About Ipsen

Since 1948, Ipsen has been designing and manufacturing industrial atmosphere and vacuum heat-treating systems and supervisory controls systems. This advanced equipment is designed for a variety of industries, including Aerospace, Automotive, Commercial Heat Treating, Energy, Medical and Tool and Die.

Much like our founder, Harold Ipsen, we believe that innovation drives excellence. We are committed to delivering integrated heat treatment solutions for a range of applications that enable you to improve titanium medical implants, develop more efficient cars and jet engines and transform space exploration. With nearly 70 years of thermal processing experience and thousands of systems installed worldwide, no company can provide 360° support for all of your heat-treating needs better than Ipsen.

Vacuum Heat Treatment
Ipsen delivers proven vacuum heat-treating technology that allows you to achieve maximum flexibility and meet strict industry demands. Whether your process can benefit from increased heating and cooling control, precise case depth and uniformity or flexible quenching options, Ipsen has the heat treatment solutions for you. Ipsen’s vacuum furnaces also offer a wide range of sizes and versatility of processes, including annealing, brazing, hardening, low-pressure carburizing, solution nitriding, stress relieving and tempering.

Atmosphere Heat Treatment
With one of the largest installed bases of atmosphere heat-treating systems, Ipsen has the experience necessary to provide optimum equipment you can trust and rely on for full-scale solutions. Ipsen’s ATLAS integral quench batch system continues this tradition, combining the achievements of past atmosphere furnaces with the evolutionary innovations of the future – incredibly advanced, energy-efficient controls, ease of integration and more.

Aftermarket Support
Count on our responsive Aftermarket Support Team to help keep your equipment running at peak performance and minimize costly downtime by meeting your needs for furnace controls upgrades, replacement hot zones, parts, maintenance and service. When you need support, call Ipsen’s Aftermarket Support Helpline: 1-844-Go-Ipsen.

With production locations in America, Europe and Asia, along with representation in 34 countries, choosing Ipsen means choosing a partner in success.