



ECM
TECHNOLOGIES

ICBP® NANO



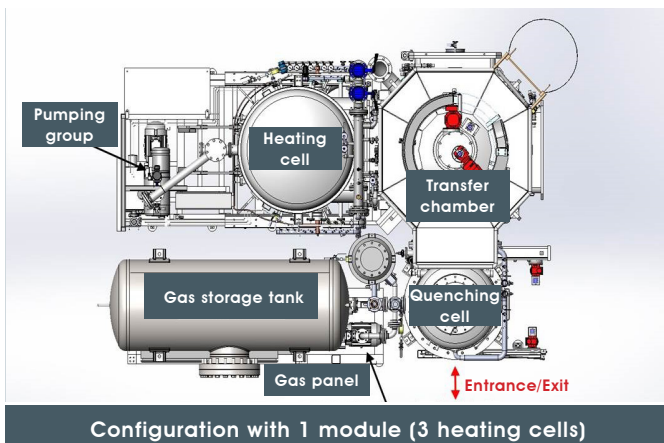
THE MOST COMPACT INSTALLATION OF LOW PRESSURE CARBURIZING AND CARBONITRIDING FURNACE

INNOVATION OF YOUR FUTURE

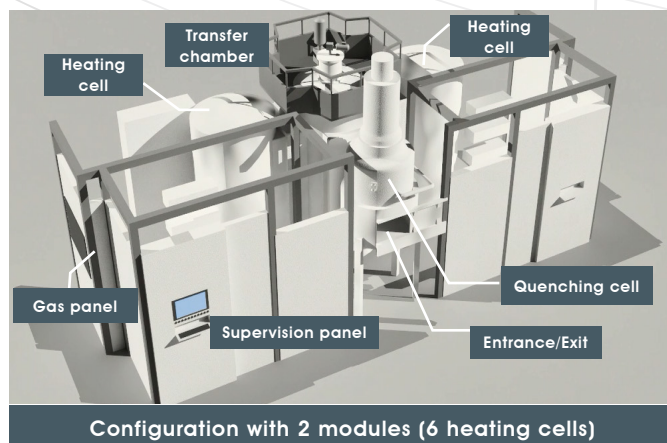
ICBP® NANO, is the latest product in the range of Low Pressure Carburizing and carbonitriding furnaces, which uses technologies already proven on over 200 installations and 1000 ICBP® heating cells throughout the world.

ICBP® NANO composes one module with 3 stacked up heating cells (can be extended to 6 heating cells, corresponding to 2 heating modules) and a gas quenching cell to cool the pieces. The carburizing cells are stacked up to reduce the footprint's installation as much as possible.

ICBP® NANO will be integrated directly into the production line and allows to reduce the cycle time while simplifying the flows between the machining and heating treatment.



Configuration with 1 module (3 heating cells)



Configuration with 2 modules (6 heating cells)

ADVANTAGES :

Better uniformity and repeatability from one part to another while reducing distortion.

Each cell is controlled separately to be able to work in each cell at different temperatures, gas injection and heating treatment recipes.

- **Flexibility** : Adding 3 extra heating cells on an existing installation to increase the productive capacity.
- **Improved productivity** :
 - Directly integrated into the machining line
 - Shorter treatment cycles
(possible speed: 1 tray / 7.5 mn)
- **Guaranteed performance** : Thanks to our test platform and integrated metallurgy laboratory.
- **Repeatability** : excellent from batch to batch, from part to part.
- **Personal protection** : cold system, no fire hazard & elimination of scrap.
- **More compact**: Stacked up heating cells.
- **Shorten installation time on site**: the equipment is already assembled.
- **Simplified maintenance**:
 - Specific maintenance area by removing heating cells
 - Actuators and sensors accessible from the outside (motor, cylinders...) during the production cycle
 - Maintenance door on the transfer chamber
- **Gas quenching cell compatible** with Helium and Nitrogen gases without modification



FEATURES:

TREATMENT CAPACITY

Gross load	Width	Depth	Height
100 kg	500 mm	600 mm	250 mm

FOOTPRINT DIMENTION WITH

- 1 module composed of 3 heating cells
- 2 modules composed of 6 heating cells

5500 mm	3800 mm	3800 mm
8000 mm	3800 mm	3800 mm

POSSIBLE PROCESSES

- Vacuum carburizing
- Vacuum carbonitriding
- Hardening
- High temperature tempering
- Vacuum annealing
- Brazing
- Sintering

GAS QUENCHING:

- Helium (H₂) or Nitrogen (N₂)
- Up to 10 bar (option 20 bar)

INNOVATION:

Moving position to facilitate maintenance.

OPTIONS PRINCIPALES

- Machine compatible with AMS2750 and neutral atmosphere convection heating
- System for exhaust gas treatment
- Cooling water loop
- Quenching gas recovery system (for Helium)
- All peripherals such as washing machine, preheating, tempering, storage, transfer system and loading/unloading stations, etc.
- Heating cell for deoiling and dewaxing

