ICBP® NANO, is the lastest 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.

**ADVANTAGES:**

- **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

<table>
<thead>
<tr>
<th>Gross load</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 kg</td>
<td>500 mm</td>
<td>600 mm</td>
<td>250 mm</td>
</tr>
</tbody>
</table>

FOOTPRINT DIMENSION WITH

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

<table>
<thead>
<tr>
<th>Footprint Dimension</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500 mm</td>
<td>3800 mm</td>
<td>3800 mm</td>
<td></td>
</tr>
<tr>
<td>8000 mm</td>
<td>3800 mm</td>
<td>3800 mm</td>
<td></td>
</tr>
</tbody>
</table>

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

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