ALD Vacuum Technologies
Heat Treatment Services

Our Know-how for your products
Our History

More than 100 years in Vacuum Technologies!

1916 | Precursor of ALD
First application of vacuum technology at Heraeus as precursor of ALD.

1994 | Foundation
Officially named ALD Vacuum Technologies GmbH.

1999 | VACUHEAT
HTS together with VACUHEAT was opened in Germany.

2006 | ALD Thermal Treatment
HTS first branch in America.

2008 | ALD Tratamientos
Expansion in Mexico.

Your Expert in Vacuum Heat Treatment

Heat Treatment Services (HTS) is a global leader in services to the heat treatment community, a business unit of ALD Vacuum Technologies GmbH.

As Expert in vacuum heat treatment, we specialize in:

• Low Pressure Carburizing (LPC)
• High Pressure Gas Quenching (HPGQ)
• Hardening
• Normalizing
• Annealing
• Brazing
• Gas Nitriding / Ferritic Nitro-Carburizing (FNC)
ALD HTS is a heat treatment service provider specializing in vacuum technologies featuring Low Pressure Carburizing (LPC) and High Pressure Gas Quenching (HPGQ) processes. We are your partner to heat treat any of your parts which require low distortion and superior quality control in whatever field you are in:

- Automotive
- Aerospace
- General Industry
- Tool and Die
- Medical
- Energy and Mining

The best quality for the high requirement
Highest quality standards make us a strong partner.

Every single load is well-checked before and after vacuum heat treatment process by our high-tech quality control systems and well-trained experts.
**Advantages of Vacuum Heat Treatment**

Vacuum Heat Treatment by Low Pressure Carburizing (LPC) and High Pressure Gas Quenching (HPGQ) is a more effective and environmentally friendly process than conventional ones.

### Your benefits at a glance

<table>
<thead>
<tr>
<th>Conventional Process</th>
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</thead>
<tbody>
<tr>
<td>Conventional Carburizing</td>
</tr>
<tr>
<td>Oil Quenching</td>
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<tr>
<td>Washing</td>
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<td>Hard Machining</td>
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<tr>
<td>Deburring</td>
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<tr>
<td>Washing</td>
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<tr>
<td>Assembly</td>
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</tbody>
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<table>
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<tr>
<th>Vacuum Heat Treatment Process</th>
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<tbody>
<tr>
<td>Low Pressure Carburizing (LPC)</td>
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<td>High Pressure Gas Quenching (HPGQ)</td>
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<tr>
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</tbody>
</table>

### Advantages of Vacuum Heat Treatment

<table>
<thead>
<tr>
<th>Advantages of Low Pressure Carburizing</th>
<th>Advantages of High Pressure Gas Quenching</th>
<th>Advantages of Vacuum Heat Treatment by ALD HTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precision Carburizing</td>
<td>Possibility of distortion reduction of 15 to 50% depending on part-geometry and steel grade</td>
<td>Clean working environment without vapors, flames, or soot</td>
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<td>Clean working environment without vapors, flames, or soot</td>
<td>Manufacturing cost reduction up to 20 to 30% (e.g. by elimination of hard machining)</td>
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<td>No intergranular oxidation</td>
<td>Improved fatigue resistance</td>
<td>No post quench wash required</td>
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<td>Quick delivery turnaround</td>
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<td>No surface decarburizing</td>
<td>Clean surfaces</td>
<td>Zero fossil emission</td>
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<td>No capital investment in own equipment</td>
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<td>Fast carburizing</td>
<td>99% helium recovery</td>
<td>No investment in human resource (Vacuum specialists)</td>
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- **Shorten Process Time**
- **Improve Quality**
- **Environmental Friendly**
- **Commercial Efficiency**
Our locations worldwide

- **Vacuheat GmbH**
  Hohensteiner Straße 11-13
  09212 Limbach-Oberfrohna
  Germany
  Phone +49 3722 4022 20

- **ALD Thermal Treatment Inc.**
  2656 24th Street
  Port Huron, MI 48060
  USA
  Phone +1 810 3570 685

- **ALD Tratamientos S.A. de C.V.**
  Blvd. Omega No. 2270
  Ramos Arizipe C.P. 25901
  Mexico
  Phone +52 844 86697 75

- **ALD Production and Sales Centers**

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