Heat-Treatment Plants Made To Measure
Convincing Down To The Smallest Detail
RUHSTRAT –
The Specialist For Temperatures Up To 3,000 °C
For More Than 100 Years

1888
foundation by the two brothers Adolf and Ernst Ruhstrat

1896
development of the first resistance-heated high-temperature furnace

1898
construction of high-temperature furnaces for industrial use

1929
Ernst August Ruhstrat took over the management of the company in the second generation

RUHSTRAT is a modern medium-sized family-owned company whose successful family tradition has been being continued by the forth generation now. Since the foundation in 1888, our quality products of the field of electrical engineering and plant construction have been established.

In collaboration with RUHSTRAT, Prof. Walter Nernst from the University of Göttingen 1896 designed the first carbon-tube furnace achieving temperatures of up to 3,000 °C. Two years later, RUHSTRAT was put in charge of the design and the construction of these high-temperature furnaces for industrial use. Since that time, true to the company motto „Convincing Down To The Smallest Detail“, we have been engaged in the worldwide distribution of electrically and combustible-heated industrial furnaces for various heat treatments and branches in developing the optimal plant matched to each particular requirement. In doing so, we always assist our customers being a competent partner, from the design to the construction and manufacture up to the commissioning.
transfer of the registered office of the company from Göttingen to Bovenden-Lenglern 1960

certification according to DIN ISO 9001 1993

Andreas Ruhstrat took over the management of the company in the fourth generation 2003

Ernst Adolf Ruhstrat took over the management of the company in the third generation 1968

Andreas Ruhstrat took over the management of the company in the fourth generation. 2003
The customer takes centre stage at RUHSTRAT. Whether heat-treatment plants for the metal processing industry, the chemical industry or the carbon industry are needed, our declared company goal is to develop high-quality forward-looking technologies which are most suitable for our customers. In close contact with the user, we create individually reasonable and economic solutions. Highly qualified personnel and modern equipment guarantee a comprehensive service and first-class quality. We can rely on our flexible and pro-active employees and on more than 110 years of practical experience in designing industrial furnaces.
In a more and more complex market, RUHSTRAT has made a point of breaking new ground always together with its customers. That is the best road to success. Our qualified engineers offer a comprehensive expert advice to the customer. They discuss in detail his requirements, they develop and propose solutions and finally conceive and design a custom-made heat-treatment plant. Project-oriented designing and construction enables us attaining results which are optimally matched to the particular customer – both for electrically and combustible-heated furnaces.

Beyond the innovative products and technologies for the heat treatment, RUHSTRAT provides in-a-box performances with regard to the requirements involved.

- competent project advice
- designing heat-treatment plants optimized for the customer’s application
- economic and environmentally sound construction
- professional designing and manufacturing of all equipments
- professional assembly and commissioning
- theoretical and practical training of the customer’s staff
- comprehensive after-sales service
According to the requirements on air, protective-gas and reactive-gas conditions we offer customer-specific heat-treatment plants:

<table>
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<tr>
<th>for</th>
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<tbody>
<tr>
<td>debinding</td>
<td>pressings</td>
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<td>sintering and</td>
<td>organic substances</td>
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<td>high-temperature sintering</td>
<td>metallic oxide</td>
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<td>calcining</td>
<td>metals</td>
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<td>reducing</td>
<td>technical ceramics</td>
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<td>oxydizing</td>
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<td>annealing</td>
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Comprehensive know-how with regard to the including peripheral equipment is a matter of course for us:

- protective and process gas equipments
- measuring and control technology for protective and process gas
- handling, cooling, drive and transport systems
- control systems for the process and the visual display
Project-Oriented Technology

Heat-Treatment Plants In The Metal-Processing Industry
According to the requirements on air, protective-gas and reactive-gas conditions we offer customer-specific heat-treatment plants:

<table>
<thead>
<tr>
<th>for</th>
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<tr>
<td>hardening</td>
<td>band material, e.g. saw band, surgical, technical or razor blades</td>
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<tr>
<td>tempering</td>
<td>flat steel semi-finished products, e.g. circular banks, cooking knives, machine knives</td>
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<td>heat-treatment</td>
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<td>soldering</td>
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<td>annealing</td>
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<td>sintering</td>
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<td>thermal cleaning</td>
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Solutions Fitted Exactly To The Process Requirements Of The Metal-Processing Industry

Comprehensive Know-how With Regard To The Including Peripheral Equipment Is A Matter Of Course For Us:

- protective and process gas equipments
- measuring and control technology for protective and process gas
- handling, cooling, drive and transport systems
- control systems for the process and the visual display
Project-Oriented Technology

Heat-Treatment Plants In The Carbon And Graphite Industry
According to the requirements on air, protective-gas and reactive-gas conditions we offer customer-specific heat-treatment plants:

<table>
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<th>for</th>
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<tbody>
<tr>
<td>• oxydizing</td>
<td>• carbon fibres, yarns, felts, fleece or bands</td>
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<tr>
<td>• carbonizing</td>
<td>• special graphites</td>
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<tr>
<td>• graphitizing</td>
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</table>

Solutions Fitted Exactly To The Process Requirements Of The Carbon and Graphite Industry

Comprehensive Know-how With Regard To The Including Peripheral Equipment Is A Matter Of Course For Us:

- protective and process gas equipments
- measuring and control technology for protective and process gas
- handling, cooling, drive and transport systems
- control systems for the process and the visual display
Project-Oriented Technology

Laboratory Furnaces For Analyses Of Iron Ores Or Coke

According To The ISO Standards
According to the requirements on air, protective-gas and reactive-gas conditions we offer laboratory furnaces as

- pit furnace for coke analysis according to ISO/DIS 18894
- vertical tube furnaces for reduction determination of iron ores and coke according to ISO 4696, 8371, 7215, 4695 etc.
- rotary drum furnaces for reduction dissociation analyses of iron ores according to ISO 11257 and 13930

Laboratory Furnaces According To The ISO Standard For Analysis Of Iron Ores Or Coke

Comprehensive Know-how With Regard To The Including Peripheral Equipment Is A Matter Of Course For Us:

- protective and process gas equipments
- measuring and control technology for protective and process gas
- handling, cooling, drive and transport systems
- control systems for the process and the visual display
By means of the project-oriented construction and manufacture of electrically heated and combustible-heated heat-treatment plants RUHSTRAT can fulfil the requirements of their customers, even very specific demands. To achieve a high quality, accurate control, an optimal regulation and a complete supervision of the processes are indispensable.
According to the requirements, we offer custom-made system solutions with control technology for

- electrically heated heat-treatment plants
- combustible-heated heat-treatment plants
- heat-treatment plants with transport and lifting devices
- heat-treatment plants with driving devices for once-through mode and batch operation
- process control and monitoring systems

Therefore, we provide our customer with the complete solution:

- control systems with independent process control level
- control systems in connection with upstream and downstream production facilities

Regulating
- process-oriented programming
- manual operation
- multi-plant controlling
- special functions

Controlling
- integrated PLC
- manual operation
- special functions

Recording
- recording of process quantities
- integrated recorder functions
- graphical and numerical data output
- printing functions

Visual Display
- plant diagrams with
- state description
- description of alarm and indication
- online description of process quantity