

Hardness is the basis of success

Threading-tool specialist Bass uses state-of-the-art Durferrit hardening technology

Bass GmbH & Co. KG are specialists in the manufacture of high quality threading tools. At the beginning of 2005 the company, which is located in Niederstetten, Baden-Württemberg, Germany, moved to new premises in the area. This move, made necessary by the increased volume of business, has enabled them to optimize the complete production processes to meet customer requirements even more effectively.

The success being experienced by Bass has confirmed that concentrating on the high quality was and is the right strategy. It was clear from the outset that, with the new building, the opportunity should also be taken to integrate state-of-the-art technology into the manufacturing processes. Provided, of course, that the quality of the products would continue to set standards in their particular fields of operation. This, in turn, meant that thought had to be given to alternative methods of hardening materials. During the discussions it became quite obvious that the salt bath heat treatment should be performed in Durferrit salt bath plants. In the opinion of Martin Zeller, Director at Bass, the high performance of the hardened tools, their long service life and constant top quality are due to the parts being salt bath heat treated.

For him, the benefits of salt bath technology are quite obvious: "Our decision to heat treat in salt baths was an all-round calculated one. Apart from the high uniformity of hardness, which we need as a basis for our tools, salt bath technology generally gives us much greater flexibility than when hardening in vacuum furnaces.

For example, we can react to customers' wishes more quickly. Furthermore, different steels, various batch sizes and different tool sizes and diameters are no longer a time-related problem. Also, we can set the salt bath process parameter according to customers' individual requirements. Due to the ever-growing use of so-called PM steels, which require an even more precise hardening, the salt bath process

is an absolute must, thus giving us a clear competition advantage compared to many colleagues using vacuum furnaces."

Proven technology avoids decarburization

The heat treatment of high speed steels in salt melts has been standard procedure for a very long time. By using specially developed salt baths and by keeping exactly to the treatment parameter it is not difficult to produce results which are highly uniform and reliable, without decarburization taking place.

Stage one consists of preheating up to 400 °C in air. Step by step the steels to be hardened are put into hotter salt baths



Martin Zeller, Director of Bass, is of the opinion that salt bath hardening has a clear advantage over hardening in vacuum furnaces.



Specialists at Bass and Durferrit planned and initiated the new salt bath furnace line.

(From right to left) Martin Zeller, Director, Dr. Stefanie Leenen, Managing Director of Bass GmbH & Co. KG and Hans Baier Durferrit GmbH

(see figs. 1 and 2) prior to the actual austenitizing or hardening, which takes place between 1,100 °C and 1,200 °C. After this

Specialists from Bass and Durferrit planned and initiated the salt bath furnace line together. The constantly high quality

of Durferrit salts has ensured that all processes are also reproducible in the newly constructed heat treating facilities. This is an important factor because the operators can utilize their wide range of experience which has been gained over a long period of time.

It is the know-how of the operators which plays a decisive role in the success of hardening processes. For this reason this is no question for Dr. Stefanie Leenen, Managing Director of Bass, having components produced or certain parts of the production realized outside Germany: "Our highly complex manufacturing processes, and particularly our know-how in hardening, give us the quality which we could not obtain outside the country. The automo-

tive and supporting industries in particular, as well as the European markets are not prepared to accept a lower quality. On the contrary, it is just because of our high quality standards that we are internationally successful, even in the so-called low-wage countries such as China".

Process know-how Important success factor

Durferrit GmbH offers heat treating plants for every application, depending on customer's requirements. From the planning to the correct choice of salt, to the training of operators to the complete service we, as world leader in salt bath plants, can provide our extensive know-how and support. The choice of heat treating process according to metallographic requirements in particular, or the use of suitable furnace plants of the correct size needs years of experience.

A task for which Durferrit is well equipped.

The successful co-operation between the two German specialists Bass and Durferrit shows that quality and customer orientation pays, even in a global market.



Figure 1



Figure 2

a controlled cooling takes place. Before the work pieces can be processed further they are tempered several times. Durferrit provides the appropriate special salts for all stages, including for the cleaning of the tools.

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