

**ABP**  
INDUCTION

**NEWS**  
SPECIAL

# 120 YEARS OF INDUCTION FURNACE CONSTRUCTION & 95 YEARS OF THE DORTMUND SITE

INDUSTRY AND SITE HISTORY OF ABP



# 120 years of induction furnace construction

95 years in Dortmund: ABP Induction looks back on a long history in the Ruhr region

**ABP Induction is celebrating two special events: 120 years ago, the first induction furnace was built by the predecessor company ASEA. And for 95 years, industrial furnace construction has been based at the Dortmund site under the same roof as ABP Induction and its predecessor companies. What began as a repair plant for turbines, transformers and electric machines has developed into a technology leader for induction melting and heating. To this day, ABP is committed to the Dortmund location in the Ruhr region, continuing the industrial tradition that began 95 years ago and leading it into the digital future – as a pioneer for digital solutions in the foundry industry.**

## A look at the history of ABP

ABP was not always ABP – the company emerged from a division of ABB (Asea Brown Boveri). On November 1, 2005, ABB sold the Foundry Systems business unit to CM Acquisition. The ABB Foundries and Forming Plants Dortmund division was transformed into the independent company ABP Induction Systems GmbH, a subsidiary of the newly founded

ABP Induction LLC in the USA and the hub for the sister companies in the USA, Sweden, Thailand, Brazil, Mexico and India. The ABB Foundry Systems business unit was the result of the merger between Allmänna Svenska Elektriska Aktiebolaget (ASEA) and the Swiss company Brown, Boveri & Cie. (BBC). This strategic merger made ABB the world's number three in electrical engineering and was considered a milestone in commercial history at the time.

In 1903, ASEA built its first induction furnace for the foundry in Gysinge, Sweden – a channel-type induction furnace for 1.8 tons with an output of 300 kW. In the 1880s, experiments in metal treatment using induction gained momentum. Thomas Edison applied for a patent for electric ore separation in 1880. Around the turn of the century, technology became better and better. In 1918, BBC supplied the first electric arc furnace for the production of gray cast iron, and a year later for non-ferrous metals and steel. In the 1920s, induction furnaces were planned to be built in the Ruhr region as well.



founded, which campaigned for a shipping connection from the Rhine to the Weser and Elbe with a port in Dortmund.

However, it took over 40 years to complete the Dortmund Ems Canal and open the port, which was officially inaugurated by Kaiser Wilhelm II on August 11, 1899.

Five port basins were completed: Kanalhafen, Stadthafen, Südhafen, Kohlenhafen and Petroleumhafen (Canal Port, City Port, South Port, Coal Port and Petroleum Port). The port office building with bridge, which is still representative today, several warehouses and crane facilities were added. Directly adjacent, at Überwasserstraße 3 (today the eastern entrance to the ABP site), a repair workshop was built on June 1, 1922 to meet the service requirements of mines and metalworking plants in the

## Imprint

**ABP editorial staff:** Evelyn Brühmann, Ulrike Szymura, Sandra Tolksdorf, Dr. Marco Rische (verantwortlich)

### Realisation:

Michael Braun  
(Medienhaus Waltrop)

**Suggestions, contributions and questions** ulrike.szymura@abpinduction.com

## Closely connected to the Dortmund port area

Back to the Dortmund location: a new industrial area had developed here in the north of the city at the end of the 19th century, which was significantly boosted by the advancement of canal construction. In 1856, a canal committee was

increasingly industrialized Ruhr region. The initially small repair division on the port site employed 20 workers, as can be seen from a document on „25 Years of Brown, Boveri & Cie. Aktiengesellschaft Werk Dortmund“, which was published on June 1, 1947: „After overcoming the first difficult years, the facility was expanded further and further with purposeful work and its equipment was supplemented and perfected more and more.“

The company established itself at the Dortmund site, which was further expanded: The workshops were equipped with lifting devices so that pieces weighing up to 30 tons could be transported. The machinery was expanded so that repairs could now also be carried out on steam turbines, turbo compressors and transformers.

**First a repair facility, then industrial furnace construction**

A few years later, the opportunity to operate in industrial furnace construction was initiated; this was also a response to the growing demand in the immediate vicinity. From 1929, the company was active in the construction of annealing, hardening and melting furnaces for all branches of industry. At the same

time, the port area was massively expanded and, shortly before the start of the war, the municipal company was transformed into „Dortmunder Hafen AG“.

World War II came, and with it came severe destruction in the area around the port and at the port itself. The BBC site itself also saw heavy destruction, as can be read in the BBC document. In keeping with the circumstances, it was not a „commemorative publication“, as can be read in the document itself: „The completion of this first quarter of a century since the establishment of our facility falls in a period of general economic depression. The necessity of the times does not allow us to celebrate this day, which is so significant for us, in a special way. However, we would like to take this opportunity to inform all our customers, suppliers and friends of this anniversary and to express our sincere thanks to all those who have worked with us over these many years.“

**1,000 workers rebuild the site**

After the end of the war, the factory management, together with the old employees, set about rebuilding the facility. Work in all departments was successfully resumed for the

**Important milestones in furnace construction**

**1903** First induction channel furnace from ASEA

**1918** First electric arc furnaces from BBC

**1922** Founded as a repair facility for turbines, transformers and electric machines.

**1929** Expansion in Dortmund to include industrial furnace construction

**1967** Automatic casting starts on a DISAMATIC high-speed molding line.

**1967** The most powerful melting plant with 5x60t/21MW in mains frequency technology is built at GM/Saginaw, USA.

**1967** Thyristor converter technology is introduced.

**1972** The first induction heating plant for the forging industry is built.

**1979** The first tandem heating plant for Thyssen is built.

**1981** The world's largest heating plant with a throughput of 25 tons per hour is built.

**1987** The first 4-pipe heating plant for Krupp Gerlach is built.

**1988** ASEA and BBC merge to form ABB.

**1988** The world's first melt processor is introduced.



BBC 61 353

## Important milestones in furnace construction

**1992** The TWIN-POWER® principle with power splitting for continuous iron supply is introduced.

**1996** The world's first 16 MW inverter goes into operation in Gnutti, Italy.

**1998** The first melting plant with IGBT inverter technology goes into operation at Bischofswerke Lüdinghausen, Germany.

**2004** The first heating system with IGBT technology & zone control sets standards in the forging industry.

**2005** ABP Induction is founded from the Foundry business unit of ABB and Umformwerke Dortmund, under the umbrella of CM Acquisition.

**2008** 16MW high-performance furnaces for steel go into operation at NASCO in Saudi Arabia.

**2012** TISCO places largest order in history: 2 x 30t furnaces with 1 x 24MW, 6 x 65t furnaces with 3 x 42MW.

**2014** ABP builds first cross-field heating plant with a total output of 36 MW.

**2018** ABP was the first induction furnace manufacturer to unveil its digital strategy with the launch of myABP platform.

**2019** The MHI/Primetals Group takes over the company and the Dortmund site.



anniversary. This also applied to the construction of electric furnaces, which became increasingly versatile. After the war, about 1,000 workers were already back at work in the halls at Dortmund port to carry out the usual repairs and „to be largely active for the reconstruction through the new production of electric furnaces and electric motors for special purposes of all kinds“, as the document states. In the following years, the number of employees continued to grow: in 1959 there were 1,449 employees, including 96 trainees, and in 1963 there was a peak of 1,540 employees, including 120 trainees. By the end of the 1980s, the number of employees had fallen steadily to 793 (with 113 trainees) in 1987, shortly before ASEA and BBC merged to form ABB.

### Furnace construction expertise is brought together in Dortmund

Some technical innovations were developed, such as the introduction of thyristor converter technology in the mid-1960s. This is a switched semiconductor developed by ASEA, well suited for the MF inverter. The efficiency of the thyristor inverter is around 96 percent. BBC coordinated foundry furnace construction for the world market

from Mannheim. This did not change until 1981, when BBC Baden was closed and responsibility for the world market was transferred to Dortmund and BBC North-Brunswick. The merger of ASEA and BBC to form ABB in 1988 marked another turning point in both the company's management and personnel development. From then on, the company was decentralized and divided into three divisions: machine maintenance, service for electric machines and industrial furnace construction.

In 1988, the management of the furnace business was transferred to ABB in Dortmund, and with it the overall operational responsibility for production. Subsequently, a number of important technological innovations were developed in Dortmund, for example the TWIN-POWER® principle in 1992. That year also saw a restructuring at the Dortmund site, with a flat organization, program streamlining and outsourcing of steel structures. In 2005, the company then shifted its focus purely to furnace construction, with the establishment of ABP Induction from the ABB Foundry division, as mentioned above. Dortmund thus became the center of innovative induction melting and heating.