175 YEARS 1849 - 2024

PRECISION

1849 – 2024

FROM A MECHANICAL INVENTOR'S WORKSHOP TO A MANUFACTURER OF PRECISION TOOLS

175 years of Johs. Boss


JBO

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A DUTY TO OUR LEGACY

Dear readers,

Our company, Johs. Boss, is 175 years old.

Thank you for being part of our JBO family. Whether as an employee or a partner, we need you all.

In this little book to mark this anniversary, we would like to take you on a journey through 175 years of our history. Along the way, we will share some interesting facts and tell a few entertaining stories. No one is more amazed than us at how our company has developed from a little workshop in the Swabian hills to a globally operating business.

Our predecessors were engineering fanatics in the best sense. They were tinkerers and inventors, who constantly had to reinvent themselves and were obsessed with perfecting their products. Their success was down to their pioneering spirit, their ability and their will to think outside the box. They also actively sought out the opinions of dedicated employees and free spirits both within the company and beyond. They were innovative and pragmatic, never forgetting their obligation to the company's employees and their families.

We who are responsible for the company today have a duty to maintain this legacy. That is why we want to continue to enjoy your trust, whether as an employee or a partner on the global market.

We hope you enjoy this journey through 175 years of Johs. Boss.

Yours sincerely,

THE CRADLE OF SCALE MANUFACTURING

From Philipp Matthäus Hahn to Johs. Boss

A depiction of the area around the church in Onstmettingen from 1822

The family-run company Johs. Boss GmbH & Co. KG Precision Tool Manufacturer, with its JBO brand, is the oldest producing industrial business in the town of Albstadt and the Zollernalb region in south-west Germany. In 2024, the company can look back proudly on 175 years of history. Originally founded in 1849 as an "mechanical workshop for the construction of precision scales", the company has spent the last 100 years instead dedicated to threads. Today, its range of precision tools includes thread milling cutters, solid carbide tools, thread cutting and rolling dies, as well as precision thread gauges.

The first written record of the village of Onstmettingen is from the year 1064, but its history goes back much further. In 1403, the village became part of Württemberg, and therefore converted to Protestantism after the Reformation. The poor soils of the Swabian hills led to meagre harvests, while the distribution of estates made the farm-

ing areas ever smaller. As a result, many families were forced to find additional sources of income to escape their grinding poverty. As early as the start of the 18th century, there are records of many households producing simple scales at home. It was this knowledge that was then built upon by Philipp Matthäus Hahn, who arrived in Onstmettingen in 1756 and became known as the "mechanic priest". Hahn had a love of astronomy and precision mechanics. Even as a boy, he made his own telescopes and sundials. Together with his friend Philipp Gottfried Schaudt, a clockmaker and schoolmaster in Onstmettingen, he devised ever more complicated clocks and calculating instruments. Both men went down in history as the inventors of the inclination balance. Hahn worked as a priest in Onstmettingen from 1764 to 1770 and enjoyed the favour of the Duke of Württemberg. His collaboration with Schaudt, who passed on his mechanical expertise to many youngsters in the village, continued after his departure. Between 1770 and 1820, Onstmettingen therefore became the centre of precision mechanics in Württemberg and paved the way for the entire region's industrialisation. Every day, countless young men from the surrounding communities braved the hard walk to Onstmettingen. They sometimes walked distances of six to nine kilometres and 200 metres uphill in all weathers, all to complete their apprenticeships and later start their own businesses. Over time, this led to mechanical workshops opening in the surrounding area too. Onstmettingen can rightly call itself the cradle of the scales industry in southern Germany. The earliest record of a professional scale maker in the town is from 1820. Others followed. In its heyday between 1871 and 1900, most precision scales sold were made in workshops in Onstmettingen.

> "Onstmettingen can rightly call itself the cradle of the scales industry in southern Germany."

Johannes Boss
(1827 – 1906)

1

THE FOUNDER OF THE MECHANICAL WORKSHOPS

One of these pioneers in scale making was Johannes Boss (1827–1906), the son of Maria and Ludwig Boss. His father ran a mill in the Thanheim valley, just a few kilometres from today's company headquarters.

Ludwig's son Johannes chose a different career. He completed an apprenticeship in Onstmettingen at the gunsmith Ferdinand Sauter. One of the rifles he made in this period is still owned by the family today. After completing his apprenticeship, Johannes worked as a travelling craftsman, during which time he gained important experience for his own business later on. He spent time in the town of Pforzheim working for Ferdinand Oechsle, a renowned mechanic who invented the Oechsle scale. This device measures the density of grape must, making it possible to calculate the expected alcohol content of the future wine. Next, he worked at the university workshop in Darmstadt, which produced instruments for doctors and pharmacists.

His years as a travelling craftsman took him as far as Göttingen in northern Germany and all the way to Vienna. He was initially accompanied by Gottlieb Kern, who would go on to found the scale producer Kern & Sohn. The knowledge of scale making gained in this period encouraged and enabled the young gunsmith to open his own workshop upon his return at the age of 22 in today's Albert-Sauter-Strasse. The year was 1849.

A table clock made by Johannes Boss as his test piece in 1843, on display at the Philipp Matthäus Hahn Museum.

> He also created a machine for cutting noodles, simply because he enjoyed eating them in his soup.

The young businessman mainly produced precision scales based on the design of the now famous Philipp Matthäus Hahn. But the talented inventor tried his hand at other products too. A table clock he designed as his test piece is today exhibited in the Philipp Matthäus Hahn Museum in Onstmettingen. He also created a machine for cutting noodles, simply because he enjoyed eating them in his soup. Alongside precision scales, he made whatever his customers needed, from sewing machines to rifles. His ideas influenced the production portfolio all the way to the start of the First World War.

Noodle cutting machine

Hohenzollern Castle

There is an anecdote about Ludwig Boss, Johannes' father, that is still told to this day. The mill owner had draft horses. As work began on the construction of Hohenzollern Castle in 1850, the construction manager seized two of his horses and promised to return them once the work was complete. When this happened, it was clear that the emaciated horses had been so maltreated that they were no longer fit to work. But Ludwig Boss cared for them for the rest of their lives nonetheless.

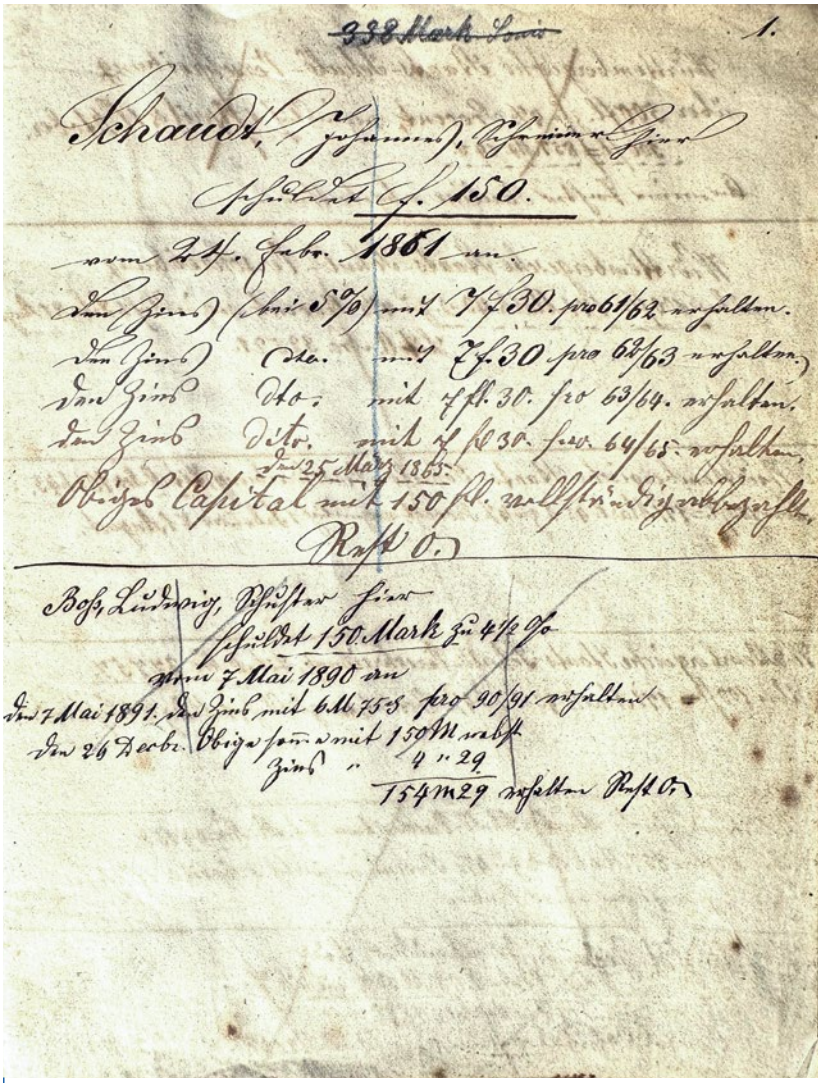
Johannes Boss became a precision mechanic and set up his own business in the village producing precision scales and weights, which soon gained a reputation for reliability. The sign placed above the door to the workshop around 1889 read "J. Boss, Mechanikus". The designation "Mechanikus" indicated that this was the workshop of a specialist, comparable to a modern day engineer – although this term and field of study did not exist at the time.

One of the lathes used at the workshop

Barometer
It was believed that if the level of mercury reached the bottom area, there was a risk of earthquakes.

Left to right: Karl, Johannes and Louis Boss with employees at the workshop in Wilhelmstrasse, around 1889.

Business boomed in this period. So well, in fact, that Johannes Boss was able to grant loans to the people of Onstmettingen, as the village lacked a bank. Boss kept a loan book for these transactions that also listed the agreed rate of interest. The village's first bank was founded in 1893 by a consortium of 49 people including Louis Boss.



The first page of Johannes Boss' loan book from 1861.

On 1 October 1866 at the industrial exposition in Reutlingen, Johannes Boss was awarded a "Document of commendation for diligence and specialism".

Seine Majestät der König

haben dem Herrn

J. Boß,

Mechaniker in Onstmettingen,

nachdem derselbe die im Monate Mai und Juni

zu Reutlingen stattgehabte

Industrieausstellung des Schwarzwaldkreises

beschickt und die Prüfungs-Commission die

vertretenen Leistungen wegen

sorgfältiger Arbeit und Specialität

zur besonderen Belobung vorgeschlagen hat, ein

Belobungsdocument

gnädigst zuerkannt,

welches mit Gegenwärtigem ertheilt wird.

Stuttgart, den 1 October 1866.

Königl. württemb. Centralstelle

für Gewerbe und Handel:

Steinbeis

Fuchs

Document of commendation, 1866

Seine Majestät der König
haben gnädigst zu genehmigen geruht,
daß der Firma
Johs. Boss, Mechaniker
in Onstmettingen,
nachdem dieselbe die im Sommer 1871.
in der Stadt Ulm stattgehabte
Schwäbische Industrie-Ausstellung
beschickt und die Prüfungs-Commission
die vertretenen Leistungen wegen
anzuerkennenden Fortschritts in Anfertigung
von Theilmaschinen und Waagen
als verdienstlich begutachtet hat, die
gewerbliche Fortschritts-Medaille
ertheilt werde,
worüber gegenwärtige Urkunde ausgestellt wird.
Stuttgart, den 6. Januar 1872.
K. Württ. Centralstelle
für Gewerbe und Handel.
Steinbeis

Certificate of the King Karl medal, awarded in 1872

In 1872, he was awarded a King Karl medal for advanced manufacturing. The small workshop was becoming an industrial factory.

The accolade was signed by Ferdinand Steinbeis, who was the minister for the economy in the Kingdom of Württemberg at the time and gave his name to the Ferdinand Steinbeis Foundation and a number of educational institutes.

When managing his business, Johannes Boss constantly had an eye on the future. By the time of his death in 1906, his son Louis Boss (1850–1939) had already been working by this father's side for many years.

The workshop also made indexing heads.

“His Majesty the King has most graciously requested that the establishment Johs. Boss mechanical workshop in Onstmettingen be awarded the Medal of Commercial Progress, as presented in this certificate, following its demonstration at the Swabian Industrial Exposition in the city of Ulm in the summer of 1871, and having been deemed meritorious by the Inspection Commission on account of the demonstrably advanced nature of its prowess in the manufacture of machinery and scales.”

Stuttgart, 6 January 1872

Louis Boss
(1850 – 1939)

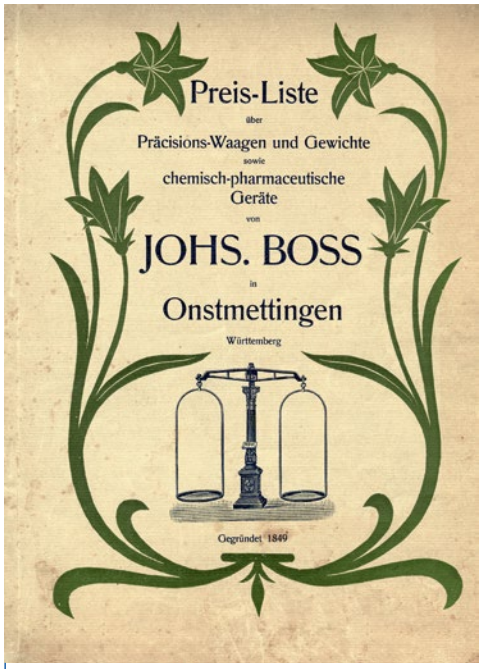
2

FROM WORKSHOP TO FACTORY

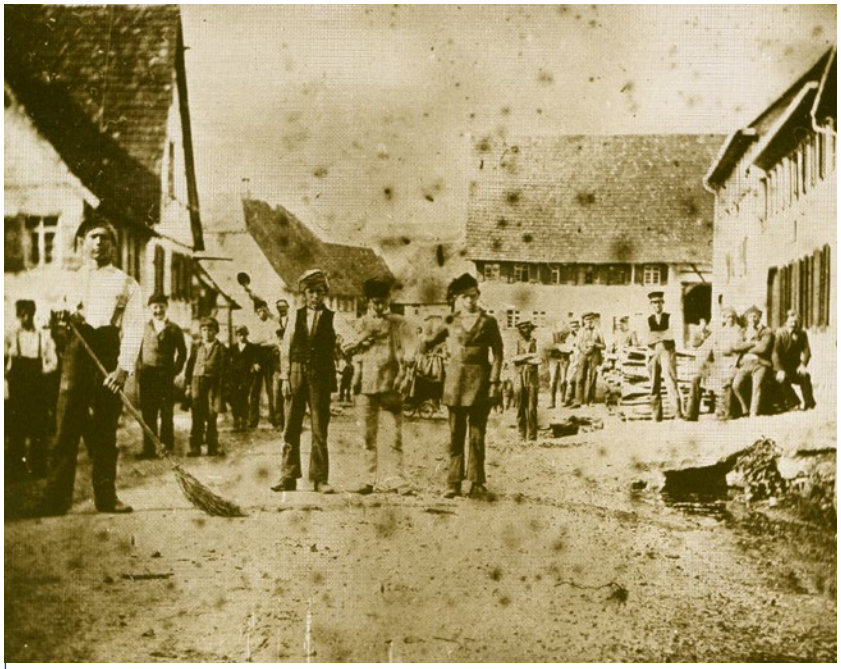
At the age of 20 in 1870, Louis Boss entered the company at a time of strong growth. The business recorded its first export orders, even if at that time, export simply meant selling goods beyond the borders of Württemberg. After outgrowing the workshop on Albert-Sauter-Strasse, the company purchased a second workshop on Wilhelmstrasse in the same year. It had also began manufacturing machines for making pills and suppositories. The commercial register entry from 6 April 1886 accurately describes the precision engineering workshop's main area of activity: "Johs. Boss manufacture of precision scales and weights, chemical and pharmaceutical utensils".

Louis Boss was not only a good engineer, but also an enthusiastic photographer and pianist. He was a first person in the village to own a camera and a piano. A music book that he wrote, entitled "Louis Boss, mechanic and musician, Onstmettingen 1869" survives to this day.

Louis Boss with family



Catalogue, 1895

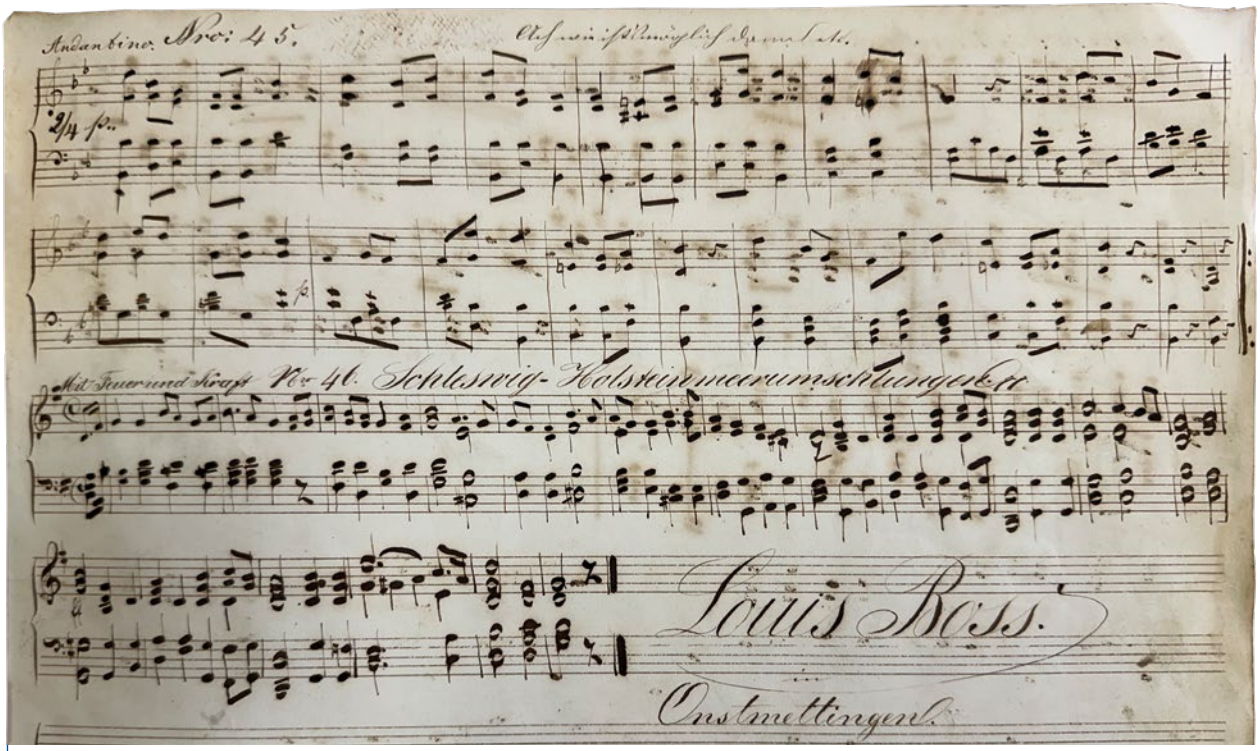


Probably the oldest photo of Wilhelmstrasse, with mould stains.

The train station in Onstmettingen

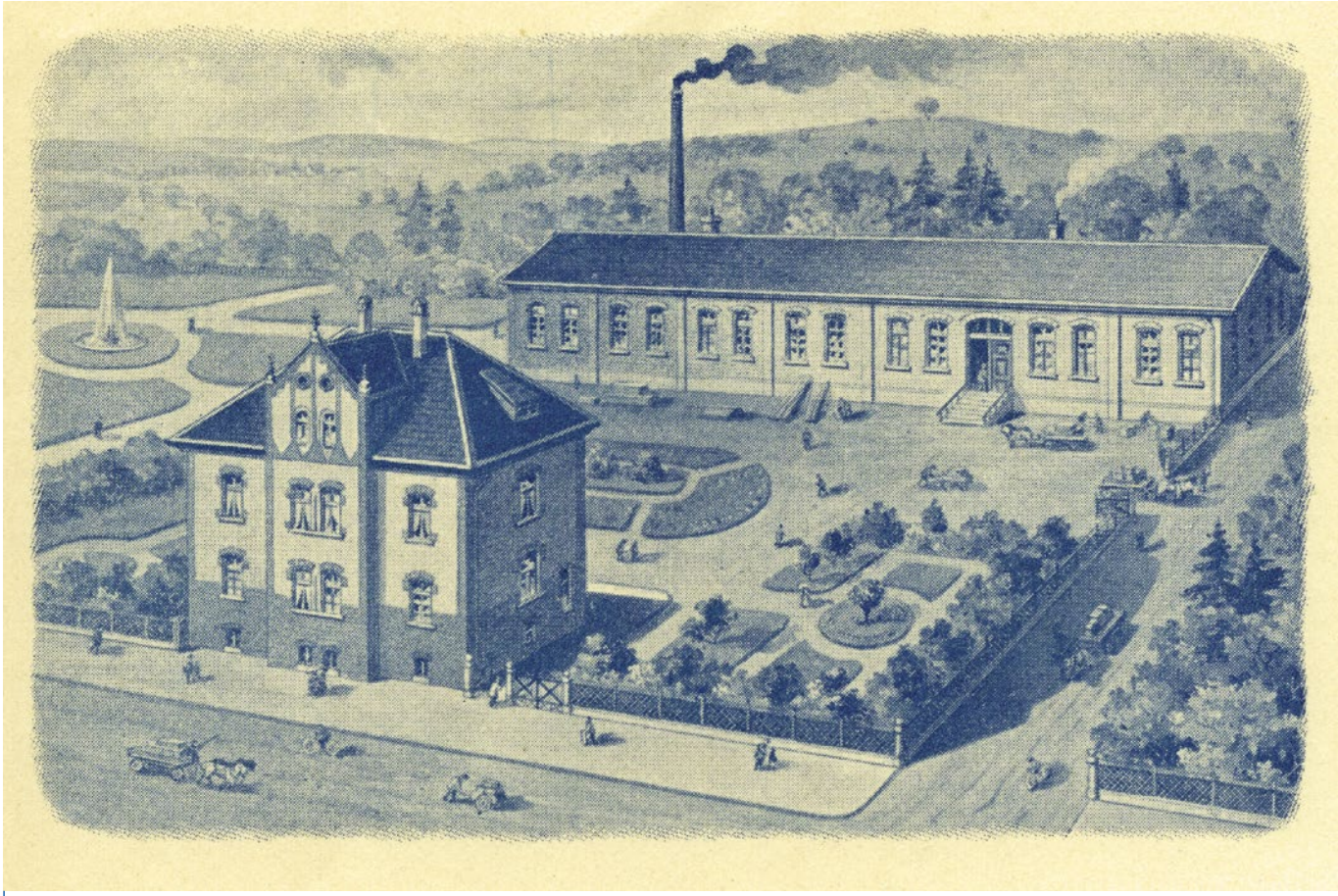
The Ebingen-Onstmettingen valley railway was built by the Württemberg Rail Company and opened on 14 July 1901. The following year, it transported 100,000 people and 15,000 tons of freight.

Before the railway, the company had to take its products to the station in Ebingen via horse and cart.



Music book written by Louis Boss.

The business continued to grow. In 1904, construction began on a factory and residence at Schwabstrasse 26, the latter of which became known in the community as the "Red Villa". Company founder Johannes Boss lived to see the inauguration in 1906. The previous workshops were closed. In 1904, Louis Boss' son Karl (1874 – 1935) joined the business, representing its third generation. The company now employed 15 people. Karl Boss was also a trained mechanic and, like his grandfather Johannes, worked as a travelling craftsman on the way to Vienna.



Excerpt from the company letterhead in 1905 showing the "Red Villa"

The "Red Villa"

If you were to ask one of the company's employees at this time where they worked, they would have proudly said: "I work at the Red Villa." By this, they meant the factory where the "Red Villa" residence was located. It was built between 1904 and 1906 mostly by Italian specialists. With its red and yellow bricks, it has retained its splendour to this day. In that time, it has gone through a number of highs and lows. Just a few years after its construction, it was renovated to switch both the gas lighting and gas-powered drive motor to electricity. A powerful earthquake in 1911 destroyed the beautiful decorations on the roof of the house. This was followed by the earthquake of 1943 and another in 1978 that destroyed the gable wall. The "Red Villa" always housed multiple generations of the family. An officer was quartered here during the Second World War, while the ground floor also housed refugees from the former German territory of Königsberg (modern day Kaliningrad) from 1944. Office spaces were set up in the ground floor in the early 1960s. All generations of the family, from the second to the sixth and seventh, have lived at the property to this day.

Louis (front, centre) and Richard Boss (rear right) in the garden at the "Red Villa"

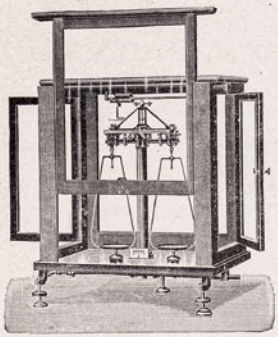
The workforce in 1904 with Karl and Louis Boss (left to right)

Precision scales continued to form the main focus of the business. The pharmacists scales used for chemical analysis achieved a precision of up to one ten-thousandth of a gram (0.0001 g). Production of the other products listed in the commercial register entry also continued. What had changed, however, were the production methods. The switch from a gas-powered to an electric motor that drove all the machinery in the workshop via a transmission was one of the first modifications to be made in the "Red Villa".

Left to right: Family picture in 1906 with Louis, Johannes and Karl Boss

Left to right: Louis and Karl Boss with employees

Chemisch-analytische Waagen.

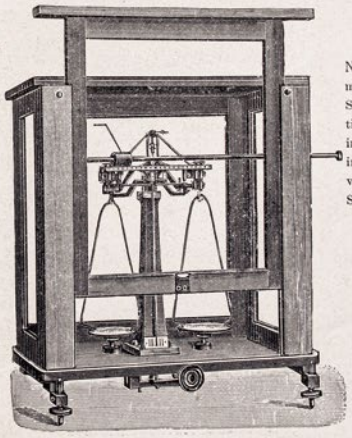


No. **5.** **Analysen-Waage** (System Bunge) mit kurzem Balken und sehr langer schnellschwingender Zunge. Lager und Schneiden von Achat. Arretierung mit Kurbelbewegung. Der Reiter hebt sich senkrecht ab, die Kante des Reiterlineals liegt genau in der Achsenebene.

Waagbalken aus Messing vergoldet, Schalen vergoldet oder platiniert. Glaskasten auf starker Glasplatte montiert.

Empfindlichkeit 1/5—1/10 Milligramm.

Tragkraft	50	100	200	500	Gramm
Balkenlänge	11	13	15	17	Centimeter
Preis	190.—	200.—	220.—	270.—	Mark



No. **6.** **Analysen-Waage** (System Bunge) mit kurzem Balken und langer Zunge. Lager und Schneiden von Achat. Mittellager fest. Die Arretierung der Compensationsgehänge bewegt sich im Schwingungsbogen des Balkens. Reiterlineal in der Achsenebene. Schalen platiniert. Balken vergoldet. Kasten aus Nussbaumholz auf schwarzer Spiegelglasplatte montiert.

Empfindlichkeit 1/5—1/10 Milligramm.

Tragkraft	200	500	Gramm
Preis	185.—	200.—	Mark

No. **7.** **Dieselbe Waage** mit durchbrochenem Messingstativ

Tragkraft	100	200	500	Gramm
Preis	195.—	210.—	235.—	Mark.

Catalogue excerpt from 1895

Karl Boss
(1874 – 1935)

3

FROM SCALES TO THREAD CUTTING TOOLS

The outbreak of the First World War in 1914 led to some hard-hitting changes. Precision scales were mostly made from brass. But the war effort meant that this material was now required to make munitions. There was also suddenly a massive demand for tools. Karl Boss had to react quickly. He decided to switch to producing thread cutting dies for producing external threads – a strategic decision that has continued to shape the company to this day.

By the time this change was made, Karl Boss had long assumed responsibility for the company. According to a commercial register entry, Louis Boss formally handed over the management of the business to his son Karl in 1917. Then as now, the transition to the following generation went smoothly. Karl's father Louis continued to work for as long as his health would allow, in a way that has always been typical of family business owners.

Building up the production facilities for thread cutting dies was a major challenge. Particularly difficult were the switch from brass to steel processing and the hardening of the tools. In the initial period, the company experienced extraordinarily high reject rates due to cracks that arose during hardening.

Back then, Johs. Boss was not the only or biggest company in Onstmettingen that produced cutting dies. In these early years, every worker produced around 50 dies per week. As these were generalists rather than specialist workers, they performed every step of the process themselves.

By the end of the war, the business employed around 20 people, each working 48 hours a week. Including overtime, they would quickly reach 55 to 60 hours a week, at an hourly wage of 48 to 64 pfennig.

The business took off and the company grew. But the inflation caused by the war posed ever greater problems to businesses and workers alike. The high point of this crisis was the hyperinflation of 1923. Prices rose every day and achieved astronomic levels. At Johs. Boss, things got so bad that workers were paid their wages daily, which their wives then spent immediately on everyday goods.

The subsequent currency reform, which converted 1,000,000,000,000 marks to 1 rentenmark, ended the crisis. The following period of growth for both Germany and the global economy, known as the "Golden Twenties", also saw an upturn in fortunes for Johs. Boss. The workforce had grown to around 28 employees by the time the effects of the Wall Street Crash of 1929 began to be felt in Onstmettingen. Between 1929 and 1932, working times at the company were sometimes reduced to just a few days every month.

The economic crisis in Germany created millions of unemployed and hastened the downfall of the Weimar Republic. As the National Socialists took power in 1933, a powerful force swept through the country. As the global economy regained growth and Nazi Germany geared its economy towards rearmament, the company's order books began to fill once again. Karl Boss lived to experience this for two more years before his death in 1935.

The factory on Schwabstrasse

Richard Boss
(1912 – 1993)

4

WARTIME ECONOMY AND RECONSTRUCTION

> The company's only vehicle, the director's BMW, had to be handed over to the Wehrmacht together with a chauffeur.

After training to become a mechanic at the family business, Richard Boss (1912 – 1993) successfully passed his master craftsman's examination before receiving additional commercial training. This prepared him for his future role in managing the company, which came much earlier than expected. Following the sudden death of his father in 1935, he was forced to take over and run the company at the age of just 22. This was the same age as Johannes Boss when he founded the family business in 1849.

The technological opening of competing businesses during the Third Reich allowed Johs. Boss to learn about and introduce thread milling technology. The company employed 30 people in 1938, including around ten mechanics, ten trained workers and eight apprentices. The business produced both thread cutting dies and die stocks.

The following year saw the outbreak of the Second World War. As Johs. Boss was seen as vital to the war effort, many of its employees were spared conscription. The company's only vehicle, the director's BMW, had to be handed over to the Wehrmacht together with a chauffeur. But there was no chauffeur at the company. This meant Richard Boss had to drive the car himself to Ulm. Upon arrival, the army wanted to commandeer both the vehicle and its driver. He convinced the officers against this by explaining that, as the head of an important company for the war effort, he had to return home immediately. But he couldn't fail to notice how the soldiers had cut open his beautiful new car and fitted it with a flatbed.

The workers who were sent to the front line were initially replaced by women. Later, as was the case throughout the German economy, the business put prisoners of war to work in production.

The end of the war brought yet another dramatic watershed. Even before French soldiers marched into Onstmettingen on 24 April 1945, the company was frequently forced to stop production due to power cuts. The working hours lost were made up during the night. The company's production machines then stood still for several months. As businesspeople were recommended to join the Nazi party, Richard Boss was forced to work in a forest following the end of the war. Only after this was he allowed to reassume his position at the company.

The workforce during the war, around 1939

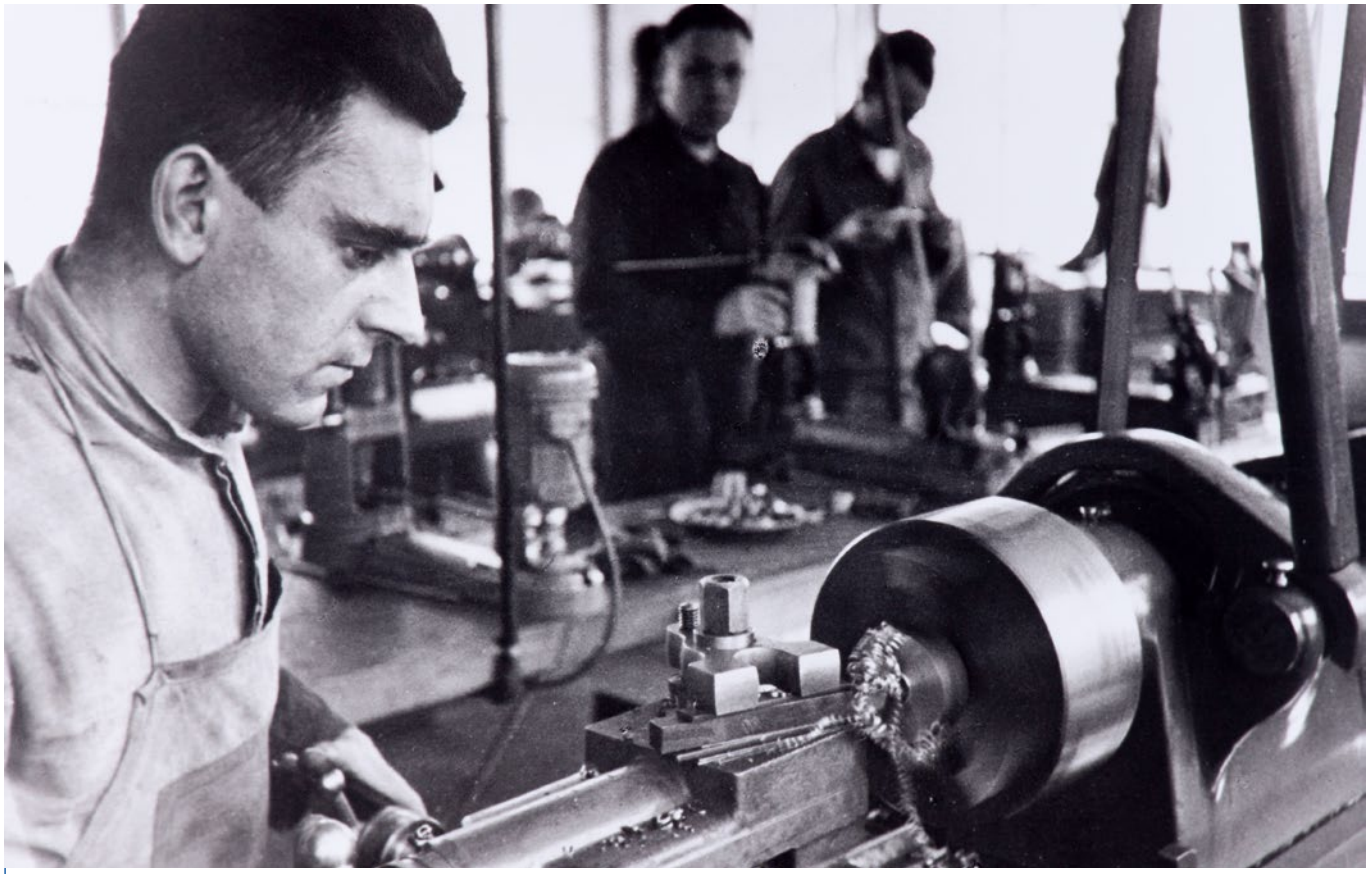
The victorious powers took anything they wanted from the company's assets. In the period following the war, the business therefore suffered mainly from the loss of machinery and tools. Although the French allowed the restart of production in March 1946, the business lacked machinery and steel. In late 1946, the Allied Control Council in Berlin authorised the complete liquidation of the company, and its fate appeared to be sealed. There was even a delegation from India that travelled to inspect the business together with a French control officer from Schwenningen. But Richard Boss and his 25 employees never gave up. They secretly transported machinery and equipment on a heavy flatbed truck to a quarry and hid it there. Heinz Meintel, who back then was an apprentice mechanic in his first year of training, remembered how small machines would suddenly appear in the production hall when orders had to be processed, only to disappear just as quickly overnight. This game of cat and mouse went on for some time. When the French representatives once again came to collect another machine, they were cleverly tricked by Richard Boss, master craftsman Wilhelm Thoma and thread grinder Karl Conzelmann. Instead of taking the new and modern Lindner FS 30 thread grinding machine that was vital for processing orders, they were deceived into taking an older version that had been highly praised by employees. This struggle did not end until 1949, when the liquidation order was lifted.

Celebrations for the company's 100th anniversary

“The post-war period was a time of optimism and invigoration The 100th anniversary was celebrated in style in 1949 at the Traube tavern in Onstmettingen.”

“Three Generations in Conversation” – a theatre performance by JBO employees.

Karl Conzelmann, grandfather of Eric, who is the fourth generation of his family to work at Johs. Boss.



Production in the 1950s

Day-to-day business remained difficult for a long period. The workshop was heated with a coke oven until 1949 when central heating was installed. Advances came in the form of new machinery and the switch from transmission to individual drive. The gas required for heat treatment was in short supply. As a result, hardening took place at night, as this was the only time that the gasworks could supply the business for this energy-intensive process. Over time, the situation gradually improved. This was particularly apparent in the growth of the workforce, which rose to 55.

Richard Boss maintained good relations with customers and business partners. One of his greatest achievements was the setting up of the sales department in the early 1950s. He developed a group of representatives based on an existing network of contacts, made up of family-managed manufacturers of complementary precision tools. Having seen the signs of the times, Richard Boss' actions led to further growth and constantly rising sales.

1956 marked the start of a new era that would have a decisive influence on the business to this day. A group of mechanics from various businesses came together after hours to work overtime together to switch the machines from transmission to individual drive. Richard Boss noticed one young and proficient master mechanic in particular: Rudolf

Catalogue from around 1952

Conzelmann. In July, Boss hired Conzelmann to train the nine apprentices. This turned out to be a stroke of luck for the period of rationalisation and automation that lay ahead. Under Conzelmann's leadership, a separate automation department was set up in 1958, and he skilfully involved the apprentices in these complex tasks. Initially, the business produced semi-automated machinery.

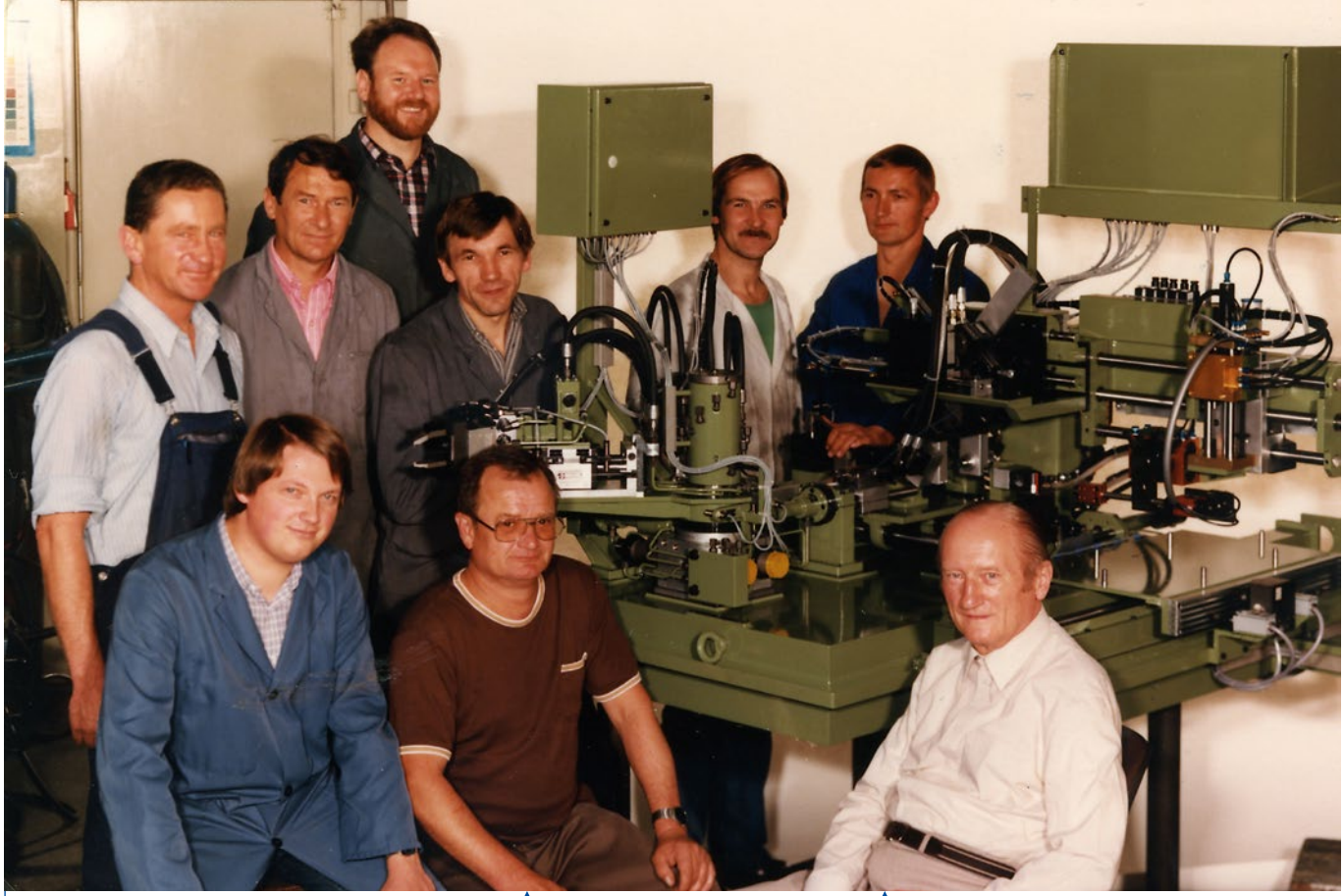
Onstmettingen – a place of inventors

As mentioned previously, Onstmettingen is the cradle of the scales industry in southern Germany. For decades, it was known as the centre of precision mechanics in the Kingdom of Württemberg. It was Philipp Matthäus Hahn, the "mechanic priest", who lit the initial flame. In the decades that followed, many men in the village took their chance. They were young, brave and inquisitive tinkerers, just like Johannes Boss.

Another inventor, the physics professor Max Auwärter, moved his laboratory belonging to the company Heraeus from Hanau in central Germany to Onstmettingen during the Second World War. Auwärter researched thin-film technology. But he lacked the funds to achieve his dream of his own business. After solving an alloying problem for the company Hohner in Trossingen, he gained contact through them to Franz Joseph II, Prince of Liechtenstein, who was planning to industrialise his country. This led to the founding of Balzers, which developed rapidly and is today part of the Surface Solutions segment of the Oerlikon Group, which coats tools for Johs. Boss.

Richard and Heinz Boss

MECHANICAL ENGINEERING AND AUTOMATION



Left to right: Master craftsmen Rudolf Conzelmann and Richard Boss with their mechanical engineering team, 1983

Richard Boss' son Heinz began his career by training to become a mechanic at the family business. After studying mechanical engineering in Konstanz and working for a year at the grinding machine manufacturer Reishauer in Zürich, he returned to Johs. Boss in 1962. Here he took responsibility for production engineering, where his developments included a brand new kind of taps for producing thread cutting dies and later also for thread ring gauges. The mathematical knowledge he gained in his degree allowed him to solve complex problems in tool engineering, such as calculating the distortions that arise through the milling of spiral-shaped threads with grooved thread milling cutters precisely to the micrometre.

The mechanical engineering under Rudolf Conzelmann was specially geared towards serving the needs of Johs. Boss, and continued to grow. Of particular note were the automatic grinding machines for tooth faces, chamfers and spirals. The company produced the controllers for all of these special machines itself. Mechanical engineering also turned into an additional source of business. Above all, it was the special machine for producing thread cutting dies that gave Johs. Boss a major competitive advantage.

“Former employees have fond memories”

The name **Rudolf Conzelmann** is synonymous with mechanical engineering and automation. With his unwavering dedication, he never failed to find ways to improve work processes. Although he marked the end of every working day with a bottle of beer, he never truly stopped working himself. He would occasionally continue to work on problems at home, brooding for as long as it took for inspiration to come to him. His wife once asked him: “Why have you been staring for so long out the window?” “I’m working on a machine”, came the answer. As a result, it generally only took him a few weeks to create all the necessary design drawings, before getting to work with his colleagues and apprentices in the department.

Conzelmann was not only a great thinker, but also a great smoker. He would often smoke an entire packet of cigarettes on the journey to the Mustermesse trade fair in Basel. But his interests were in no way limited to his work. At the wedding of the company’s current managing director Melanie Boss, he gifted the bride a mandarin tree he had grown himself, which continues to bear fruit all year round today.

Rudolf Conzelmann joined the company in 1956 and stayed until retiring in 2006. This was surely one of the best decisions that Richard Boss had ever taken. His achievements in automation and mechanical engineering continue to be felt today. Many of the machines built under his guidance are still in service.

Adolf Meintel, who began his apprenticeship in 1958 before working in the mechanical engineering for ten years and then switching to tool production, has fond memories of his training. Back then, the team worked extremely long and hard, and not just Monday to Friday. They spent Saturday mornings cleaning the machinery, before writing the reports required for their apprenticeships. This left little in the way of free time.

Four generations in the company

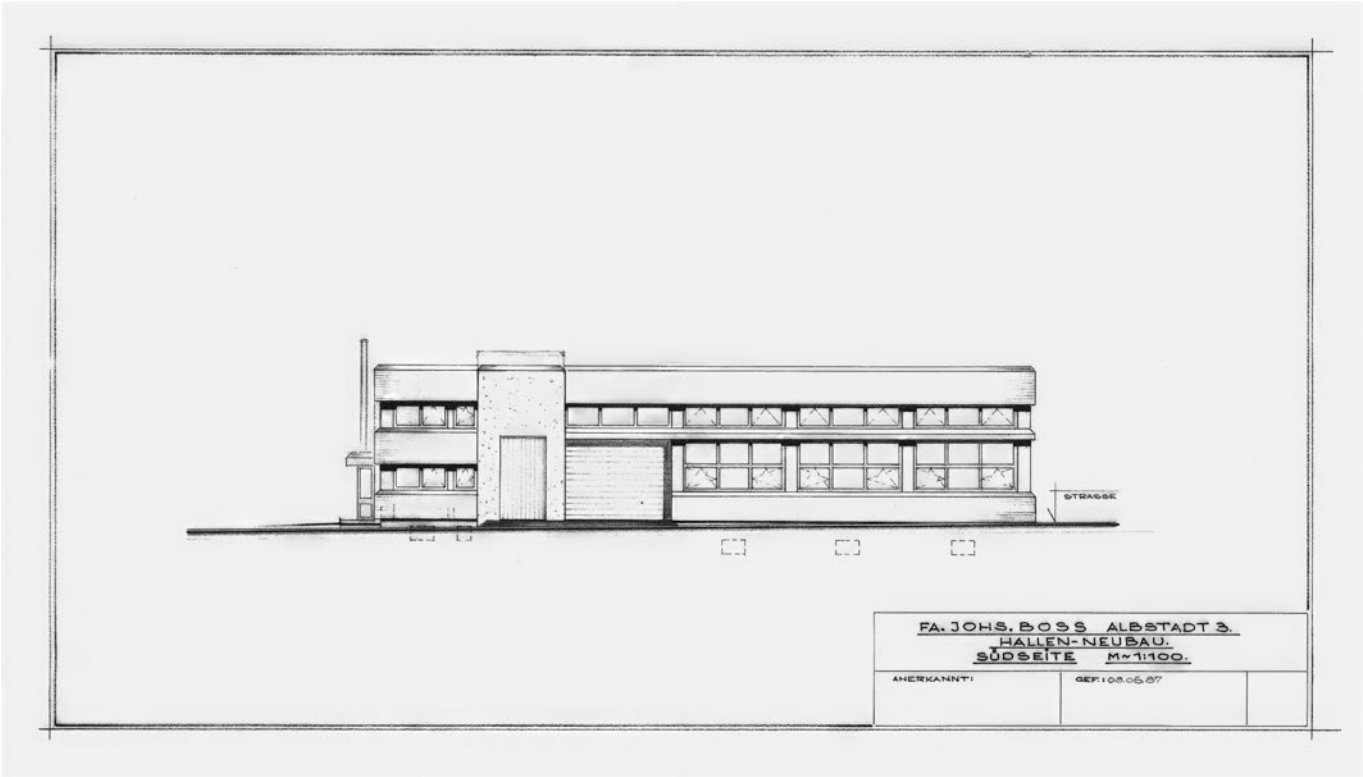
The Conzelmann family have been among the most loyal of JBO's employees, with four successive generations working at the company. They were Head of Tool Development Eric Conzelmann, master mechanic and Head of Department Erich Conzelmann, and the mechanics Karl and Karl Ludwig Conzelmann.

The company building in 1968

Automation brought both massive time savings in production and a major increase in quality. This was decisive, as innovations in external thread processing made the company vulnerable to stagnating demand on the global market. Through a combination of rationalisation and constantly improving quality, Johs. Boss continued to grow and succeed against its competitors. After seeing off local competition that quickly gave up, the company fought its way to the top of the international market too. JBO became the market leader for thread cutting dies in Europe.

Heinz Boss remembers how he would sometimes "coincidentally" meet with Head of Production Erich Conzelmann and Rudolf Conzelmann to discuss a machine that was no longer producing economically. In these joint brainstorming sessions, they designed a groundbreaking machine technology that is partially still in use today in single or double-shift operations 50 years later.

As time passed and requirements changed, it became clear that the company's building on Schwabstrasse was no longer



The plan for the mechanical engineering building in 1988

fit for purpose. This led to the construction of a new, two-storey building on today's Johannes-Boss-Strasse in 1968. Two more storeys were added a decade later. In 1988, a separate building was constructed for mechanical engineering. This expansion was also the result of the growth in this business sector. The company now employed over 100 people.

Richard Boss died on the morning of Christmas Eve 1993 as he was preparing to go to work. Just like his predecessors, he worked at the company until the very end.

Alongside his business activities, Richard Boss spent 34 years as a member of the supervisory and management boards of Onstmettinger Bank, where his word carried great weight. When among friends, he would often sit at the piano and play the pop hits of the day.

Heinz Boss

5

MASTERING THE THREAD

EMO 1985

Heinz Boss had assumed responsibility for the business long before his father's death. The recession of the early 1980s and the following technological shift towards CNC machines had a lasting affect on the company's only product – thread cutting dies.

At a visit to a trade fair in 1984, Heinz Boss asked a good customer what he needed urgently. The answer was clear: "Okay, make me 20 M6 thread plug gauges." This was the spark that led to the production of thread gauges. The company added a comprehensive range of these products to its production and sales portfolio. 30 years later and after multi-million-euro investments, this product group now makes up the majority of JBO's sales.

Heinz Boss still remembers this decision in 1985: "Looking back today, it is almost unbelievable that we had the courage to produce thread gauges and were so successful in doing so. There was already a large thread gauge manufacturer in Germany at the time. In order to be competitive, we needed rationalised and temperature-controlled production, with the most modern and precise fully automated machinery and outstanding specialists.

Good things come in threes, and the introduction in 1985 of the IBM 36, the world's first multi-user computer system, was the icing on the cake for JBO. Sales, bookkeeping, payroll and product calculation went digital – a massive step forward.

That year also saw JBO exhibit at a trade fair with its own stand for the first time at the EMO in Hanover. JBO has returned for every exhibition ever since.

Linear and rotary units, which the company had manufactured in its automation division since the 1960s to rationalise its

Heinz and Renate Boss – 20 years together at trade fairs. Renate Boss is a personally liable shareholder.

Product groups in 1997 (Drill thread milling cutters, 2000)

own production, became a permanent part of the sales portfolio. Production of special machinery for customers ceased. To this day, these automation components continue to provide work in the mechanical engineering alongside the MultiCheck thread gauges.

In 1997, JBO was certified according to the DIN EN ISO 9001 standard in development, manufacturing and sales.

In that same year, following the spread of CNC-controlled processing machines, Heinz Boss decided to revive the production and sale of thread milling cutters. The success was immediate and within a short period, the quality of the thread milling cutters saw JBO catch up with the global market leaders. The range of thread milling cutters is the most comprehensive on the market, and is currently the strongest growing area in terms of sales.

EMO 1993

The rifle made by company founder Johannes Boss.

> “JBO celebrated its 150th anniversary in the Onstmettingen festival hall in December 1999.”

A surprise performance by employees

The celebration for the 150th anniversary

"Three Generations in Conversation" about everything from the company founder to personal anecdotes.

Heinz and Melanie Boss

56

MODERNISATION AND GLOBALISATION

In 1999, coinciding exactly with the company's 150th anniversary, Heinz Boss' daughter Melanie became the sixth generation of the family to join the company. She had just completed her degree in industrial engineering and spent a year working for MTU in Friedrichshafen and London.

That same year, the company purchased a license to produce drill thread milling cutters. This tool combines the processes of drilling, counter sinking and thread milling. Drill thread milling cutters and combination tools were added to the product portfolio in the year 2000.

This was followed by a gradual expansion of production capacity and the construction of additional production halls at the company's premises in 2002 and 2008. This made it possible to combine the warehouse and shipping in a single storey, creating space for an open-plan office and a modern break and training area.

International sales were energised by participation in international trade fairs, visits to dealers and the establishment of exclusive representations abroad. JBO is now present in over 60 markets around the world. Since 2008, marketing has been setting new benchmarks with the JBO catalogue, the new trade fair stand and the company website. Melanie Boss is a naturally born organiser who can turn her hand to anything.

In 2013, the company began producing carbide tools (PCD, CVD-D and PcBN). The introduction of the new line of innovative SHARK thread milling cutters in 2021 has helped JBO achieve a leading position on the global market.

A view of the new, modern production hall.

Happy 80th birthday: Heinz Boss is gifted his "own" street.

Between 2004 and 2014, Melanie Boss and her husband Sven Blickle were an experienced team who complemented each other brilliantly in the business. Sven Blickle was first Head of Development then Head of Technical Sales and Head of IT. He lost his life in an avalanche.

2019 saw the commissioning of the third production and technology hall, which featured air conditioning. This has opened up new options for JBO to expand beyond the current workforce of 160.

JBO's calibration laboratory for thread gauges has been accredited in line with DIN EN ISO/IEC 17025:2018 since 2021.

A photovoltaic system generating 280 kWp was also added in 2024. Together with a second central plant for cleaning and tempering grinding oils, this has allowed JBO to massively reduce its carbon footprint.

Tool development consistently focuses on optimising existing products, as well as developing a new, future-proof JBO product to keep up with technical transformation.

EMO 2023

CELEBRATIONS AND TRIPS AT JBO

Lochmühle, 2015

Meersburg on Lake Constance

Mehliskopf, 2017

Triberg near Freiburg, 1937

Schwägalp-Säntis, 1960

Retirement celebration for Hans Schlachter and Erich Conzelmann, 2006

Stand-up paddling in Tübingen, 2016

Inauguration of hall 2, 2008

Barbecue, 1986

Advent celebration in the new hall 3 and technology hall, 2019

Go-kart race, 2005

Demolition celebration, 2002

THANK YOU.
NOW WHAT LIES AHEAD?

JBO is well prepared for the future.

She may only be nine years old today, but maybe one day Svenja will become the seventh generation of the family to work at our company. Among the questions in the friendship books that she and her friends exchange is: "What you want to do when you grow up?" Her answer is always: "Work at mum's business and be an artist at the weekends."

But we can also look back at our history with pride and satisfaction. Our skilled and dedicated staff have been a huge part of our company's successful development, as have our loyal and cooperative customers. Without the interaction of all these different parts, JBO would not have been able to overcome the obstacles it has faced in the last 175 years. We owe a debt of gratitude to you all and want to use this truly unique occasion to express this.

To maintain our success in future, we are devoting all our efforts to acting according to our values and carrying forward our motto of "experience, reliability, quality and innovation".

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175 YEARS OF JBO:
THE THREAD OF SUCCESS AND PRECISION