



**100 YEARS**  
1922–2022  
**WOERNER**



# 100 YEARS OF EUGEN WOERNER GMBH & CO. KG

**A family company in its third and fourth generation**



100 YEARS OF  
EUGEN WOERNER GMBH & CO. KG  
A FAMILY COMPANY IN ITS  
THIRD AND FOURTH GENERATION



# FOREWORD



**ALEXANDER KÄRCHER** | Managing Director

Wertheim, July 2022

In short, our job at WOERNER is to continue the legacy of a brilliant inventor. It all began with my great-grandfather Eugen Woerner embracing the principle that “there is always room for improvement”. This was the initial idea from which the current EUGEN WOERNER GmbH & Co. KG was born.

Having begun his career at the already world-famous company Bosch in Stuttgart, Eugen Woerner became self-employed at the beginning of the 1920s – and so began our success story.

Not only did my great-grandfather work passionately on oilers and lubricators, but he also developed a chainless cycle driven by pedal levers. The success spoke for itself. The chain driven bicycle industry resisted this vehemently and, in the end, prevailed. But Eugen Woerner bounced back from this. He decided to focus on what he was best at – central lubrication technology. True to the motto of delivering “the right amount of lubricant to the right place at the right time”. This was and is still the right approach, today more than ever before.

Over the decades, the company successfully faced countless challenges, continued to grow, adapted to the sales markets and conjured innovative products out of a hat: We either developed them ourselves or in collaboration with the customer. To this day, our range includes products that were developed over 50 years ago – and that still meet our customers’ high requirements.

Since its foundation, WOERNER has represented quality and customer satisfaction. Together with our employees and global partners, we have been able to cope with every crisis and project so far. I am convinced that we will continue to succeed in doing this in the future too. We can look back on an impressive history with highs and lows. But we also face an exciting future with new challenges, such as digitalisation, sustainability and new customers. We need to learn from the past and, on this basis, make the best possible decisions for the future of everyone at WOERNER.

I don’t want to pre-empt too much. On the following pages, you can read about the exciting history of our company, which celebrates its 100th anniversary this year. Together with my siblings, I am very proud to take the helm in the company’s fourth generation, and look forward to an exciting future. It won’t be easy, but we will rise to the challenge.

Kind regards,

A handwritten signature in blue ink, appearing to read 'A. Kärcher', written in a cursive style.

Alexander Kärcher, Managing Director



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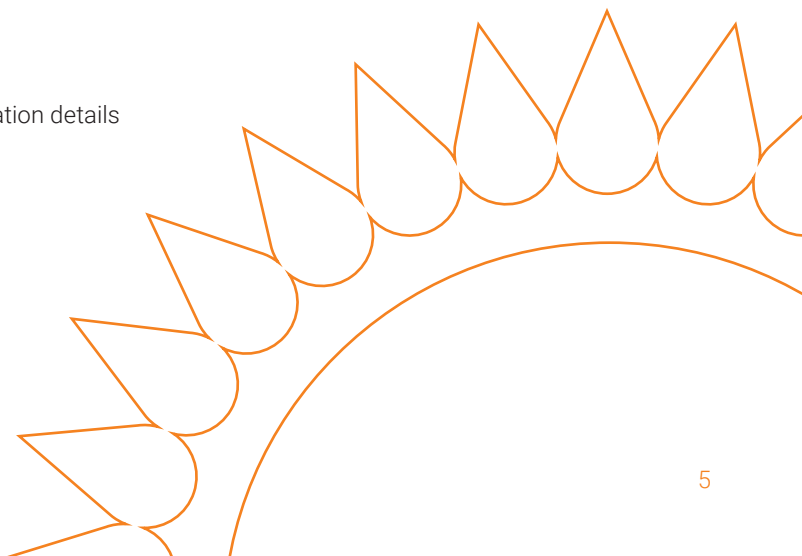
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# 1907–1931

**EUGEN WOERNER – FROM  
THE FIRST TWO PATENTS TO  
THE WOERNER-OELER-FABRIK**

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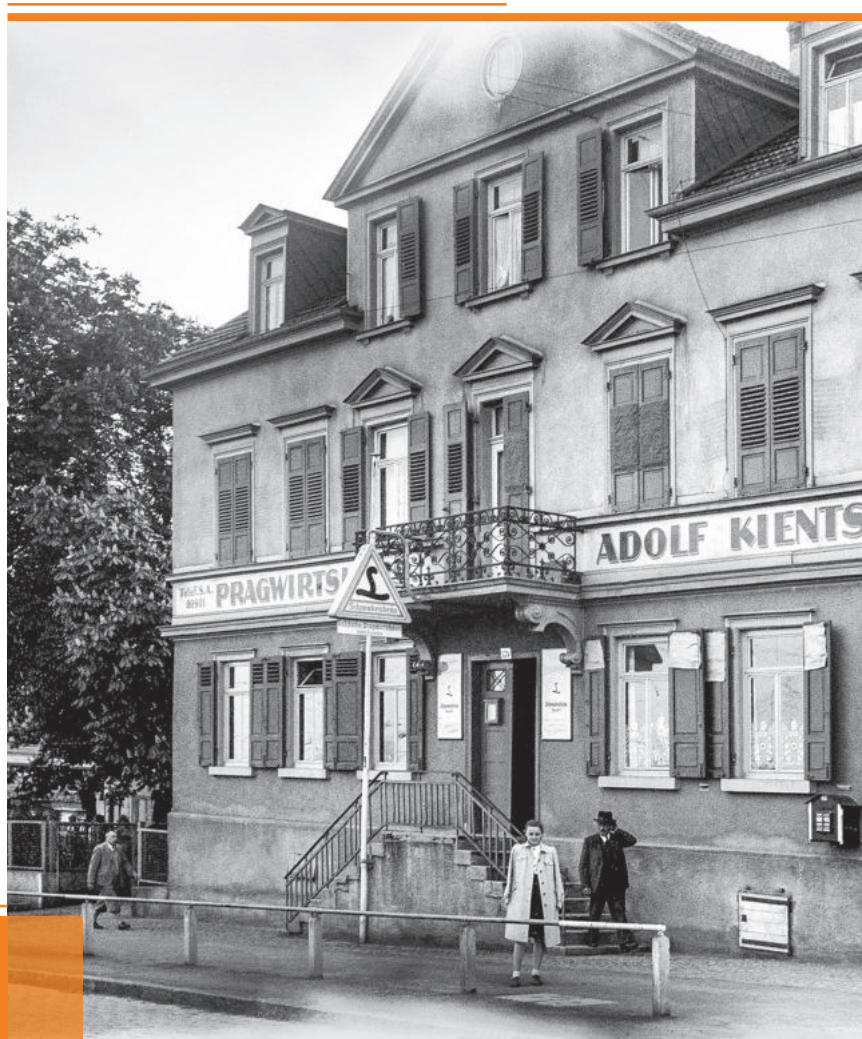
Eugen Woerner's oiler factory occupied two floors of the Mundinger building in Cannstatt, 1928.

**Eugen Woerner patented a total of 150 inventions between 1907, aged just 22, and his death in 1955. In 1909, he sold the first two patents for a central lubricating pump to Bosch, where, employed as an engineer, he was the Head of Bosch's oiler department. In 1921, he became self-employed and, in 1922, launched the Woerner oiler, later also called the "Golden Oiler". These were turbulent times. The First World War was followed by inflation. At the beginning of the economic upturn of the Golden Twenties, Eugen Woerner moved his mechanical workshops to Stuttgart-Cannstatt, where he operated under the name Woerner-Oeler-Fabrik from 1927.**

## EUGEN WOERNER EN ROUTE TO HIS FIRST TWO PATENTS

### AN INVENTOR SEES THE LIGHT OF DAY

Just for a moment, imagine we are back in the year 1885, the year in which the inventor and manufacturer Eugen Woerner was born: The automobile is just about to be invented, Gottlieb Daimler has been working on the development of the high-speed combustion engine in his test workshop in Cannstatt since 1882. But there are still horse-drawn carriages and carts on the streets. The soundscape at one of Stuttgart's main transportation hubs, the Pragsattel, where two major roads have intersected even since Roman times, is filled with clattering hooves and the calls of the coach drivers and carters. The Pragwirthshaus inn,<sup>1</sup> run by Eugen Woerner's father Jakob Woerner, has stood here at the Pragsattel since 1830. Following Jakob's death on 14th March 1885, the task of running the inn was left to his heavily pregnant wife Louise Katharine Margarethe, (née Dürr). Alongside the inn, the family also runs a small farm. There is plenty of work and the family's children are used to pitching in, the more so since the death of their father. On 8th July 1885, Eugen Woerner is born and completes the troop of ten children.



Sigrid Woerner in front of the popular Pragwirthshaus during a visit with her father in 1938.



↑ View of the Daimler design office in Untertürkheim, 1920. Eugen Woerner also prepared his own drawings here.

The children must be looked after and the inn and farm must be managed. But the efficient Louise Woerner knows how to economise, and she sets money aside for the schooling and education of her last born, the clever Eugen.

#### EUGEN WOERNER TRAINS AT THE DAIMLER-MOTOREN-GESELLSCHAFT

In 1901, at the age of 16 and having completed his secondary school diploma, Eugen Woerner was drawn to the prestigious Daimler-Motoren-Gesellschaft (DMG). In the same year, DMG won a race in Nice with its new 35 HP car, the first

Mercedes. The quality and reputation of the engines secured international orders for DMG.<sup>2</sup> Here, among like-minded people and in touch with the latest trends, Eugen Woerner completed an apprenticeship as a mechanic. He also witnessed a great blow to the company in 1903 when, one year before completing his apprenticeship, the production hall complete with over 90 cars, some of which were already finished, burned to the ground.<sup>3</sup> A short time later, at the new site in Untertürkheim, they carried on with redoubled efforts.

Eugen Woerner had passed the trainee evening classes with flying colours. He wanted to consolidate his knowledge of mechanical engineering so that he could research new developments independently. So, in 1904 he began a course of study at the Royal Württemberg School for Construction in Stuttgart. Three years later, in 1907, he returned to DMG as an engineer. He swapped his boiler suit for a white coat and now stood in front of the drawing board in the design office, employed as a mechanical engineer for car and engine construction.

← The coat of arms of the Woerner family from Balingen shows a citizen with lance and sword. The family name was first mentioned in a document in the 15th century.

## A CAR JOURNEY TO PARIS INSPIRES EUGEN WOERNER'S FIRST PATENT

Even as a student, the adventurous and daring Eugen Woerner was obsessed with cars. There was no question that he would accompany his friends as a “grease monkey” when a car was being delivered to its new owner.

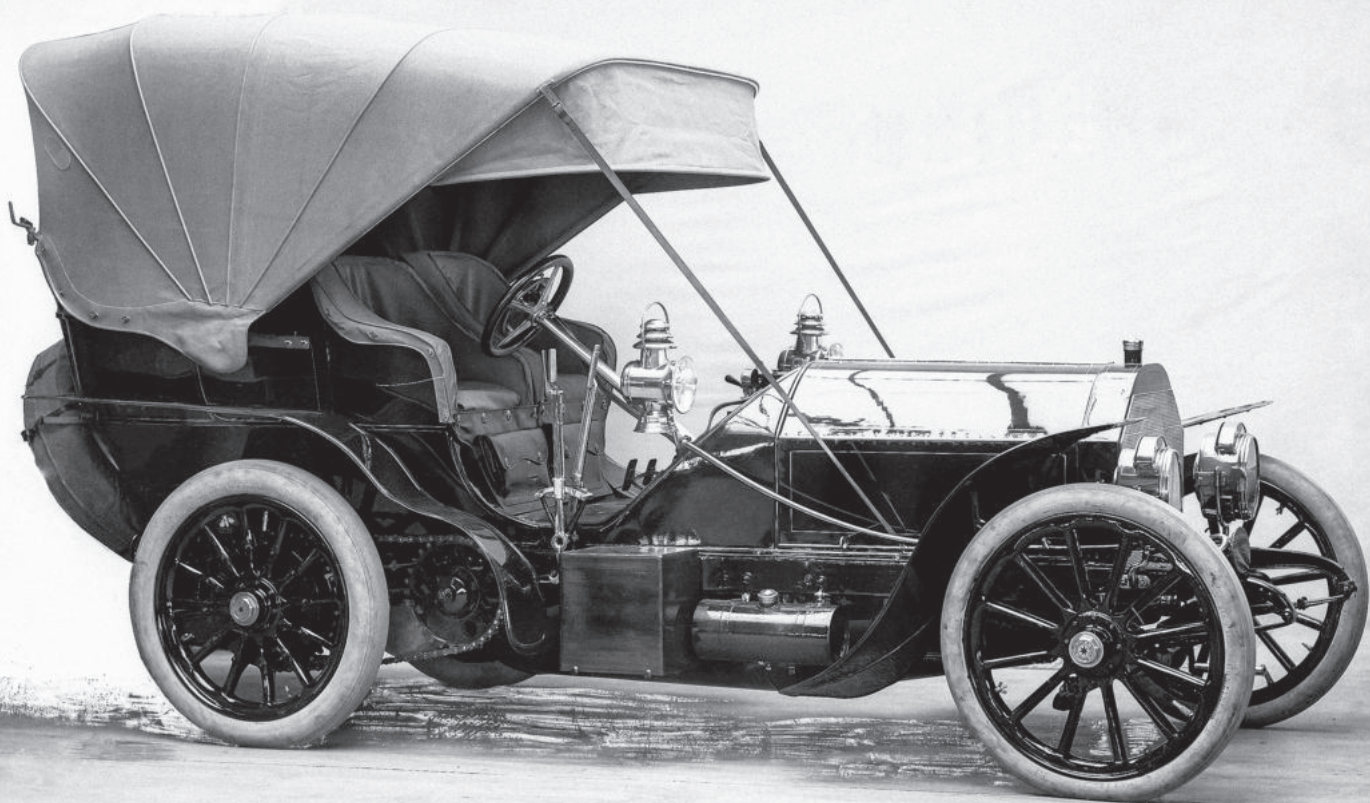
In 1907, another long trip lay ahead – to Paris. They left the factory premises in Untertürkheim in the 60 HP Mercedes, drove across the Pragsattel and then continued on unfamiliar gravelled roads towards the west. Cautiously, they navigated their way past the carts. As experienced motorists, and the only ones far and wide, they might have reflected that “not much has changed on the roads since the expansion of the railway network”. On clear sections, they might have tried to push the needle on the speedometer as far as 80 km/h. Time and again they had to interrupt their journey so that Eugen Woerner could fetch the oil can and focus on dripping oil onto the right places in the engine. He was meticulous about ensuring a good film of oil. The cylinders, bearings and pistons had to be able to run as smoothly as possible. As soon as metal hit metal, the engine would overheat and the metal parts would start to wear. The engine was the heart of the car – and oiling or lubricating it was crucial to its operation, although lubricating by hand was laborious and tedious.

Finally they reached their destination. They could tell by the feel of the road under the wheels, because Paris had enjoyed tarmac roads since the mid-19th century.<sup>4</sup> After successfully handing over the vehicle, the exertions of the car journey were soon forgotten. On the train journey home, while he was rubbing oil stains from his hands, Eugen Woerner started thinking about the annoying problem of lubrication again. How might it be possible for the oil to remain neatly stored in the car, hidden under the body in its own box, and only being applied in exactly the right quantities and at the right places in the engine via a pump driven by the engine?

A few weeks later, after some musing and lots of sketches, the first patentable design drawings were ready. With a central lubricating pump, Eugen Woerner wanted to put an end to the frequent interruptions during car journeys,



↑ The young inventor Eugen Woerner looked to the future with optimism.



↑ A Mercedes-Simplex 60 HP from 1903. Eugen Woerner could have undertaken the journey to Paris in a car of this type.

to save passengers from stubborn oil stains – and ensure that the engine experienced the same good treatment everywhere, regardless of whose hands it ended up in. “Patented from 28th May 1907” as attested to by the patent specification for the “Lubricating pump with piston valve control and working piston operated by crank-slides”<sup>5</sup>.

#### **A GAME WITH BEER MATS ENDED IN THE START OF SELF-EMPLOYMENT**

While the Patent Office was checking Eugen Woerner’s first patent – it was only issued a year later on 6th August 1908 – his idea continued to gnaw at him. He had drawn the “centralised, automatic pump for accurate lubricant dispensing”<sup>6</sup>, but what would be the best way to control the pump once it was installed in the body? This problem lingered at the back of his mind, including on one occasion when he was enjoying a beer with friends in a pub in Stuttgart. They tossed beer mats in the air and watched their flight as they constantly toppled and tumbled. And that was the solution: He would use a wobble plate as the control element!

In the months that followed, Eugen Woerner used every minute of his free time for designing. He rubbed out, modified and constructed

models until he was satisfied with his design drawing. Five and a half months after the first patent application, he submitted his documents for a second patent: The “wobble plate as the control element for a lubricant distributor with pumps set up in a circle around the drive shaft”<sup>7</sup>.

Two inventions, two patents. Without further ado, Eugen Woerner, convinced of success, handed in his notice at DMG at the age of just 23 and became self-employed. “As a young engineer, with no money in his pocket but with an enormous desire for independence, he believed that he himself could not only produce pumps straight away but then also sell them,” recalled his son-in-law, Alfred Kärcher. “There was no question of this happening, and so he had no other option than to assemble individual pumps in a rented garage using parts he had had produced in various workshops.”<sup>8</sup>

Not only did the young entrepreneur Eugen Woerner want to market his own pumps, he also wanted to construct them himself. But he didn’t have the necessary starting capital to do this.

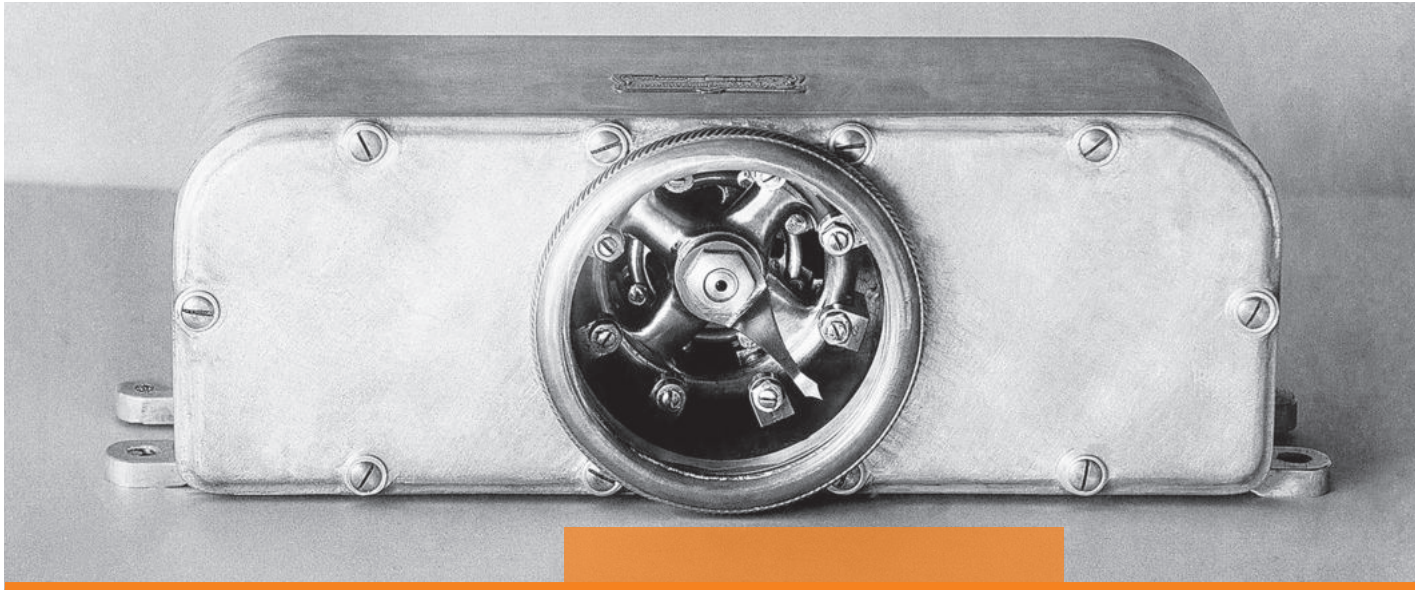
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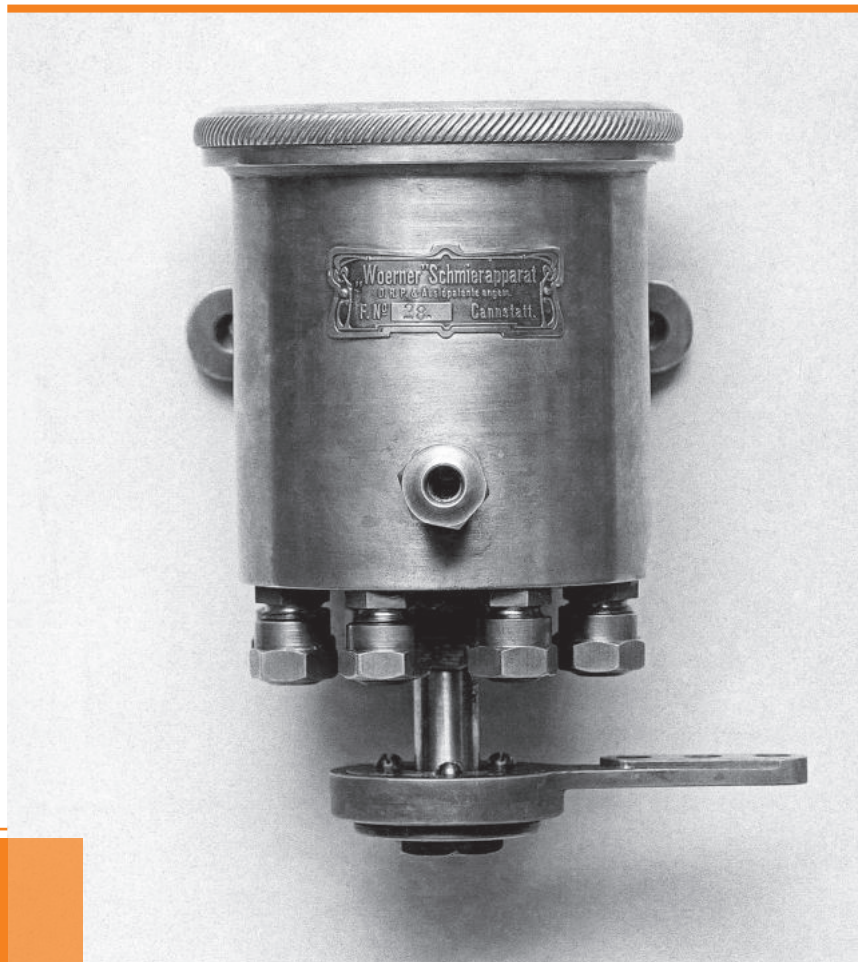


↑ The second patented invention:  
View of the drive shaft with pumps  
set up axially.

In 1909, a friend put him in contact with Robert Bosch, who was producing magneto ignitions and spark plugs for the automotive sector in Stuttgart at that time. So, the 25-year old inventor Eugen Woerner, who was just beginning his career, met with the experienced 49-year old Robert Bosch, whose name already enjoyed a strong reputation throughout the world. Robert Bosch himself had started small. He too had been 25 years old when he founded his first workshop with apprentices and an errand boy. Eugen Woerner must have reminded him of his younger self: Both were confident in their inventions and determined in pursuing their path.

#### EUGEN WOERNER'S YEARS AT BOSCH

A short time later, Robert Bosch asked Eugen Woerner to meet with him again. He put a lucrative offer on the table: He wanted Eugen Woerner to supervise the construction of his lubricating pumps himself, employed as an engineer with a good salary. At Bosch he would have the opportunity to further develop and implement his inventions. In return, he would have to transfer the usage rights to his first patents to Robert Bosch. On 5th June 1909, the two parties signed a contract and on 1st July, Eugen Woerner started his new job.



→ A "Woerner lubricator" with manufacturing  
number 28.

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Eugen Woerner: Inventor and senior engineer at Bosch. This is a portrait from the Bosch personnel file from 1916.

“And so I was responsible for creating the world famous Bosch oiler”<sup>9</sup> – this was Eugen Woerner’s later remark regarding his twelve years as a developer at Bosch. Yet a few more years would pass before the oiler’s triumph under the name Bosch.

In 1909, Eugen Woerner began constructing the oiler, initially cast from a solid block of bronze. The design was extended with a drop indicator behind glass, which would have been visible from the driver’s seat of the car. However, the oiler never reached market maturity. From 1910/1911, they began manufacturing the oiler from individual components, in order to reduce the expensive waste caused by casting. This model of a fresh oil lubricator was now no longer dominant in the automotive industry. In the meantime, the cheaper circulating lubrication system for engines had become established. From 1909, in addition to the variant for the automotive industry, an oiler for steam engines was also developed. The oiler, intended for car engines, therefore conquered a different sales market. Württemberg State Railways was the first customer.<sup>10</sup>

In 1913, when Eugen Woerner had demonstrated his first successes at Bosch and his financial situation had further improved thanks to a 1 percent share in the sale of the Bosch oiler, he married Marie Braun. She was well aware why she had agreed to the marriage on 8th July, Eugen Woerner’s birthday. She actively supported him her whole life.

One year later, the First World War broke out. The years from 1914 to 1918 were hard on Bosch:<sup>11</sup> The company had to switch to production of military goods. Half of the workforce was fighting in the war and the vacant jobs had



An untroubled year: Eugen and Marie Woerner in the summer of 1913.



↑ New Year's Eve 1921: Bosch celebrates the completion of its 50,000th oiler.

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been filled by women.<sup>12</sup> Eugen Woerner was not drafted into the army and remained head of the oiler department during this time. The task now was to produce Bosch oilers for the diesel engines on submarines and heavy army tractors. In 1919, one year after the end of the war, oiler production had grown so significantly that the department became an independent factory. The oiler workforce moved into the Bosch factory building on Hoppenlaustraße, constructed in 1901.<sup>13</sup>

The oiler was booming: Not only did the shortage of lubricant after the world war force a rethink among machine owners, but the operating safety and long service life of the machines spoke for themselves. However, there was no question of series or even mass production. The machines, such as ship's diesel engines, conveyor bridges in lignite mining, weaving

looms and tooling machines, were all too different. They all had their own specific requirements of the lubrication system. In seven basic models and 400 variants, the Bosch oiler was available until 1924 based on Eugen Woerner's second patent.<sup>14</sup> The production figures also increased considerably in the 1920s. While a total of 50,000 oilers were sold in the first twelve years, 20,000 were produced per year after 1922.<sup>15</sup> Some colleagues begrudged the young chief engineer his success. His director at the time, who, like him, was a member of the "Motor" student fraternity, was annoyed that a chief engineer earned more than him. Eugen Woerner didn't care about that – he had long been thinking about founding his own company. He wanted his products to carry his own name.



## HIS OWN BOSS – THANKS TO HIS OWN INVENTIONS

### A DIFFICULT START

His closest employees later said it had been “pigheadedness”<sup>16</sup> as well as “justified reasons”<sup>17</sup> that had prompted Eugen Woerner to hand in his notice at Bosch on 1st October 1921. It was a brave step, considering the catastrophic economic situation after the First World War. If Eugen Woerner wanted to be self-employed, however, he needed a new invention for the central lubricating pump, ideally a patent, that confirmed the different design from the Bosch oiler. As good as the Bosch oiler was, there was still room for improvement.

In particular with high-pressure compressors, it had become apparent that the Bosch oiler could only be used satisfactorily for a short time. The control valves, which were designed as piston-like control components, were vulnerable to

wear: They had large friction surfaces, which were also exposed to continuous movement. At high pressures, sometimes greater than 100 bar, even the slightest abrasion was sufficient to impair the efficiency of the pump and its operating safety.<sup>18</sup>

While Eugen Woerner was focusing on improving central lubrication, his resentment about the Bosch company gnawed at him. The sales bonus for the oilers would have been a nice buffer if he hadn't stopped receiving it at the same time as he stopped receiving his salary.<sup>19</sup> He was convinced that he should still be being paid the sales bonus. After all, it was his patents that were still being used. So, Eugen Woerner sued the big company. In the first instance, he was proven right. But Robert Bosch appealed the decision.



↑ Withstanding the highest pressures: The Woerner oiler became part of the company's history as the “Golden Oiler”.

The dispute smouldered and it was all the more important to continue working full speed ahead on the new design drawings. Instead of controlling the central lubrication system with a piston-like component, Eugen Woerner switched to normal valves. They offered the advantage of remaining permanently tight even at high pressures, opening fully, remaining fully open throughout the entire suction stroke and then closing tight again. The valves could also be used for oils of different viscosities. The central lubrication system was therefore suitable for both "thin" and "thick" oil, depending on which oil was required by the machine to be lubricated. Eugen Woerner registered his latest invention with the Patent Office under the patent specification "lubricating pump for several lubrication points with pistons set up in a circle"<sup>20</sup>.

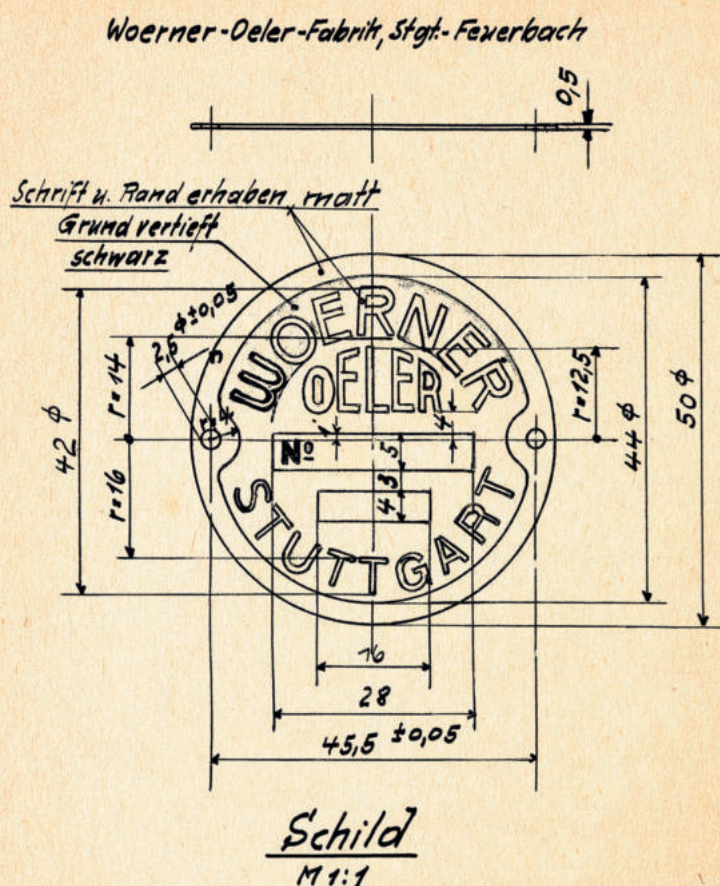
After submitting the application, Eugen Woerner began constructing and marketing the Woerner oiler. To do this, he had rented rooms in an inn, where he pressed ahead with the production of the oiler with a few employees. Further accessory parts were soon added.

In the dispute regarding the continuation of the sales bonus, Robert Bosch scored a partial victory in 1923 in the court of second instance. It was conceded that he would only have to pay a settlement sum. Eugen Woerner collected the sum of 10,000 German Goldmarks from the bank in a briefcase, then proudly presented the contents to his mother – perhaps to convince her that it was possible to earn money as an inventor.

The Woerner oiler truly turned out to be an invention that was worth money: It secured Eugen Woerner an income during the period of inflation and enabled him to later establish the Woerner-Oeler-Fabrik during the Golden Twenties. Not only that, but this successful product was still part of the product range 50 years later when the company celebrated its golden anniversary – at that time the employees had long since been calling it the "Golden Oiler". Even today, the oiler that was so important for the company's

Eugen Woerner's inventions finally bear his name: Drawing of a product sticker from 1924.

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foundation has a special role: The date on which it was patented, the 15th June 1922, is considered the birthday of the current company EUGEN WOERNER GmbH & Co. KG.

**A BRIEF EPISODE: WOERNER-OELER-VERKAUFS-GESELLSCHAFT M.B.H.**

In 1923, with the Woerner oiler on the market, Eugen Woerner was ready to take the next step: Founding the company as a limited liability company. This legal form, which had existed since 1892, was suddenly extremely fashionable. GmbHs had sprung up like mushrooms over the last two years. The inflation that had persisted since the First World War made it easier for companies to raise the minimum share capital of 200,000 Marks, which had been increased to 500,000 Marks at the end of 1922.<sup>21</sup>

Eugen Woerner sought advice about this from his brother Gustav, who was a businessman in Munich. The GmbH offered the advantage that liability extended only to the share capital and not to private assets. Gustav Woerner promised to invest as a shareholder. In Johannes Herzig, who was a self-employed consultant engineer in Stuttgart, Eugen Woerner found a further partner to manage the business with him. Each of them contributed share capital of 200,000 Marks. On 14th May 1923, they founded the Woerner-Oeler-Verkaufs-Gesellschaft m.b.H. based in Stuttgart, for the sale of Woerner lubrication equipment and associated components.<sup>22</sup>

The hyperinflation at this time made business more difficult. Although 600,000 Marks had been a significant sum of money in spring 1923, the rapid devaluation of money that began in July 1923, at the same time as the opening of their business in Militärstraße 2 B in the west of Stuttgart (now called Breitscheidstraße), gnawed away considerably at their savings. This was seen most clearly in the prices of daily food items: A couple of double rolls, which had cost just three pfennigs in 1914, cost 1500 Marks by July 1923.<sup>23</sup>

In addition, the two Managing Directors, Eugen Woerner and Johannes Herzig, had different ideas about the collaboration. In any case, Eugen Woerner soon began to consider liquidation. Each of the three shareholders was entitled to a



↑ A bestseller even in the 1950s: The R-oiler as the successor to the "Golden Oiler".



↑ The collaboration with partner and co-director Johannes Herzig was short-lived.

third of the profit, or rather the losses. As a sole proprietor, Eugen Woerner would bear the entire risk alone, but he would also retain all of the profit earned from the sale of his designs. On 28th November 1923, Eugen Woerner and his brother Gustav voted to dissolve the company and on 31st December 1923, they ceased trading.<sup>24</sup>

#### FROM THE MECHANICAL WORKSHOP TO THE WOERNER-OELER-FABRIK

The constant ups and downs of world affairs were to accompany Eugen Woerner his entire life. Inflation might have robbed people of all their savings, but a wave of optimism rolled through Germany. In November 1923, the provisional but already stable Rentenmark had been introduced, and in August 1924 the equivalent and now generally valid Reichsmark followed. Even

in Stuttgart, people wanted to enjoy life again after the long, harsh years. The Golden Twenties were on their way.

Eugen Woerner too was full of optimism and, once again as a sole trader, began looking for suitable premises for his mechanical workshop. After all, the German National Railway and mechanical engineering in general still required oilers. Eugen Woerner found what he was looking for in Eisenbahnstraße 22 a, Cannstatt. The Munding building was available for rent. It was situated across the Neckar from the Wilhelma botanical gardens, which had opened in 1919. But the clear advantage of the location was that it was just a few metres away from Cannstatt railway station, which had four platforms. The connection to the railway had drawn many

↓ Eugen Woerner and Johannes Herzig confirmed the dissolution of the company in front of Stuttgart district court.

Die Gesellschaft hat sich durch Beschluss vom 28. Nov. 1923 aufgelöst. Liquidatoren: Eugen Woerner und Johannes Herzig je Ingenieur hier.

Wir übergeben Ausszug aus dem Versammlungsprotokoll und bescheinigen, auf die §§65 Abs. 2, 73 u. 71 G.m.b.H. Ges. aufmerksam gemacht worden zu sein.

Zur Aufbewahrung bei den Akten des Gerichts zeichnen wir unsere Unterschriften zugleich am Schlusse des Protokolls.

Vorgelesen, genehmigt, unterschrieben!

Johannes Herzig  
Eugen Woerner. Haun

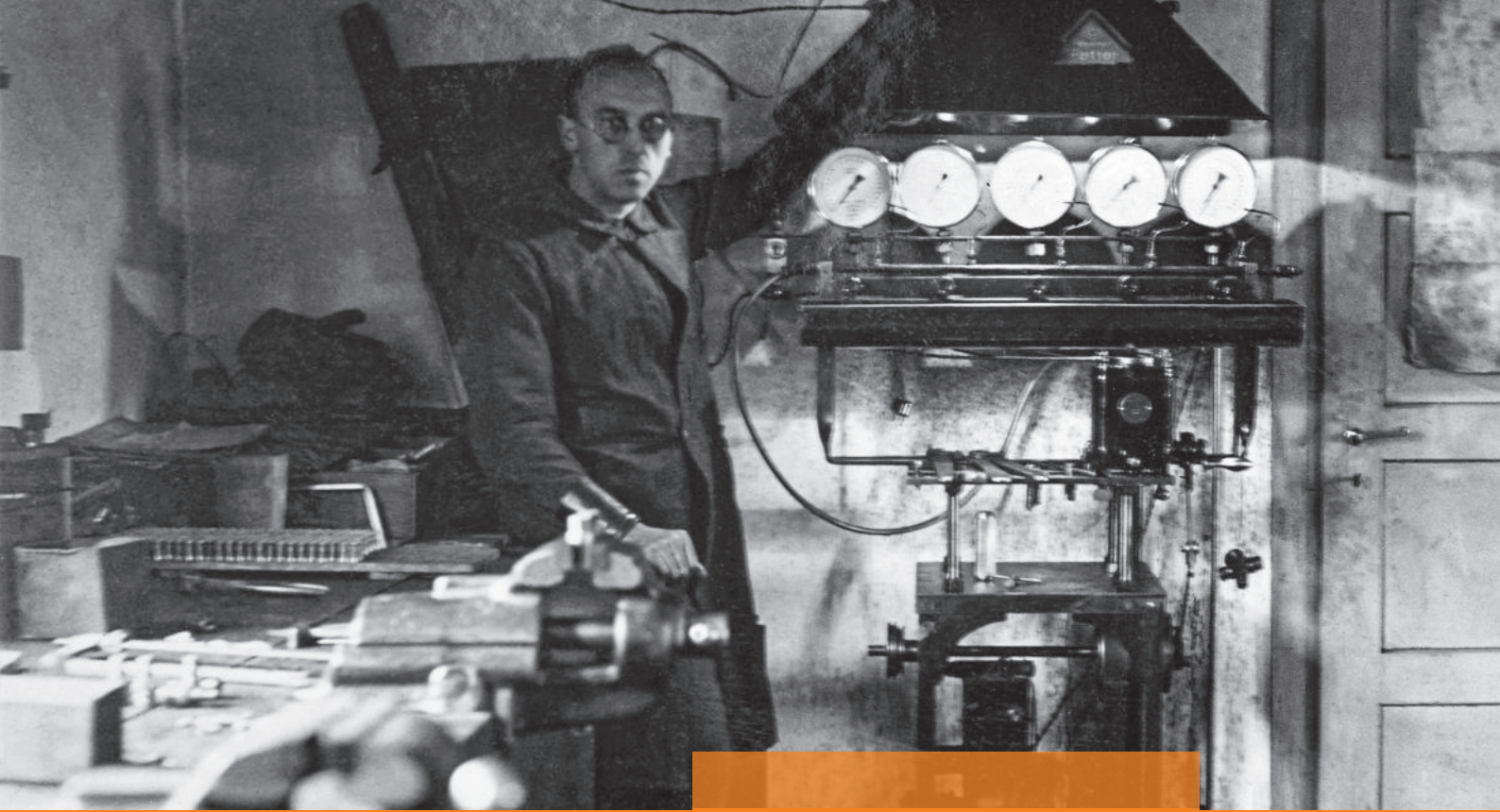
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The oil barrier assembly and test bench department guaranteed maximum quality from the outset.

manufacturers to Cannstatt in the 19th century. Due to a lack of space, quite a few had migrated to Untertürkheim or Fellbach from 1900 on;<sup>25</sup> factory buildings were therefore frequently available for rent or for sale.

Eugen Woerner's mechanical workshop occupied two floors of the Munding building. He set up the machine room on the first floor. By January 1927, as indicated by a "Questionnaire for the assessment of the risk rate" by the Süd-deutschen Eisen- und Stahl-Berufsgenossenschaft (South German Iron and Steel Trade Association), it was equipped with two lathes, two drills, a milling machine as well as a Fortuna grinding machine, a small Heinemann revolver and a tool grinding machine. The machines were operated by electric motors.<sup>26</sup> The garage served as a raw materials store for cast iron, iron and steel for bolts. The oilers and oil barriers and their test benches were assembled on the second floor. In addition to the finished parts warehouse, the second floor was also home to the shipping department, commercial office and the design office.



The shipping department became even more significant in 1925. Here: In January 1930, six lubricators with accessories were shipped to a company in Congo, then still a Belgian colony.



↑ The manufacturing department in front of the Munding building in 1928.

The shipping department became even more significant in 1925. The Woerner oil barriers for compressors, steam engines and steam locomotives were also available in France, Belgium, Spain, China, South America and the United States of America, for example. The unit price of 14.72 Reichsmark was converted into the respective currency.<sup>27</sup> The continuously expanding railway transport network and the increasing use of steam ships offered specialist contractors easier access to the global sales market. Eugen Woerner had this opportunity in his sights from the outset, as he had always had his inventions patented abroad too. According to a family anecdote, Eugen Woerner even changed his name in order to improve the export of his products. His family name was recorded in the birth register as "Wörner", but was later changed to the more international "Woerner".

In November 1925, Eugen Woerner registered his mechanical workshop and the sale of Woerner oilers with the Stuttgart tax office.<sup>28</sup> Business was initially slow, but by January 1927, he already had seven employees for the production and maintenance of the central pump-fed lubrication

systems. His company was now also to get its own name: On 9th July 1927, it was listed in the commercial register as the Woerner-Oeler-Fabrik Eugen Woerner.

The sale of the oilers brought profit, and Eugen Woerner knew how to invest it: "In terms of space, everything was quite cramped," said long-standing employee Alfred Dürr of his first years at the Woerner-Oeler-Fabrik.<sup>29</sup> That's because Eugen Woerner had upgraded the machine room in 1928: Three automatic machines, several grinding, drilling and milling machines, revolver benches as well as a salt bath hardening system were now available to the 21 workers. In addition to the foreman, there were eleven mechanics, two lathe operators, a toolmaker, three apprentices, and three unskilled labourers.<sup>30</sup>

Eugen Woerner's invention of the grease piston lubricating pump, which had been patented on 11th April 1928, had resulted in the fleet of machinery being expanded. For machines in the open air or in dusty environments, the use of grease

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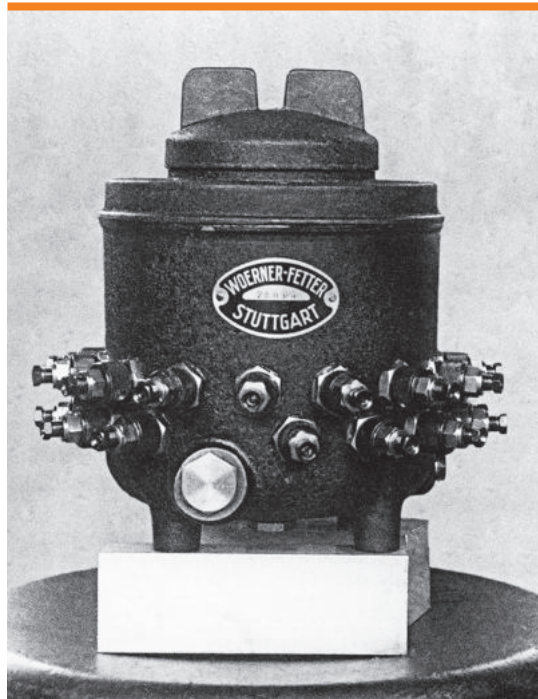
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New inventions required new machines:  
Space became tight.

was particularly useful, as it acted like a seal against impurities at the outlet points. Bosch had also promoted the production of lubricators and launched the Model K on the market in 1928. Other grease lubricating pumps from De Limon Fluhme & Co. in Düsseldorf followed in 1931/32. Time and again, Eugen Woerner figured out how to prevail against these two big, reputable companies: Production processes were further optimised from the outset and the products were constantly further developed so that he was able to impress customers with outstanding quality at competitive prices.

Eugen Woerner also set high demands of his employees. Both the white-collar employees and the blue-collar workers changed frequently over the next few years. In part, this was due to the unstable economic situation, but it was also due to Eugen Woerner's work ethic. "He demanded a lot from his employees, but never more than he himself was willing to give," recalled his daughter Sigrid, who joined the company in 1944 at the age of 17.<sup>31</sup> In 1929, seven employees were recruited in the commercial and technical area. A list from 1931 includes three businessmen and a technician as well as two typists and an office clerk. The number of workers had fallen to 16.<sup>32</sup>



The Woerner lubricator was an important extension to the product range.



1907

1931

1959

2001

2022





Inventor, entrepreneur and boss: Eugen Woerner in a meeting with his employees.



↑ View of the commercial office of the Woerner-Oeler-Fabrik.

A strike by his employees in May 1930 ultimately led to terminations and re-appointments or new recruitment. The global economic crisis, which ran its course with the stock market crash in October 1929, still hadn't affected the oiler factory. There were sufficient orders for the Type R and R0 oilers with 0.5; 1; 2.5; 5 and 10 litre capacity, the Type E for built-in systems, for lubricators with a capacity of up to 12 kg as well as for oil barriers for locomotives, steam engines and for oiler accessories. The employee representative, Luckscheiter, demanded an increase in wages for the workforce. But Eugen Woerner refused. The workers met in the side room of the Schwabenbräu tavern in Cannstatt to consult each other. The majority of them voted for strike action. This result did not change Eugen Woerner's decision. When the employees stopped working, Eugen

Woerner sent them their dismissal papers. "The plant now stood idle for a further 14 days. After this period, the author of these lines received a postcard requesting him to come to the plant immediately to start work again. Work initially continued with one man and foreman Bader, and after two more weeks, select men were appointed again along with other new workers, so that the workforce was now made up of 22 men," said Alfred Dürr describing the end of the strike.<sup>33</sup>

After that, according to Alfred Dürr, "there was peace in the business and quick progress was made, there were plenty of orders, and that's how things continued until spring 1931 [...]"<sup>34</sup>.

## A BRIEF HISTORY

### **THE FIRST GENERATION: EUGEN WOERNER AND MARIE WOERNER, (NÉE BRAUN)**

Ingenious, inventive, thrifty and determined – at times pigheaded – is how the 1.76 metre tall, sturdy man with dark blonde hair is described by his fellow human beings. It is precisely these properties that always gave Eugen Woerner belief in his own company.

In 1927, at the age of 42, Eugen Woerner registered the “Woerner-Oeler-Fabrik” in the commercial register. At this time, he already had many eventful years behind him. His apprenticeship years at Daimler-Motoren-Gesellschaft, the study of engineering and his time at Bosch had shaped him just as much as the radical changes to everyday life due to the First World War and inflation. Since 1913, more than 14 years ago at this stage, he had shared emergencies as well as joy and success with his wife Marie Woerner, (née Braun). In 1927, at the age of 37, Marie Woerner gave birth to their daughter Sigrid. Sigrid remained their only child.

↓ Father and daughter circa 1940: Eugen and Sigrid Woerner were an experienced team.



Marie Woerner was the “calming influence” in the family.<sup>35</sup> She was reliable; she was also industrious and completed all her tasks without a great fuss. When help was needed, she held her own. When Eugen Woerner became ill in 1939 and had to undergo several operations, she took over the company management – she had had an insight into all business transactions since 1931 when she took over bookkeeping for the Woerner-Oeler-Fabrik. After the Second World War, Eugen Woerner gave her powers of attorney. He had been forced to give up his role as company owner, because he had joined the NSDAP in 1937. After completing his denazification process in 1947, Eugen Woerner was able to return to the company.

### **ROLE MODEL AND A PERSON WHO COMMANDED RESPECT: EUGEN WOERNER AS A BOSS**

At the beginning of the 1930s, Eugen Woerner had relocated to Feuerbach with his oiler factory and his family. As the company grew, so too did his responsibility for his employees. “Discipline and a sense of duty were a matter of course for him,” said his daughter Sigrid, but he was also “sociable and cheerful” and “never averse to a good joke”.<sup>36</sup> Eugen Woerner was popular as a boss, he was a person who commanded respect, was always fair and was intent on providing the apprentices with a good education. Even as a 70 year old, he continued to be actively involved in the company. His interest still lay in developing and improving products. Franz Stoess, who joined the Woerner-Oeler-Fabrik as an apprentice in 1954, still recalls how Eugen Woerner got him involved in tests on a grease lubrication pump. Amongst other things, he showed him how to handle the slide rule. “But he didn’t force the issue, he explained beautifully what he wanted, what I was to do.”<sup>37</sup> His good relationship with his employees was also demonstrated by the special gift – a television set – that they gave him for his 70th birthday, which also proved to be his last. On 30th December 1955, Eugen Woerner died. He had already made provisions for the time after his death: Both his daughter Sigrid and her husband Alfred Kärcher knew the company inside out.



↑ Old and young marital bliss: Eugen and Marie Woerner at the wedding of their daughter Sigrid to Alfred Kärcher in March 1951.

# 1931–1959

## WOERNER-OELER-FABRIK – NEW CHALLENGES IN UNCERTAIN TIMES

1907 1931 1959 2001 2022



View from Ludwigsburger Straße to Feuerbach in 1935. On the right of the street you can see the company premises of the Woerner-Oeler-Fabrik.

**Sales of the oiler enabled Eugen Woerner to purchase his own factory building in 1931. But soon the global economic crisis caught up with the Woerner-Oeler-Fabrik too. This was followed by the Nazi period and the Second World War. In the 1930s, Eugen Woerner had, amongst other things, developed a bicycle with curved path of the pedals, but the switch to war-time production required him to specialise in his patented oil barrier for the German National Railway. His factory was badly hit during the bombing of Stuttgart. The post-war years were dominated by reconstruction. After Eugen Woerner's death on 30th December 1955, Sigrid (née Woerner) and Alfred Kärcher became his successors.**

## RELOCATION DURING THE GLOBAL ECONOMIC CRISIS: THE FIRST COMPANY-OWNED PREMISES IN FEUERBACH

On 1st July 1931, Eugen Woerner was the proud holder of a purchase contract for the 4.2 hectare factory premises with factory, business and residential buildings. Following the announcement in spring 1931, the deal was now done. Eugen Woerner and the previous owners, the Süd-deutsche Kolbenbolzenfabrik, had signed the document: From now on, and for the next 28 years, Ludwigsburger Straße 1–11 would be home to the Woerner family and the Woerner-Oeler-Fabrik.

In the corporate landscape of the city of Feuerbach, which had developed into an industrial location since the 1860s, the Woerner-Oeler-Fabrik fitted in well. The local companies had specialised in different sectors not only within the chemicals and food industries, but also in the metal industry.<sup>38</sup> Whereas, on the one hand, the Bosch plant was a competitor company, the different businesses also complemented each other in their fields of work. For example, the Woerner-Oeler-Fabrik awarded contracts for metal finishing to the Schoch brothers' galvanising plant, which had been based here since 1925.

The workforce was informed about the completion of the purchase contract. Shortly afterwards, the company relocated to the factory site, which

was situated between Schwieberdinger Straße and Ludwigsburger Straße. There, where the two streets met at a point, the Friedrichswahl inn was clearly visible. The inn alone, with bowling alley and a hall for up to 100 people, certainly wouldn't have attracted Eugen Woerner's interest. But the premises were also home to a fully established

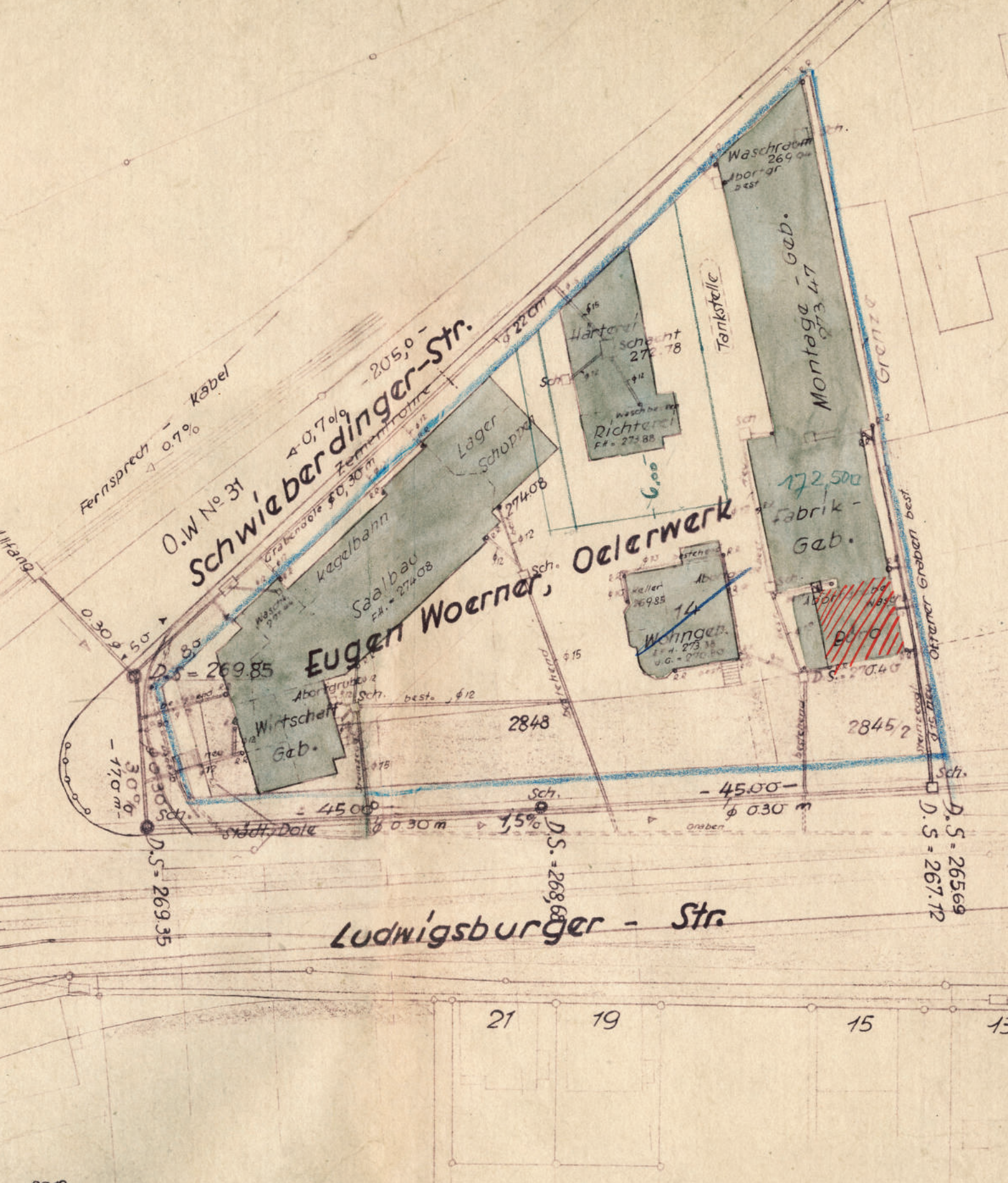


The Friedrichswahl inn, which was part of the company premises, in the 1930s.

Stadtgemeinde - Stuttgart  
Ortsteil - Feuerbach  
Lageplan - Skizze.



↑ The factory premises between Schwi-  
berdinger Straße and Ludwigsburger  
Straße, on a map from 1936.



Fernsprecht-Kabel  
 0.7%

O.W. No 31  
 Schwieberdinger-Str.  
 -205,0-  
 A=0,7‰  
 Zementtrotte  
 80,30m

Eugen Woerner, Oelerwerk

Ludwigsburger - Str.

Waschraum  
 269,00  
 Aborrgr  
 best

Härterei  
 schacht  
 272,78  
 Richtererei  
 FF = 273,88

Lager  
 Schuppen

Saalbau  
 F.H. = 274,08

Wohngeb.  
 14  
 273,38  
 u.G. = 270,50

172,500  
 Fabrik-  
 Geb.

Wirtschaft  
 Geb.

2845,2

2848

D.S. = 269,35

D.S. = 268,68

D.S. = 265,69  
 D.S. = 267,12

21

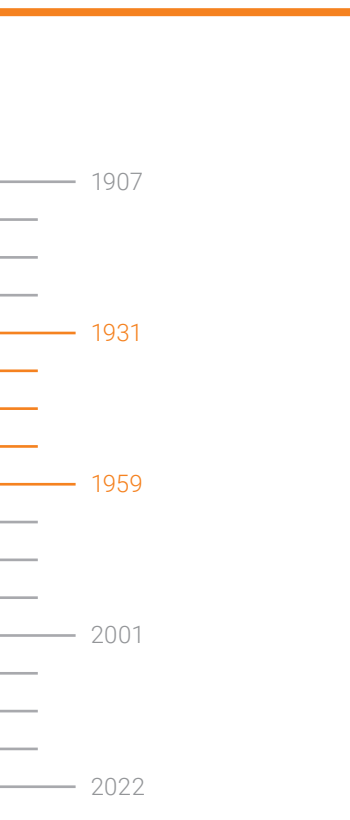
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↑ The Woerner-Oeler-Fabrik operated a filling station during the global economic crisis. Sigrid Woerner had no need for petrol for her scooter.



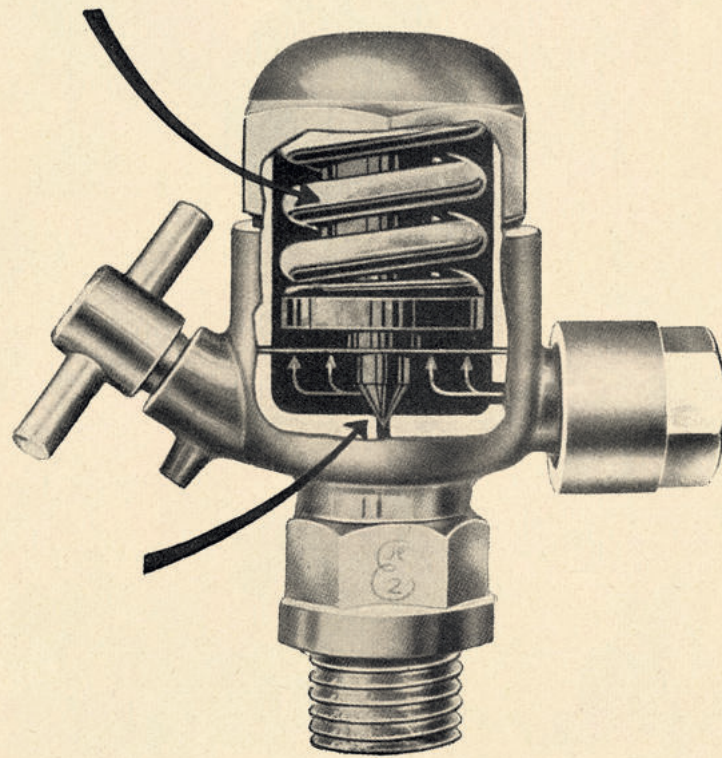
hardening plant as well as a multi-storey factory building. Between these, there was a filling station. The cleared area leading up to the inn was laid out as a garden, in which a historic villa attracted attention. Roughly 20 years prior, in around 1909, it had been constructed by the manufacturer Karl Siegel after he had already established his factory for shoe polishing machines here in 1895.

There wasn't much time to marvel at the new surroundings: "Once the machines had been installed and connected, and the raw material and finished parts warehouses had been set up, production resumed again,"<sup>39</sup> said Alfred Dürr, summarising the key details of the relocation.

Working under great pressure, Eugen Woerner had been tinkering on his latest invention for

← The machines were soon relocated with the help of the employees.





↑ The Woerner oil barrier: This illustration from an advertising brochure from the 30s shows how the strong compression spring ensured tight closure of the valve.

the National Railway at the beginning of 1931, with which he hoped to secure a big contract for his factory. It was a “low pressure barrier with a spring-loaded and diaphragm-controlled shut-off valve”. The thus far “familiar barriers had the big disadvantage that, if there is a tear in the diaphragm, the lubricant penetrates through the tear and into the chamber behind the diaphragm, and the shut-off valve is no longer actuated, so that the supply line after the lubricating point is interrupted and the lubricant no longer reaches it. [...] The purpose of the invention is to ensure reliable lubrication of the lubrication point even if the diaphragm is damaged,<sup>40</sup> said the patent specification regarding the benefits of the new invention. It was patented from 28th June 1931.

The German National Railway placed an order for 1000 low pressure barriers. Depending on the design of the steam locomotive, 14 to 21 units were needed. They were delivered at the beginning of 1932. In the meantime, the global economic crisis had also hit the Woerner-Oeler-Fabrik. There were no longer sufficient orders for

the 29 employees, and so they now only worked three days a week. The first redundancies soon followed – “until there was only one man and four apprentices in the plant,<sup>41</sup> recalled Alfred Dürr.

Most companies in Germany were facing a similar situation. Many companies had to close, unemployment turned into mass unemployment, impoverishment lead to hopelessness across broad levels of the population.<sup>42</sup> The filling station on the company premises proved to be a stroke of luck during this time, something Eugen Woerner put to good use. At the end of 1932, it was commissioned as an independent filling station where petrol could be sold at five pfennigs less than it was being sold by competitors. Together with international orders, this was how they survived 1933.



↑ Apprentices at the Woerner-Oeler-Fabrik at the end of the 1930s. Eugen Woerner placed great emphasis on a good education.

1907

1931

1959

2001

2022

## BETWEEN BICYCLE CONSTRUCTION AND WAR-TIME OIL BARRIER PRODUCTION – THE WOERNER-OELER-FABRIK IN THE NAZI PERIOD

From 10th March 1933 on, a swastika flag was flown above Feuerbach town hall, even though the majority of Feuerbach residents had voted for the workers' parties in the Reichstag election five days before. The long-standing Lord Mayor, Wilhelm Geiger, had been forced to resign for "health reasons". The SA, SS and the Steel Helmet Association had arrested representatives of the workers' parties. The previously independent town of Feuerbach was incorporated into Stuttgart on 1st May 1933 without a public hearing.<sup>43</sup> The enforced conformity measures penetrated all areas of political and social life at

breakneck speed. The terror of the SA and SS appeared to be everywhere. In 1935, there were even members of the SA in the Friedrichswahl inn that had just been opened by Eugen and Marie Woerner: They used the big hall for parties.

In the Woerner-Oeler-Fabrik, things had been improving since 1934. The first orders had been processed and Eugen Woerner gradually started reappointing his previous employees. In recent years, he had also "quietly developed the new chainless cycle with pedal levers".<sup>44</sup>

### **“OH, THAT’S SO EASY” – THE CURVED PATH OF THE PEDALS ON THE BICYCLE**

Once more, Eugen Woerner was consumed by the ambition of a technician who had set himself a task. Full of determination, he pursued the aim of making pedalling easier for cyclists. In 1943, in a letter to Triumph Werke Nürnberg A.G., Special Committee for Bicycles, Eugen Woerner gave an impressive and amusing description of his motivation: “Having long since swapped one’s own bicycle for a ritzy Mercedes, one nonetheless, or perhaps therefore, having previously been a cyclist, had to pity the poor cyclists when even on slight inclines, they had to cycle standing up, demonstrating that they ‘have to slave away to make progress.’”<sup>45</sup> To make pedalling easier, Eugen Woerner further developed the curved path that was familiar from the pedal lever cycles with chain drive from the 1890s. The curved path of the pedals was considered gentler on the joints and required less strength than

the circular path: The long track of the curve would enable utilisation of the full force of the pedal lever, while the path travelled by the foot became shorter overall compared to the circular path. Eugen Woerner succeeded in eliminating the previous disadvantage of the cyclist sometimes accidentally back-peddalling and actuating the brake: When one pedal was at its lowest position, the other pedal had already passed the highest point of the pedal track. The bicycles were driven by pedal levers, a type of drive that had already been used in predecessors of the penny farthing. After a long development phase, Eugen Woerner applied for a patent for the “Chainless cycle with pedal levers” on 1st July 1937.<sup>46</sup>

In the meantime, machines for the production of bicycles had been set up in the Woerner-Oeler-Fabrik. In 1937, the Woerner bicycle was offered in six different basic versions, from touring bike to racing bike. In the summer of 1937, three



↑ A Woerner racing bike with pedal levers and curved path, probably in the year 1937.



↑ Sigrid Woerner had her photo taken with the cyclists at the end of their leg in Berlin.

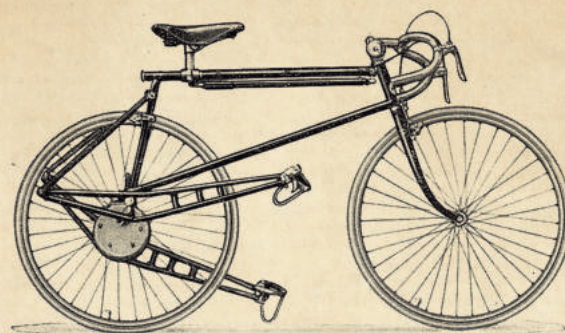
amateur cyclists covered 2063.4 kilometres in twelve legs on Woerner road racing bikes – and after a long leg, such as Stuttgart to Saarbrücken (234 km), they still had enough energy to dance the night away. Their tour was also good for advertising – daily newspapers reported on the cyclists and their pedal lever bicycles.<sup>47</sup>

The sale of Woerner bicycles was to be boosted by two racing cyclists from Stuttgart. They were training for a “cycling evening” in March 1938, to demonstrate the superiority of the Woerner bicycle on the track in the city hall. Woerner had produced special track cycling wheels for this purpose. But there was a nasty surprise for everyone on the day of the “cycling evening”. The tenants of the city hall refused entrance to the two cyclists. Their exclusion and therefore the loss of the opportunity to present the Woerner bicycle to larger groups of the population still rankled Eugen Woerner years later: “To the outside [...] it is of course astonishing that this kind of obstruction to the development of an innovation in Germany was still possible in the year 1938.”<sup>48</sup>

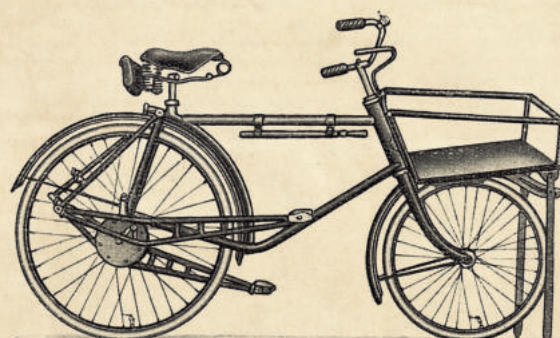
↓ The Woerner bicycle was available in six different basic versions. From racing bike to delivery bicycle, there was a broad selection for prospective customers.

Eugen Woerner had also had his “Chainless cycle with pedal levers” patented in Japan, Italy, Holland, Belgium, France, Poland, Finland, Sweden, Switzerland, Spain, England and the

- 1907
- 1931
- 1959
- 2001
- 2022



**Woerner-Straßen-Rennrad**  
Bestellwort: „Woestra“



**Woerner-Traglastrad**  
Bestellwort: „Woetrag“

United States of America. In 1938, production of the Woerner bicycles gradually gained speed. But a clear signal was sent when the younger workers were called for military service and the mass production of armaments began. When the war started in September 1939, production of the bicycle had to be stopped in favour of orders for the war effort.<sup>49</sup>

### **OIL BARRIER FOR THE GERMAN NATIONAL RAILWAY**

Despite the preoccupation with the bicycle, oilers remained the core business of the Woerner-Oeler-Fabrik, and there were many new developments in this area too. D, ROLV and LHW models were added to the range of oilers. The last two were mainly used in locomotives. The ROLV model was an “extraordinarily powerful and sturdy high performance oiler”,<sup>50</sup> according to the product information sheet. It was constructed for the lubrication of heavy locomotives, large steam machines, ships engines and high pressure compressors, and was designed for counter-pressures of 500 bar and more. The addition of diaphragm high-pressure oil barrier 6429 to the oil barrier range also ensured further orders for the Woerner-Oeler-Fabrik from its biggest customer, the National Railway, from 1936.

Until this time, Eugen Woerner had been able to manage his business largely unaffected by National Socialism, but things were about to change. In spring 1936, he received an unpleasant visit from one Gestapo officer from Stuttgart and two from Berlin. The company representative in Berlin had been arrested – it’s not known why – and, as Eugen Woerner wrote later in a statement, had died “of a ‘heart attack’ while in custody”<sup>51</sup>. It was not possible to establish a connection between this incident and his business, but as special manufacturer for the National Railway, it was suggested that Eugen Woerner should join the party. He wouldn’t tolerate an acting director above him, but wanted to continue to run his company at his own

discretion, as far as possible. Therefore, from spring 1937, Eugen Woerner paid a monthly subscription of 8 Reichsmarks for membership of the party.

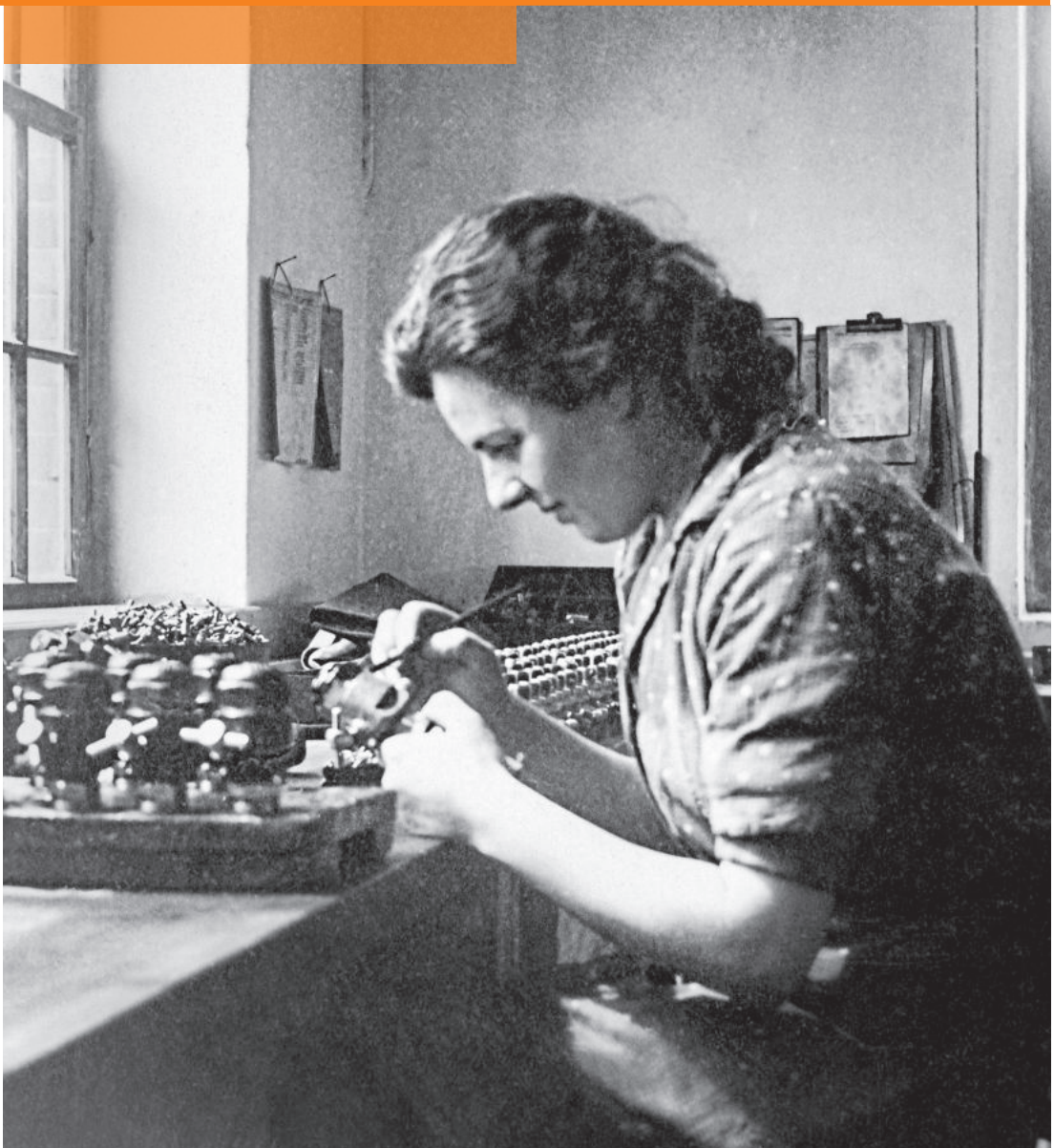


→  
The oil barriers were designed at the drawing board. And the same was true for the National Railway during the Nazi period.

When the war started, the Nazi regime dictated precisely who would produce what. From 1942 to the beginning of 1945, 48 company employees as well as about 20 forced labourers were employed in the Woerner-Oeler-Fabrik manufacturing diaphragm oil barriers for the locomotives of the National Railway. The workers came from Yugoslavia, Poland, Ukraine, France and Belgium.<sup>52</sup> Production of oil barrier 6429 alone made up 90 percent of sales. During the war years, profits continued to rise but came at the price of the one-sided focus of the

company. Investments in new inventions, which had always proven their worth as economic safeguards during the crisis years, were not permitted. There are only a few sources detailing the living conditions of the forced labourers at the Woerner-Oeler-Fabrik. Contemporary witnesses, such as a married couple from Yugoslavia, reported on efforts by the Woerner family to treat all employees equally and help them in emergency situations, such as times of illness.<sup>53</sup> The Woerner family and all company employees – including the “foreign workers”,

↓ Focused on work: An employee producing oil barriers.



1907

1931

1959

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2022

as the forced labourers were called at that time – were said to have sat together to eat the same meal at lunchtime.<sup>54</sup> There are also statements about arbitrary treatment by the foreman of the Woerner-Oeler-Fabrik. He is said to have assigned the “dirty” work to the forced labourers and threatened them with violence.<sup>55</sup> In 1943, Eugen Woerner dismissed the foreman.

### THE FACTORY IN RUINS

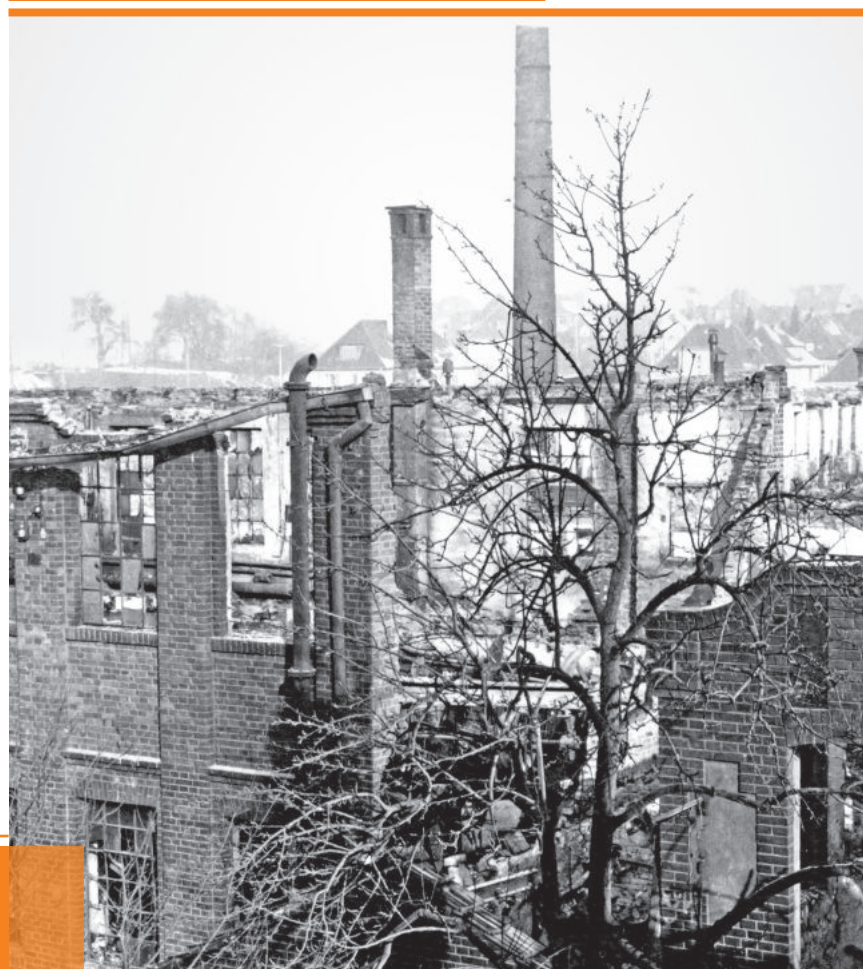
On the morning of 21st February 1944, 550 allied bombers flew to Stuttgart and left great devastation in Bad Cannstatt, Feuerbach and Zuffenhausen.<sup>56</sup> Woerner’s premises were also hit by the bombs. Only the foundation walls of the company buildings were left standing, but thankfully the Woerner family’s home was spared, with only its roof structure being burned out.

“It was a tough blow for our popular boss, that his life’s work was extinguished in one night,”<sup>57</sup> said Alfred Dürr in relation to the devastating condition of the factory. But Eugen Woerner confronted the ordeal. In icy conditions, just a day after the attacks, the workforce began to clear the rubble to the side. The clean-up effort took weeks. The machines, exposed to the weather, began to rust. Scorched walls were rebuilt with still usable bricks from other parts of the building and, as of August 1944, a roof once again protected the people and machines. Offices for sales and purchasing, the technical draughtsmen and bookkeeping were set up in the residential house.

To safeguard oil barrier production, Eugen Woerner rented a workshop in Linsenhofen, about 40 kilometres away. The necessary automatic machines, revolving benches and test benches were transported there in the early morning a short while later, in order to avoid hostile low-flying aircraft. The war was still to last another year. During this time, air raids by the allied forces became increasingly frequent and violent. On 19th April 1945, the bombing of Stuttgart ended. In total, there had been 53 attacks on the city, killing over 4500 people and destroying more than half of the buildings.<sup>58</sup>



↑ After the bombing, it was not only the hardening plant that was destroyed, but ...



→ ... the entire plant lay in ruin. The clean-up effort began immediately.

# DIFFICULT NEW BEGINNINGS AFTER THE SECOND WORLD WAR

## COMMENCEMENT OF WORK UNDER THE OCCUPYING FORCES

When the French army occupied Stuttgart on 21st April 1945, three difficult days followed for the inhabitants. Rapes, arrests and plundering were the order of the day.<sup>59</sup> Anything that wasn't nailed down, was removed. "The soldiers even took tools and small machines out of the factory [...]"<sup>60</sup> recalled Sigrid Woerner of the horrors of this time. Businesses were closed and employees sent home.

Already in spring 1944, Eugen Woerner had begun the preliminary work to introduce the oil barrier 6429 to the French railway company SNCF via his representative in France, with whom he

had been working closely for 16 years. They were waiting for the end of the war before beginning direct negotiations. On 30th April 1945, Eugen Woerner petitioned the French armed forces regarding the resumption of production. He stated that he wanted to produce the "soupape à membrane Woerner" (Woerner diaphragm valve, in this case oil barrier 6429) for France. He stressed the urgency in his letter by stating: "These valves are as necessary for locomotives as spark plugs are for cars."<sup>61</sup> On 8th May, he received the approval he needed.

After the end of the war, Eugen Woerner and the 16 employees listed – including Marie and Sigrid Woerner – resumed work.

*Personalliste: Hand 1945*

Name	Geburtsdag	Stand	Wohnort	Wohnung	abgegebenes Zeugnis	eingemittelt am	Beschäftigung				Anst.	1941	1942	1943	1944	1945	Anst.	
							Art	Ort	1941	1942								
Wöringer, Fr.	16.8.13	n./l.	1.1.22	Seierobst.	Mechaniker	Mechaniker	1	1	1	1	1	1	1	1	1	1	1	1
Gierst, Alfred	23.10.04	n./l.	8.1.22	Kühlhausstr. 33	Mechaniker	Mechaniker	1	1	1	1	1	1	1	1	1	1	1	1
Glaininger, Carl	21.3.09	n./l.	12.4.33	Am Leontop.	Mechaniker	Mechaniker	42	1	1	1	1	1	1	1	1	1	1	1
Große, Hermann	27.8.31	led.	15.9.27	Stüttgast. 97	Kaufmann	Kaufmann	15	1	1	1	1	1	1	1	1	1	1	1
von Hofen, Peter	20.9.30	n./l.	21.8.36	Ad. Carstall.	Werkzeugmacher	Werkzeugmacher	1	1	1	1	1	1	1	1	1	1	1	1
Kress, Seb.	11.11.58	n.	1.9.27	Am Leontop.	Kaufmann	Kaufmann	15-39	1	1	1	1	1	1	1	1	1	1	1
Klaub, Adam	15.3.87	n.	1.2.34	Seierobst.	Formen	Am. Paker	43	1	1	1	1	1	1	1	1	1	1	1
Hilberberger, Paul	12.2.12	led.	15.2.44	Kiefernstr. 87	Kaufmann	Kaufmann	33	1	1	1	1	1	1	1	1	1	1	1
Wöhr, Edwin	21.7.17	led.	3.4.33	Ad. Carstall.	Mechaniker	Mechaniker	39	1	1	1	1	1	1	1	1	1	1	1
Schmid, Carl	10.3.90	n.	21.8.27	Ad. Carstall.	Formen	Formen	1	1	1	1	1	1	1	1	1	1	1	1
Wetz, Emil	16.11.00	n.	16.1.35	Ad. Carstall.	Mechaniker	Mechaniker	1	1	1	1	1	1	1	1	1	1	1	1
Feldhaus, Alfred	3.11.18	n.	9.8.19	Seierobst.	Kaufmann	Mechaniker	1	1	1	1	1	1	1	1	1	1	1	1
Fricker, Jos.	3.12.02	n./2.	4.7.27	Seierobst.	Arbeiter	Arbeiter	1	1	1	1	1	1	1	1	1	1	1	1
Kunze, Otto	8.10.92	n./5.	26.6.39	Seierobst.	Arbeiter	Arbeiter	1	1	1	1	1	1	1	1	1	1	1	1
Woerner, Marie	8.1.90	n./1.	Aug. 32	Seierobst.	Werkzeugmacher	Werkzeugmacher	1	1	1	1	1	1	1	1	1	1	1	1
Woerner, Sigrid	5.6.27	led.	1.2.45	Ad. Carstall.	Werkzeugmacher	Werkzeugmacher	1	1	1	1	1	1	1	1	1	1	1	1
May, Josef																		

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That June, the subsidiary plant in Linsenhofen was dissolved and the machines, raw materials and finished parts were transported back to Feuerbach. But it was still not possible to continue working; there was not enough wood to fire the two industrial furnaces. A submission to the “Wood–Coal” Office resulted in permission to dig out tree stumps at two allocated places. The entire workforce got involved in the two-week long campaign. It was exhausting work – the more so since food was strictly rationed.

On 8th July 1945, American troops arrived in Stuttgart and took over the occupied zone from the French. On 25th August, Eugen Woerner once again received permission, this time from the Americans, to continue running his company. In the October, he had to resign from his position as company owner due to the measures to “cleanse the economy”. He granted his wife Marie Woerner powers of attorney. Only in 1947, after completing the denazification process, in which he had been classified as a follower, was Eugen Woerner allowed to return to the company.<sup>62</sup> There were orders to be processed, but there was a shortage of labour, and production was made difficult by delayed deliveries of raw materials.

#### **THE END OF PRODUCTION FOR THE GERMAN NATIONAL RAILWAY**

“Businesses popped up overnight, brimming with shoes, textiles, lots of items from daily life, that we hadn’t seen for many years. And there was also plenty of food,”<sup>63</sup> recalled Sigrid Woerner on 20th June 1948. On that Sunday, 40 D-Mark per head were exchanged for 40 Reichsmark as a one-off. But the currency reform didn’t initially bring about the desired economic upswing. Many companies had to postpone urgently required investments and implement streamlining measures. “100 Reichsmark had turned into 10 Deutsche Mark – this devaluation had to be absorbed first,”<sup>64</sup> said Sigrid Kärcher, describing the financial situation.



→  
Eugen Woerner ensured that his business was up and running as quickly as possible: Here is technician Böhringer working at the drawing board.

Werter Herr Woerner!

Im Auftrage der Belegschaft gratuliere ich Ihnen herzlich zu Ihrem Geburtstag.

Wir wünschen Ihnen fernerhin Gesundheit und Wohlergehen mit Ihrer Familie.

Diese Gelegenheit benützen wir gleichzeitig um Ihnen an Ihrem heutigen Ehrentage

zum 25jährigen Geschäftsjubiläum

die besten Glückwünsche zu entbieten.

Die Belegschaft dankt Ihnen für die vorbildliche Betriebsführung. Manche Freude durften wir während der verflossenen Zeit mit Ihnen teilen, aber auch mancher Sturm ist über uns gegangen. Das Fabrikgebäude ein Trümmerhaufen. Hoffnungslos?

Da waren Sie es Herr Woerner, der den Mut nicht sinken liess und trotz des schweren Verlustes Ihrer Lebensarbeit, uns Vorbild waren. Setzen wir doch im Jubiläumsjahr den ersten Stein am Neubau unseres Betriebes unter Ihrer bewährten Führung und unserer Mitarbeit.

An Ihrem heutigen Ehrentage ist dies der aufrichtige Wunsch der Belegschaft der Woerner-Oeler Fabrik Eugen Woerner Stuttgart-Feuerbach.

Im Auftrag der Betriebsrat



On 21st June 1948, the Woerner-Oeler-Fabrik's business was running as usual and there was even a good mood regarding the order situation: The volume of orders for the National Railway had increased to 20,000 diaphragm oil barriers and so it was believed that it would "soon become one of the most reliable and financially strong customers".<sup>65</sup> Piecework was specified, in order to be able to work through the order. But the situation changed abruptly in March 1949, leading Eugen Woerner to call an extraordinary company meeting. He explained the precarious situation based on the volume of orders and incoming orders as well as customer notifications from the last 14 days. The commercial clerk, Heinrich Kiess, wrote the following in the minutes: "In view of this, it is concluded that this sudden crisis not only affects us, but the industrial world in its broadest sense."<sup>66</sup>

In order to keep the company going and, as far as possible, to retain the experienced and well-trained stock of company employees during the crisis, short-time working was introduced – "to the point that the people could gain access to short-time worker aid"<sup>67</sup>. They knew it was unavoidable that core employees would leave the

↑ 8th July 1947: The director's birthday and 25th anniversary of the company – the workforce hoped for reconstruction of the company.

company if they were able to find full-time employment elsewhere. During this time, the number of employees dropped from 25 to 12.

In the Federal Republic of Germany, founded in May 1949, the German National Railway became the German Federal Railway, which remained a customer of Woerner-Oeler-Fabrik. But the volume of orders fell sharply. Records from 1955 show that the oil barriers, primarily for spare parts and repair deliveries, only made up 10 percent of sales.<sup>68</sup> In the 1950s, the shift to railcars and electric locomotives initiated the end of the oil barrier business for steam locomotives. "In 1970, there were only very few steam engines. Then later there were requests for museum locomotives, which we still supplied," said the later managing director Hans-Otto Dewes regarding the changing times. "External conditions were also changing. A large branch of WOERNER's sales became obsolete."<sup>69</sup>

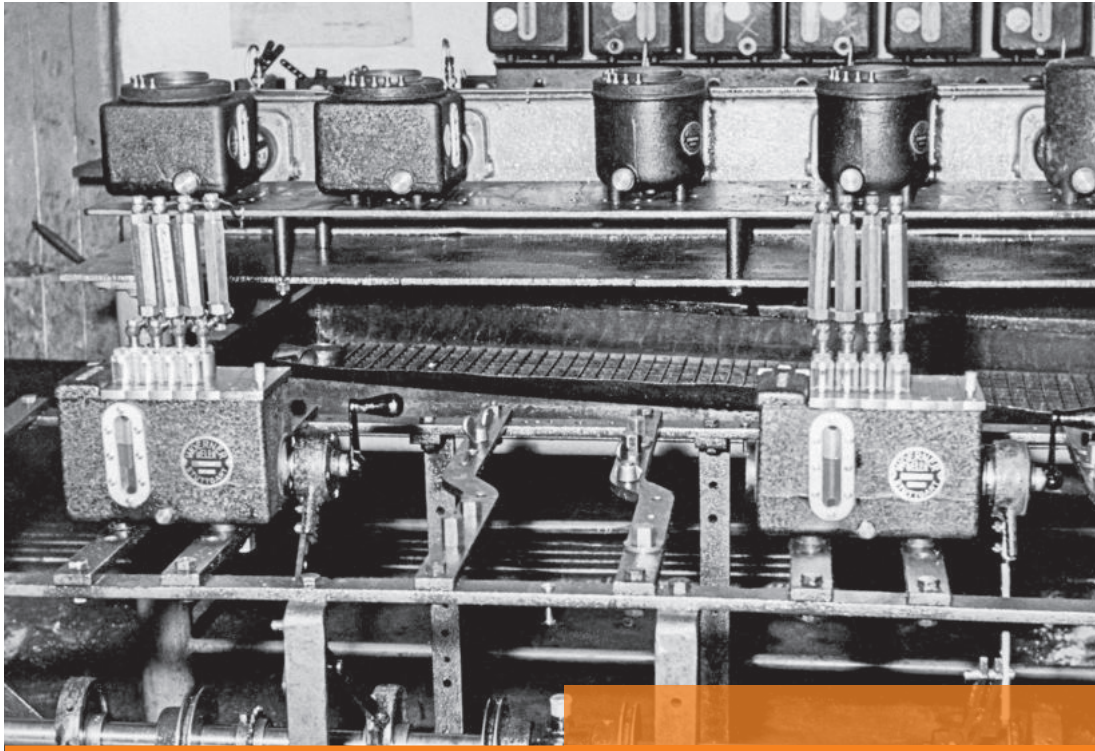
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↑ Tested for quality: The Woerner oilers and lubricators are literally on the test bench, 1952.

## NEW PRODUCTS AND PLANS FOR EXTENSION DURING THE ECONOMIC BOOM YEARS

The company therefore began to focus on the production of lubricating pumps again. In the post-war years, Eugen Woerner had once again turned his attention to his passion – invention – and submitted and was promised more patents and industrial designs than in the first 20 years of his self-employment. The hydraulic lubricating pump for modern machine tool construction supplemented the product range alongside the mechanical lubricating pump. Soon, the customer base was also extended. Customers



→ As visitors to the Hanover trade fair in May 1952. From left to right: Mr Lehenbauer, Eugen Woerner, M. Stoschek, Sigrid Kärcher, Mr Braun, Mr Ritzka, Mr Glaunsinger.



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for the oil and grease lubricating pumps and accessories included the manufacturers of steam and ceramic machines as well as businesses in pump and compressor construction, machine tool construction and textile and construction machinery construction.

In 1951, the company once again had 50 employees. The grease lubricating pump shifted into focus when customer requests for a model with a 4 kg capacity piled up in 1952. Its development during the 1950s soon proved to be so successful that the commemorative publication on the occasion of the company's 50th anniversary in 1972 referred to it as the "Golden Lubricator",<sup>70</sup> based on the "Golden Oiler". Since the beginning of 1956, the production branch for grease lubricating pumps was given a new company name – Woerner Oeler- und Fetterfabrik Eugen Woerner.

#### **MORE SPACE FOR PRODUCTION: PLANS FOR EXTENSION IN FEUERBACH**

Since the bombing in 1944, the reconstructed factory hall had been being used provisionally for production. Now that the factory building only had one floor, it was difficult to expand production, which was one of Eugen Woerner's aims, in particular with regard to delivery obligations abroad. Eugen Woerner wanted to turn the three war-damaged individual buildings into a single structure. In 1946, he submitted the first building application. But in 1947, restoring the Woerner's villa took priority.

On 19th April 1950, Eugen Woerner once again submitted a building application and, at the same time, another: He considered the reconstruction of the Friedrichswahl inn to be "expedient and also urgently necessary"<sup>71</sup>. Always abreast of the times, he was planning a "Car Service Hotel" for business travellers who had appointments in the surrounding industrial areas. The volume of traffic had increased significantly in the meantime. However, this was also one of the reasons behind the planning of the new Zuffenhausen ring road.



↑ Company Christmas party 1954: Eugen Woerner between his successors Sigrig Kärcher and Alfred Kärcher.

Given the two busy roads adjacent to the factory, this transport project would affect the Woerner-Oeler-Fabrik. Both of Eugen Woerner's building applications were therefore rejected due to the imposed building ban.<sup>72</sup> Eugen Woerner appealed and had his architect adapt the plans to the planned course of the ring road. In the meantime, on 19th January 1951, he received approval to establish a provisional, single-storey office building. For the last time, he submitted the application for a three to seven-storey factory building on 19th March 1955.

← A community not only in the workplace: The employees on a company excursion to Mainhardt Forest in June 1952. Front left: Eugen Woerner.



**Warum . . .**

**ja, warum plagt und müht sich dieser Mann?**

Er hat noch nicht erkannt, welche Vorteile ihm die lötlöse **WOERNER**-Rohrverschraubung bringt, ganz gleich, ob als **WOERNER**-Gerade-Verschraubung oder als **WOERNER**-Winkel-Verschraubung usw.

↑ The advantages of the solderless pipe connection were promoted impressively, 1950s.

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#### **CHANGE OF GENERATIONS IN 1956**

When Eugen Woerner died on 30th December 1955 at the age of 70, the company lost its beloved senior director and the man who had previously promoted inventions and developments. Overnight, his daughter Sigrid Kärcher and son-in-law Alfred Kärcher, who had married in 1951, became his successors. Eugen Woerner and Marie Woerner had trained them well. At just 27 years of age, Alfred Kärcher was now managing director of the Woerner Oeler- und Fetterfabrik.

Eugen Woerner had left them further inventions and designs for the years to come. In 1956, Alfred Kärcher was able to launch the solderless

pipe connection, whose development had been put on the back burner during the Second World War. Competitors were already offering a similar product in the meantime. But the one from WOERNER guaranteed a particularly high level of sealing: In contrast to competitor products, its sealing cone was symmetrical to make assembly easier and therefore rule out leaks due to incorrect assembly. A broad seal was achieved by the conical bevel on the WOERNER sealing cone and any leaking due to vibrations was counteracted by a long pipe connection.

The sale of the solderless pipe connections came at just the right time. Customers who

purchased only pipe connections now joined the customers who purchased pipe connections as well as lubricating pumps. Within three years, the percentage share of sales rose from 12 to 23 percent. This compensated for the sales from lubricating pumps, which had been falling since 1957.<sup>73</sup>

Sigrid and Alfred Kärcher also hoped for a significant increase in sales through the design of a new product line. In the mid-1950s, they had begun developing lubrication systems for table and slide tracks of machine tools. The machine tool industry had changed – moving more towards automation. Production lines took on the role of 30, 40 and more individual machines and enabled a quick succession of workflows when employing just one or two workers.

The central task of lubrication was to use an oil film to cause the table or other moving machine part to float, in order to prevent contact between the sliding surfaces. Precise lubrication was crucial for the accurate and productive work of the machine tool.<sup>74</sup> Under Alfred Kärcher, the Type P3 oiler was developed, which continuously supplied an oil film of 1 to 2 µm thickness to transfer lines with approximately 20 to 30 workstations. The exact dosing at each guide track surface in short intervals and with small delivery volumes offered the advantage that the oil was used efficiently and therefore the work machine was not subject to unnecessary contamination.<sup>75</sup>

To significantly increase sales, Alfred and Sigrid Kärcher relied on streamlining and modernisation: They did this by constructing new production tools and devices and installing more efficient machines. The next step was the application of standards and types to the pumps, pump parts and pipe connections. Expansion of the manufacturing rooms proved unavoidable for further streamlining of the production workflows.



→  
Lubricating pumps on a journey: Employee Mr Herrling packing a delivery for international business, destined for Dublin in the Republic of Ireland.

## A BRIEF HISTORY

### THE SECOND GENERATION: SIGRID KÄRCHER, (NÉE WOERNER), AND ALFRED KÄRCHER

The workforce considered Sigrid and Alfred Kärcher to be fair, thorough, cautious and determined, and they knew from the outset how to manage the company successfully in their own way.

On 1st September 1944, at 17 years of age, Sigrid, then still a Woerner, joined the Woerner-Oeler-Fabrik as a commercial clerk. Her father Eugen Woerner, with whom she shared a close relationship, would have happily sent her to study mechanical engineering. But during the bombing of Stuttgart in the Second World War, he wanted the family to stay together. In 1948, Sigrid Woerner was promoted to bookkeeper. That same year, Alfred Kärcher abandoned his architectural studies because of his love for her, and also joined the Woerner-Oeler-Fabrik as a commercial employee on 18th October 1948.



↑ A family affair: Sigrid and her father  
Eugen Woerner, around 1930.



While Alfred Kärcher was responsible for the technical production process after Eugen Woerner's death, Sigrid Kärcher was responsible for finance. In order to remain competitive, the young couple decided to relocate the company to Wertheim in 1959. The new larger site would facilitate the streamlining measures that had already been initiated in Stuttgart-Feuerbach. Two of their children, Sabine and Matthias Kärcher, were born in Stuttgart in 1955 and 1958, and the third, Andreas Kärcher Sr, was born in Wertheim in 1966.

### THE "WOERNER FAMILY" CAME FIRST

Sigrid and Alfred Kärcher's far-reaching social commitment towards their employees was demonstrated, amongst other things, through the introduction of a company pension scheme. The staff referred to Sigrid Kärcher as their "Sozialtante" – a light-hearted reference to her 'bleeding heart' attitude to helping others.<sup>76</sup> "At first she was rather put out, but eventually she bore the name with pride," recalled Hans-Otto Dewes, who later became managing director.<sup>77</sup> Alfred Kärcher also always saw the employees as part of the big "WOERNER family". He enjoyed organising company excursions, which remained positive memories for the participants for a long time. He also took part in company sport. Long-standing employee Franz Stoess still remembers tennis matches followed by a trip to a restaurant.

In 1984, Alfred Kärcher retired from the management of Eugen Woerner GmbH & Co. KG Zentral-schmieranlagen. Sigrid Kärcher was now the managing partner. She was supported by managing director Hans-Otto Dewes. Her children also gradually took on important roles in the company.

In 2004, Sigrid Kärcher and Hans-Otto Dewes, who also retired that year, handed over their business to Sven Schultheis. Three years later, at the age of 79, Sigrid Kärcher finally turned her back on her working life and entrusted her responsibilities to the next generation – her three children. Until her death in 2017, Sigrid Kärcher remained closely connected with the company through her commitment to the "Pensioner's Club".

↑ Newly-wed: Sigrid and Alfred Kärcher (left) at their civil wedding ceremony in 1951. Among the guests were the married couple Carmen and Rolf Braun (right).  
↓





# 1959–2001

THE START OF SOMETHING  
NEW IN WERTHEIM: BECOMING  
A COMPLETE PROVIDER OF  
CENTRAL LUBRICATION SYSTEMS

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EINFAHRT  
FA. WOERNER



The new beginning in Wertheim brought with it an upswing: Several times, the Woerner Oeler- und Fetterfabrik expanded the company building "Am Eichamt 8".

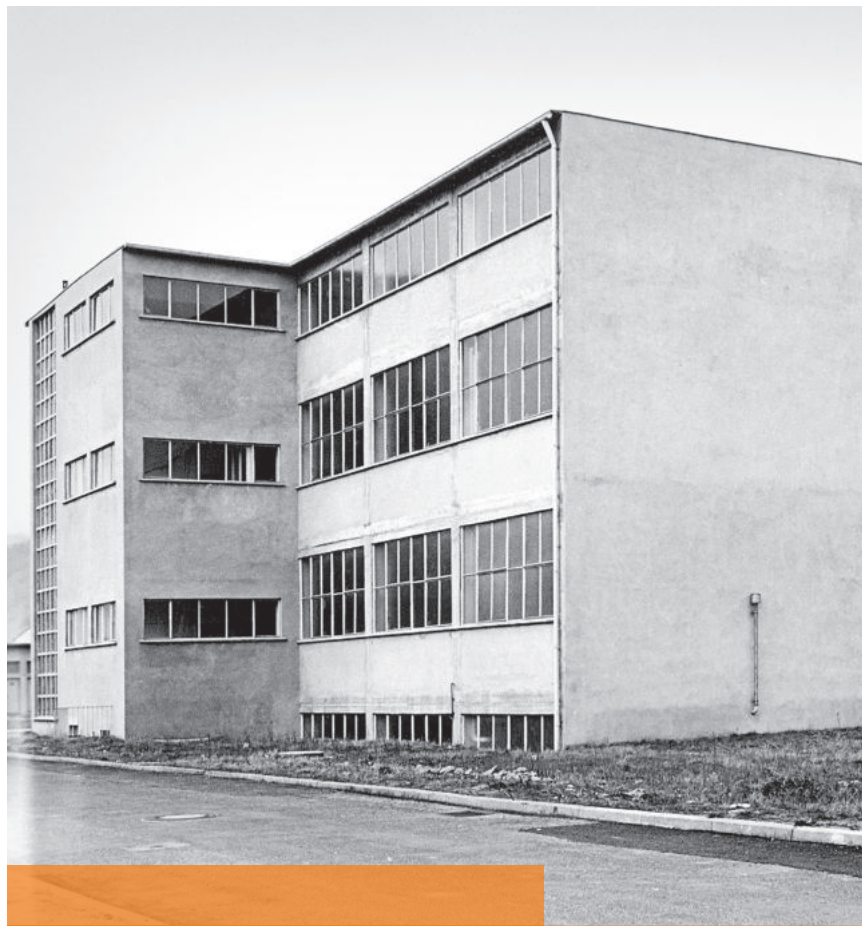
**With a major contract for a central lubrication system with lubricant monitoring for the Volkswagen plant in Wolfsburg, 1964 began with strong growth. The company building in Wertheim, into which the Woerner Oeler- und Fetterfabrik had relocated in 1959, was therefore soon extended. Over the next few decades, there were many innovations in the field of lubrication systems and their control options. Engineer Hans-Otto Dewes joined the company in 1970 to help with technical matters and became managing director in 1976. At the beginning of the new millennium, WOERNER had positioned itself with sales representatives worldwide and had established itself as a manufacturer of complete central lubrication systems.**

## BOUND FOR WERTHEIM

On 1st July 1959, the Woerner Oeler- und Fetterfabrik officially began its work at the new site in Wertheim. Thirteen employees also made the move from Stuttgart to northern Baden: Two commercial employees and three technical employees, one foreman, three setters, two tool-makers, a helper and a travelling engineer. The relocation was preceded by extensive preparations after the Kärchers had both signed the purchase contract on 3rd March 1959.

Another document bears the same date: On this day, Sigrid and Alfred Kärcher sold the company premises in Stuttgart-Feuerbach to the city of Stuttgart and thereby drew a line under the years of wrangling about the building approval.<sup>78</sup> The married couple was looking for a long-term solution to the healthy growth of its company.

The shortlist included Weikersheim, a smaller town in the same district as Bad Mergentheim in which growth measures were promoted. But a new building would have been required there. In Wertheim-Bestenheid, in the Tauberbischofsheim industrial district, the Hennings & Zimmermann glass factory had been constructed in 1956/57. The now disused company site offered a usable area of 1571 square metres; the usable area in the Stuttgart-Feuerbach site had been 1080 square metres. The additional space would improve internal



↑ The new building of the Hennings & Zimmermann glass factory from 1956 remained shut down – until the Woerner Oeler- und Fetterfabrik took over the building three years later.



↑ Before relocating to Wertheim, new employees had already been recruited on-site. This ...

transport so much that production costs could be reduced by at least 10 percent.<sup>79</sup> Not only that, but the building had also already been planned with capacity for expansion. Additional floors could be added to the four floors that were connected by a 7 square metre goods lift. The company premises were accessible by a factory road with two access options for trucks.<sup>80</sup>

Due to the glass industry that prevailed there, Wertheim was interested in the arrival of another

metal processing business to improve the economic structure. And the Woerner Oeler- und Fetterfabrik was able to operate independently of other processing plants – in particular as they intended to carry out surface treatment work such as bonding, burnishing, phosphating, cadmium plating, varnishing and hardening internally.

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↑ ... meant production could be resumed immediately on the machines that, for the most part, had also been relocated.

In Wertheim, new employees were recruited. With 50 employees, the workforce was just as big as it had been in Stuttgart. The machines were transported to Wertheim at the beginning of June, recalls Franz Stoess, who also made the move. On 1st July 1959, the administration department was also set up on-site. The 13 members of staff from Stuttgart were able to move into four apartments straight away. The rest of the staff commuted. Alfred Kärcher and Hans-Wilhelm Ladner – responsible for Sales and Shipping at the time – had cars: “On Fridays we packed up and early on Monday mornings we travelled back from Stuttgart,”<sup>81</sup> said Franz Stoess. Alfred Kärcher knew how to make the

best of the to-ing and fro-ing, as described by foreman Alfred Dürr: “Every Friday, we stopped at a beer garden in Höpfingen, in the district of Buchen. We had great fun over ribs and a couple of beers. Our boss, Mr Kärcher, always paid.”<sup>82</sup>

For the city slickers from Stuttgart, the relocation to the placid town of Wertheim was quite a change. But most of them soon came to terms with the new conditions and even enjoyed them. Franz Stoess recalls that a few of the younger employees returned to Stuttgart after one or two years, but the others – like the company – became natives of the most northerly town in Baden-Württemberg.

## UPTURN AFTER THE NEW BEGINNING

WOERNER, a metal processing business, found its new site where the Tauber flows into the Main, surrounded by the Spessart hills and the Odenwald – right in the middle of the glass industry that had dominated the area for almost ten years. It was only after the Second World

War that Wertheim developed into an industrial location due to the influx of displaced persons and refugees. The town attracted many glass factories, especially from the Thuringian Forest, which wanted to escape the centralised economy of the GDR after 1949.<sup>83</sup>



↑ The company building of the Woerner Oeler- und Fetterfabrik was right in the centre of the “glass quarter” in around 1959.

Many of the new residents found work in the “glass quarter”, as the district of Bestenheid was called.<sup>84</sup> And it was here, at the Am Eichamt 8 address, that the Woerner Oeler- und Fetterfabrik now opened its doors.

Over time, all “WOERNER Swabians” from Stuttgart found a place to stay in Tauberfranken. The Kärcher family – with their children Sabine and Matthias – initially rented in Faulbach. At the beginning of the 1960s, they moved into their newly built house in Wertheim. In 1966, their third child, Andreas Sr, was born in Wertheim. The proximity to the factory was a big advantage for the family, according to foreman Dürr: “Because a lot of time was lost on the journey from Faulbach to our factory. Since Mrs Kärcher was responsible for the company’s finances, she too had to travel this long journey twice a day.”<sup>85</sup>

Even while the new employees were still being trained, the number of employees was increased to 70, and new machines were also gradually acquired. The focus shifted to new developments: The Woerner Oeler- und Fetterfabrik’s production range now also included monitoring elements for central lubrication systems.

### BREAKTHROUGH INTO LUBRICANT MONITORING

The Volkswagen plant in Wolfsburg was interested in lubricant monitoring for its body presses. For every hour that they were at a standstill, significant downtime costs were incurred. Three companies, including Woerner Oeler- und Fetterfabrik, were therefore commissioned with developing a central lubrication system with monitoring equipment.

The devices were to be tested in practice from the end of December 1963. In order to meet this deadline, WOERNER worked intensively through the day and often into the night too. On several weekends, in order not to interrupt the car manufacturer’s production, they also travelled to Wolfsburg. The white coats didn’t remain clean for long, and many setbacks resulted in smoking heads and countless cigarette stubs on the floor, according to Alfred Kärcher’s vivid memory of how the development progressed.<sup>86</sup> But time and again there was cause for joy and, in the end,

↑ The testing department in the 1960s:  
↓ This is where the new devices for lubricant monitoring were also tested.



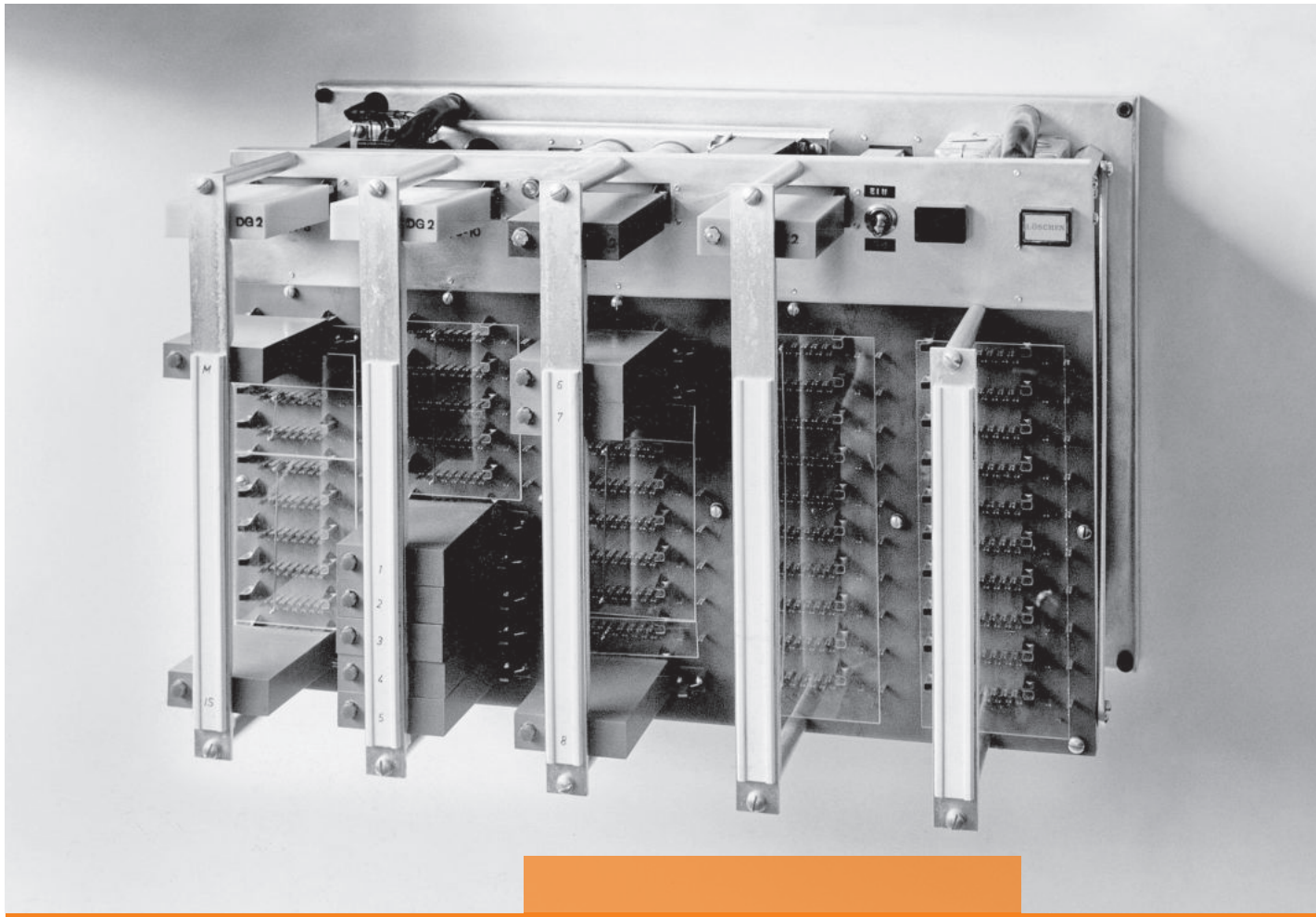
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↑ The SGU-B 500 control device was one of the first electronic control devices from WOERNER.

solutions to all challenges were found: In order to monitor many lubrication points with just a few sensors, they opted for progressive distributor systems. The delivery flow of the pump was initially split into individual strands via an allocator system, in this case a two-pipe system. The progressive distributors then distributed the lubricant into the strands.<sup>87</sup> Directly at the lubrication points, the quantity of lubricant was monitored via flow controllers, called DFK. An electrical connection connected the DFK to the newly developed SGU control unit that displayed every fault in the lubricant flow.<sup>88</sup>

The system was so successful that it was included in the VW design specification: Every new press that was supplied to VW had to be equipped with WOERNER lubrication systems. For the Woerner Oeler- und Fetterfabrik, the contract marked a breakthrough for the reputable company. It not only increased awareness

of WOERNER, but was also the trigger for developing and manufacturing control and monitoring systems for central lubrication systems in-house.

But there is room for improvement in every system! The two-pipe progressive distributor was used until the beginning of the 1970s. In practice, it became clear that the discontinuous oil flow, volume flow restriction and adaptation difficulties during monitoring were limiting the possible uses. New ideas for the allocator were required. The volume flow controller was familiar from hydraulics. Its apertures, with cross-sections of just a few millimetres, didn't seem particularly suitable for coarse lubricant. It's hard to imagine now, but back then, the oil for

lubrication systems was much more coarsely filtered – 60 µm was the standard. WOERNER counteracted the risk of clogging as follows: “Using a double, mutually influencing aperture-pressure balance system, the choke points were enlarged when contaminated, and the dirt could be flushed out.”<sup>89</sup> The VUA model series of self-cleaning volume flow controllers could also be used regardless of viscosity and were suitable for high pressures.

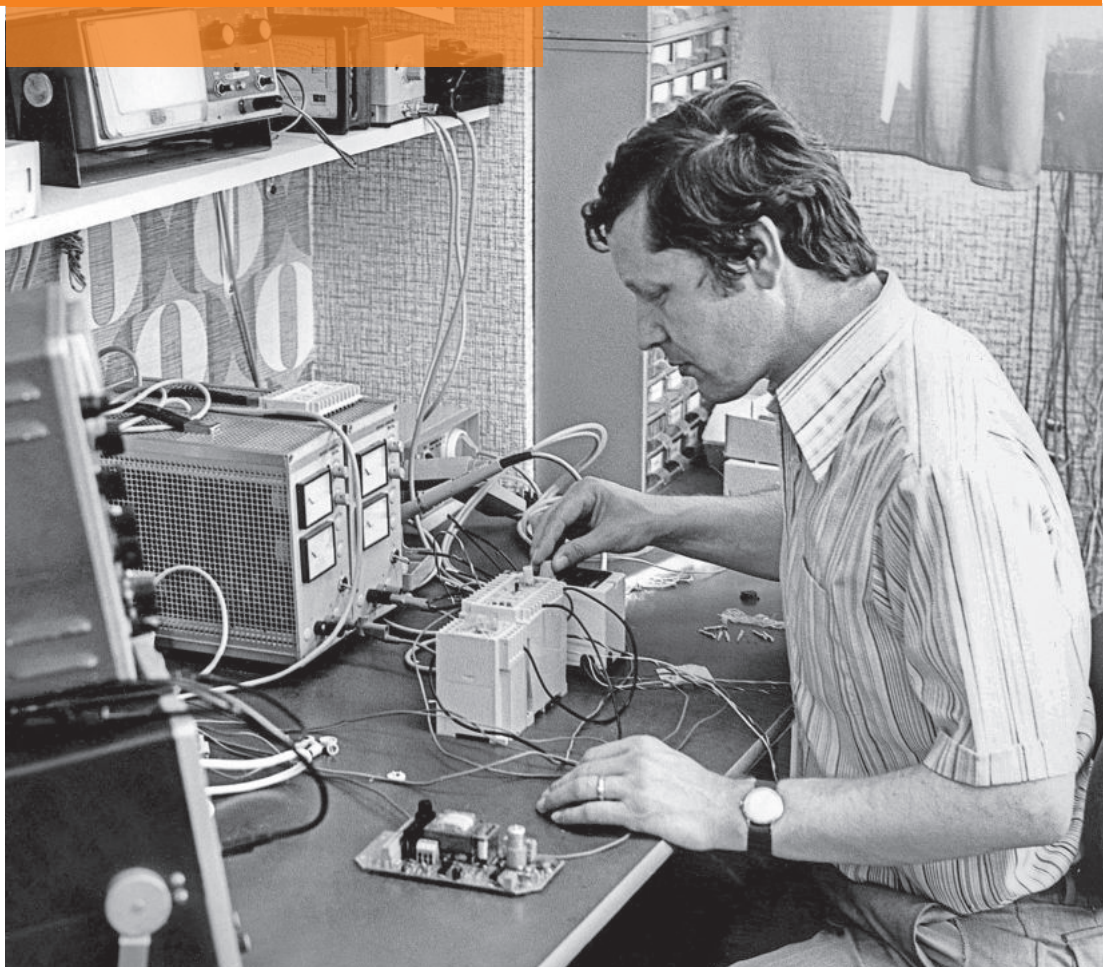
The VUA-B volume flow controllers are still part of the product range today. Allocation through volume flow controllers with subsequent distribution via progressive distributors became the standard solution for oil circulation lubrication systems, in order to supply a high number of friction points, as on body presses.

### FOUNDATION OF THE ELECTRONICS DEPARTMENT AT WOERNER

From pocket calculators to colour televisions – the electronic inventions of the 1960s and 1970s made a significant change to everyday life. The changing times were also felt at Woerner Oeler- und Fetterfabrik.

Whereas the focus had previously been on the production of oil and grease pumps, in which the lubricant was pumped through pipes directly to the friction point, the major contract from Wolfsburg meant that distributor and monitoring systems were developed by WOERNER for the first time. In addition to the design office for the development of central lubrication systems, a further design office for the control devices was therefore established – the electronics department. For the first contract from Wolfsburg, they still needed to “pick up an electrical engineer near Miltenberg en route to VW,” recalled Franz Stoess regarding the advent of electrical

↓ The electronic department was established for the development of the control and monitoring devices.



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engineering at WOERNER.<sup>90</sup> By 1969, there were already twelve employees working on the design of electrical equipment.

The electronic design department worked hand in hand with the design team to equip the central lubrication systems with electronic control equipment. Full of pride, the two departments presented the results of their collaboration at the Hanover trade fair in 1969. On a large 12-metre display board, they showed the workings of the manually operated lubrication pump and the

central lubrication system with fully electronic control and monitoring – transparently in every respect: For illustration purposes, the main components had been produced in perspex.<sup>91</sup>

Different control and monitoring options were shown using different systems as examples. These included a newly designed grease lubrication system for ship cranes, presses and punches. Five control lights provided a visual indication of the monitoring process. If there was a fault, these enabled the fault to be located.<sup>92</sup>



↑ In the 1960s, they visited trade fairs, where WOERNER presented its product range with large display boards.



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Quality has always taken priority at WOERNER. An employee at a measurement device for roughness, roundness and parallel measurements, 1970s.

### THE FIRST OIL/AIR SYSTEM FOR MINIMUM LUBRICATION

It was not only the further-developed control options that were groundbreaking. The oil/air system, globally trademarked as OL, was a crucial innovation in the field of lubrication systems. Minimum lubrication was now possible with less than a drop of oil: In the oil/air line, the drop of oil is pulled apart into a smear. This prevents the production of an undesired oil mist and means the smallest quantities of oil can be transported.<sup>93</sup>

When the Woerner Oeler- und Fetterfabrik presented its development at the conference of the German Society for Tribology in 1971, the young employee who gave the presentation was mocked. The experts in the field of lubrication, who were present at the conference, barely gave this new procedure a chance. But the OL system won through. Today, it is used, amongst other things, where a small, intermittent lubricant supply is not sufficient, and minimum quantities have to be continuously supplied to the friction point. With high-speed bearings in particular, such as the high-speed roller bearings in drilling and milling spindles, it must be ensured that the oil film is not too thick, in order to avoid tension. The heat that would otherwise occur would cause the bearing to overheat and would therefore destroy it. The use of air as the carrier medium also contributes a cooling effect. In addition, the positive air pressure ensures that dirt cannot penetrate the bearing. With the OL system, it was possible to minimise wear: The result of this was a significant improvement in the performance of the machine tools.<sup>94</sup> Further successes were its use in heavy mechanical engineering and in the iron and steel industry.<sup>95</sup>



The GOA-A pump was equipped with the oil/air system for minimum lubrication.

### EVERYTHING UNDER ONE ROOF: STRUCTURAL EXTENSIONS UNTIL 1972

For the first nine years in the new company building at the Am Eichamt 8 address, the employees were distributed across four floors, which were connected by a large goods lift: The ground floor was home to turning, milling, drilling, the tool store and inspection as well as the pipe store in an annex. The first floor was home to assembly, grinding and the finished goods store, while the second floor was where the technical and commercial offices, toolmaking and the testing department could be found. Small parts turning, the raw materials store, the shipping store and the shipping department were located in the basement. The changing rooms and showers were also state-of-the-art. "We really had it good," stressed Franz Stoess, speaking about the significant improvement after the relocation from Stuttgart.<sup>96</sup>





↑ Woerner Oeler- und Fetterfabrik paved the way for future growth in 1972: A new building was constructed on an adjacent plot.

↓ The company building after its extension in 1967.

But it wasn't long before a further extension was required. The major contract from VW meant the number of employees was increased to 80 in 1964, and more space was also needed for the larger fleet of machinery. In 1967, two floors were added to the factory building. On one side, a new wing was also constructed – with four floors and a basement. The extensions to the factory building doubled its area. The company building was now one of the most prestigious factories in the Wertheim district of Bestenheid.<sup>97</sup>

In 1969, which marked the ten year anniversary of being at this site, the company already had 130 employees and rising. The OL system ensured a further upswing and enabled a large number of new application areas for the central lubrication systems, whose development was far from complete. So, in 1972, a workforce of 170 employees celebrated the company's 50th anniversary. That same year, the production and administration areas were extended yet again. This added a further 2500 square metres: Following the purchase of an adjacent plot of land, a new building with basement and ground floor was built there.<sup>98</sup> This paved the way for future growth.

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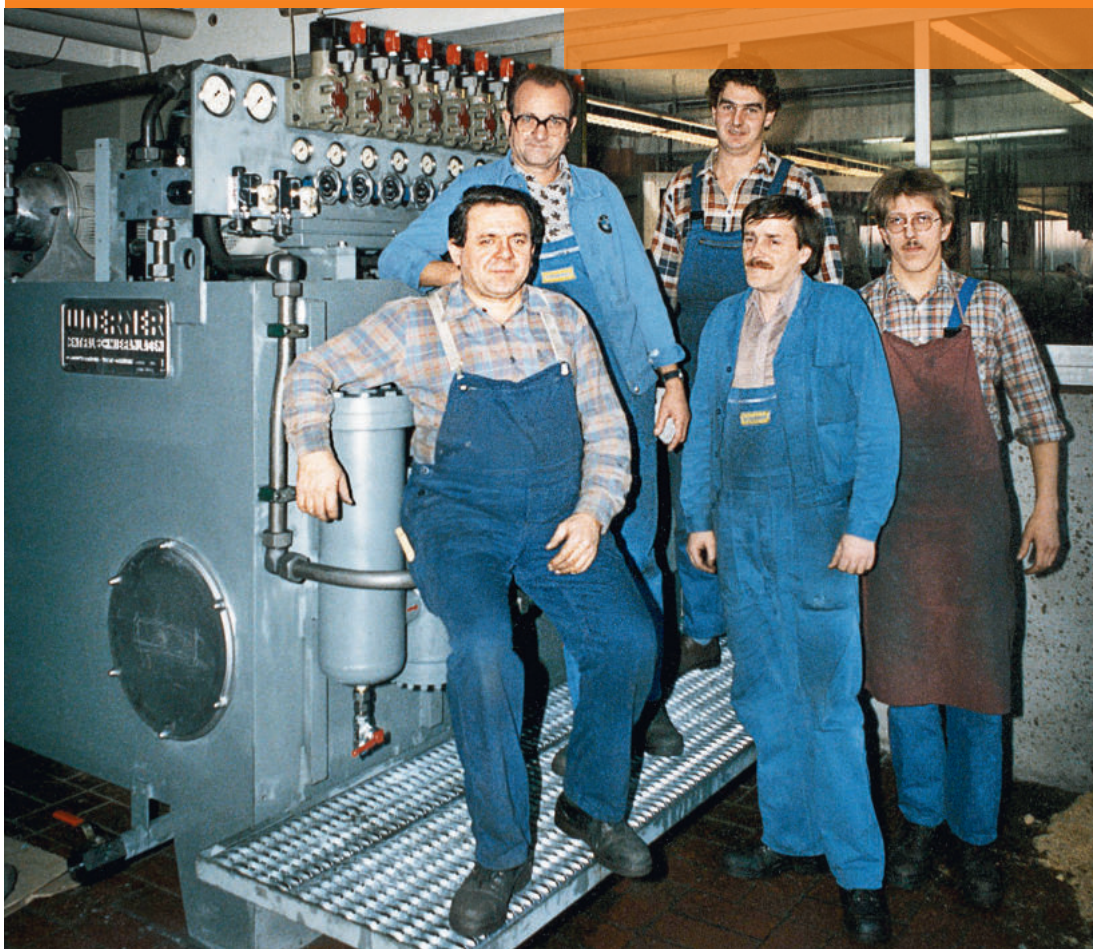


## UPHEAVALS AND INNOVATIONS – EUGEN WOERNER GMBH & CO. KG CENTRAL LUBRICATION SYSTEMS

The 1970s to 1990s, with their economic highs and lows, were times of technical innovation for WOERNER. Important contracts were received not only from the automotive industry, but also from the textile and paper industry as well as the cement, coal and mineral industry. In the last decade, the company had grown significantly: The number of employees in Wertheim had more than tripled. The product range now also included distributors, control and monitoring devices. From 1976, the new company name Eugen Woerner GmbH & Co. KG Zentralschmieranlagen signalled that the company was no longer simply a producer of oilers and lubricators, but was a provider of complete solutions.

There were also changes in the organisational structure of WOERNER. In 1976, Hans-Otto Dewes was appointed managing director. This meant, together with Alfred Kärcher, there were two managing directors at the top of the company, who shared responsibilities and represented each other. Alfred Kärcher was responsible for the commercial area, Hans-Otto Dewes for the technical area, i.e. for design. He was also Head of Marketing.<sup>99</sup>

From Woerner Oeler- und Fetterfabrik to provider of complete solutions: The transformation was also seen in the size of the systems, like this oil circulation unit from 1986.





### HANS-OTTO DEWES' JOURNEY TO MANAGING DIRECTOR

Before Hans-Otto Dewes was appointed managing director, he gained several years of professional experience in the company. When, in 1970, he travelled from Stuttgart to Wertheim for the first time to see Woerner Oeler- und Fetterfabrik, he knew that he could achieve something here – so much, in fact, that he wouldn't have any time left for his doctoral thesis. He had previously been working as a scientific assistant at the Technical University of Stuttgart and his career path there already seemed to be mapped out. But an acquaintance, who was a patent attorney, put him in contact with WOERNER. At this time, Alfred Kärcher was looking for an engineer to strengthen the company in the field of mechanical engineering.

In 1970, Hans-Otto Dewes joined the company as Head of Testing and as assistant to the managing director. Initially, his main focus was on the different lubrication systems, in which he saw potential for expansion and a need for standardisation. Customers and companies were unclear about the designations. "At that time, there was a lot of confusion. The single-pipe system was also called the progressive system, and so on,"<sup>100</sup> recalled Hans-Otto Dewes. In 1972, he was one of the founding members of a committee for

↑ Outstanding quality and excellent advice – that's what WOERNER stands for: Hans-Otto Dewes at a customer seminar in 1983.

the "standardisation of lubrication technology terms" in the Verband Deutscher Maschinen- und Anlagenbau (Association of German Mechanical and Plant Engineering, VDMA).<sup>101</sup> This committee developed uniform designations, e.g. for single-pipe, two-pipe or throttle systems.

The variety of systems, their possible combinations, their advantages and disadvantages, their profitability, in each case taking into account the respective control options, were a broad field. "In order to convey all of this to the customers, I introduced customer seminars," explains Hans-Otto Dewes, linking his design knowledge with marketing.<sup>102</sup> He saw that the selling point of the products lay not only in their outstanding quality, but also in excellent advice. It was important to him for the customer advisors to know "the advantages and disadvantages of the products like the back of their hand"<sup>103</sup>. The two-day customer seminars were held twice a year. During the day, the customers were informed about the technical details of the different systems, and in the evening, they were treated to wine tasting, which was fitting for Wertheim.

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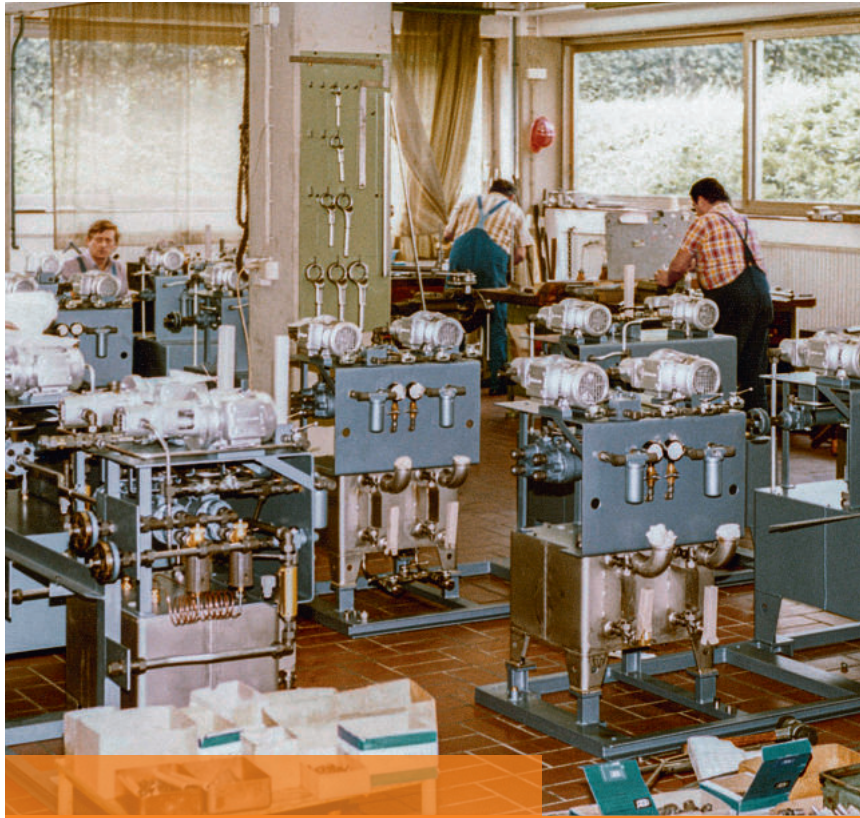
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## MARKET GAP: LUBRICATION SYSTEMS FOR TEXTILE MACHINES

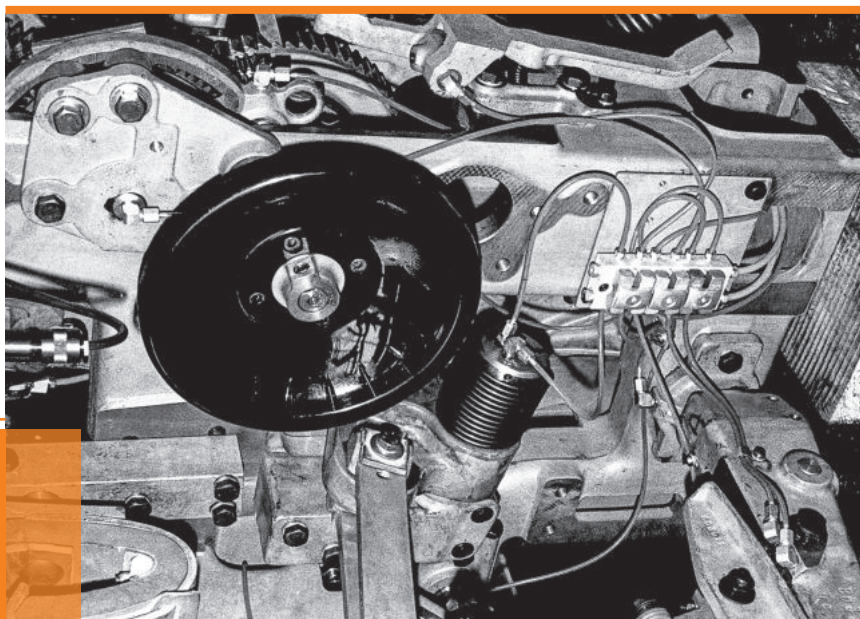
In the anniversary letter on the occasion of the company's 50th birthday in 1972, WOERNER looked back proudly at the different lubrication systems that the product range had to offer. And, of course, the latest development to tap further sales areas was also introduced: A particularly small block element, specifically configured for delivering grease, had been developed for the lubrication of textile and packaging machines – the VZO two-pipe distributor.

By tapping the textile industry, they had therefore succeeded in filling a gap in the market. Until the 1970s, "grease monkeys" were still often found lubricating the many friction points of textile machines by hand, even though the advantage of central lubrication had long since been known – the automatic, accurate, safe lubrication of the machines during operation. But there were technical reasons why few textile machines were equipped with central lubrication systems. The lubrication system itself had to be very small so that it could be accommodated in the compact textile machines as an additional element. It also had to be designed for grease. The grease rings on the sliding bearings of the textile machines prevented the ingress of dirt and therefore reduced wear. If oil was used, there was a risk that it would drip and contaminate the textiles.<sup>104</sup>

In a technical article in 1978, Hans-Otto Dewes explained how the newly developed two-pipe system for textile machines worked: "The pump, controlled by a pinch valve, delivers grease alternately into the two main lines. The line, which is not currently being used for delivery, is connected to the reservoir and is therefore relieved. The alternating pressure in the two main lines actuates the dosing elements."<sup>105</sup> During construction of the lubricating pump, the use of springs was deliberately avoided, as grease – unlike oil – only loosens poorly and irregularly. Thus, the dosing piston was moved solely by the pressure built up



↑ View of the production area in the 1970s. A variety of lubrication systems as well as control and monitoring devices were produced here.



→ The VZO two-pipe distributor was specially developed for grease lubrication in the textile industry. Here, it is installed in a loom from Maschinenfabrik Rüti AG.



Bildes von der  
größten Teilschnitt-  
Maschine der Welt  
mit Woerner  
(was sonst)  
Fa. Paurat (Voerde)  
19.3.87 (AMF)

hat z.zt. H. Einick

by the pump. Dosing was implemented based on the frequency of the pressure change and the dosing volume of the allocated distributor.

Maschinenfabrik Rüti AG, an important loom manufacturer in Switzerland, was an important customer for the VZO distributor element. Until the 1990s, the two companies worked together on further developments.<sup>106</sup>

#### UNIQUE WORLDWIDE – THE SBD-A SPRAY UNIT

Dust, temperatures of up to 1450 °C, humidity, high loads and vibrations, which are sometimes abrupt – the external conditions that must be taken into account when developing central lubrication systems can be extreme, as is the case in the cement, coal or mineral industries. The open gear rings, with which the rotary kilns and mills are driven, have diameters of several metres. Spray lubrication with grease proved to be effective here due to the high dust load.

↑ In 1987, the majority of the world's road-headers were made by Paurat. The manufacturer of mining machines used a WOERNER central lubrication system – what else?

Because wear of the large gear rings turned out to be expensive; the unplanned downtime of a furnace was particularly cost-intensive.

On 13th May 1978, Eugen Woerner GmbH & Co. KG Zentralschmieranlagen applied for a patent for a "spray unit for spraying viscous media and compressed air".<sup>107</sup> Spray units, which spray grease onto the gear rings using air pressure, did already exist. Until that time, it was possible to monitor the air pressure and the lubricant flow. But this did not reveal whether the air was actually escaping at the nozzle, i.e. whether the air was actually carrying along the lubricant and being sprayed on – or if only the lubricant was dripping onto a small area.

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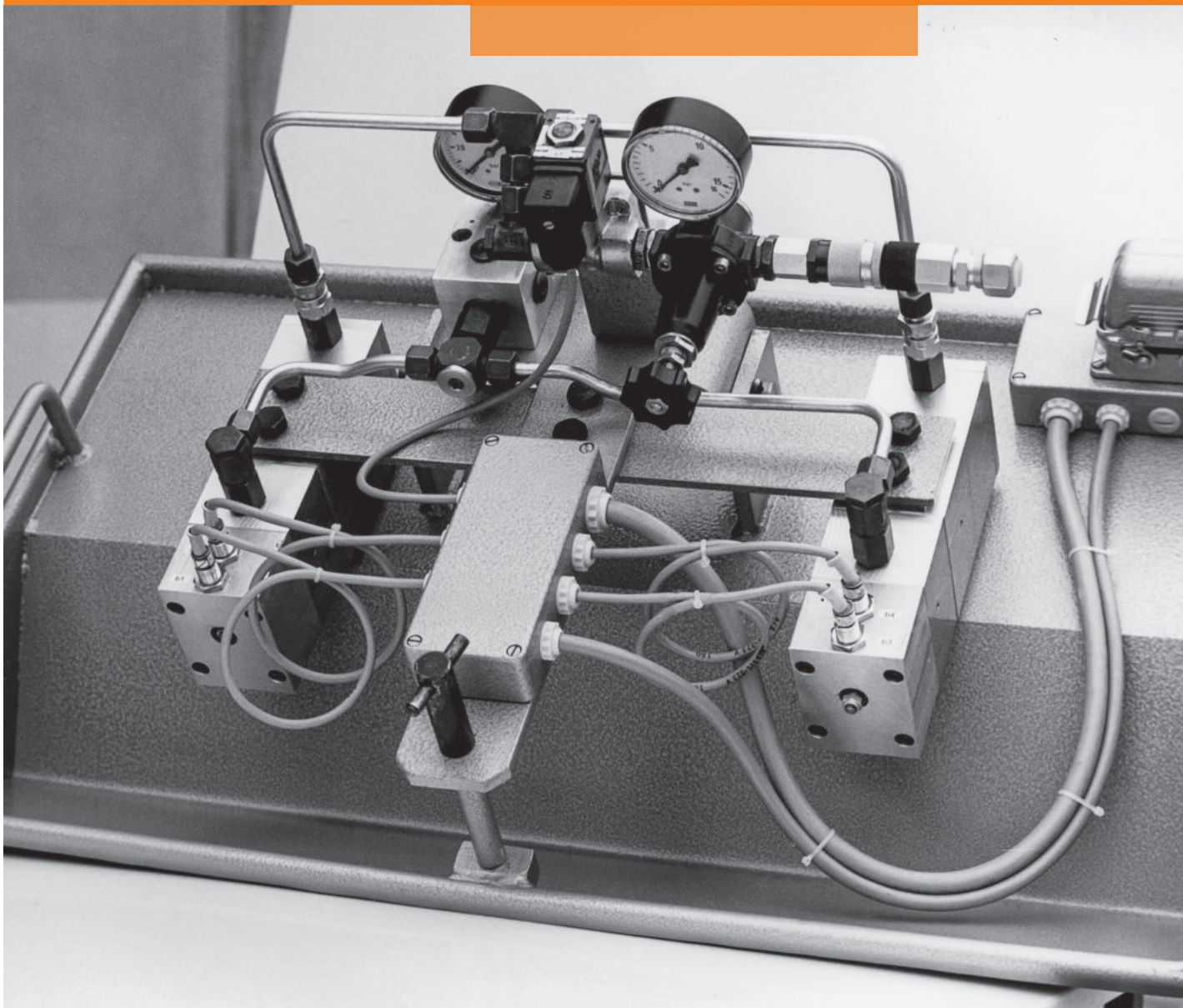


The pioneering aspect of the new WOERNER SBD-A spray unit was that the air flow could now also be monitored. It also featured further improvements. The pump used was designed to be mounted directly on the 200 litre barrel in which the lubricant was usually delivered. This meant it was possible to avoid contamination occurring in the dusty environment during filling.<sup>108</sup>

In collaboration with the mill and furnace manufacturers, a low-maintenance spray nozzle plate was developed. It contained all functional elements for applying and dosing the lubricant as well as for controlling and monitoring the

compressed air. The lubricant was filtered before being fed into the spray unit and, from there, reached the gear wheel as a flat jet with a width of up to 35 cm. An air maintenance unit featuring a water separator with filter and pressure reducing valve was located upstream of the spray unit. In 1985, the spray unit was further developed as the SBD-B, which provided the option to increase the operating temperature from 65 °C to 120 °C and the choice of different jet settings.

↓ The world's first adjustable binary spray nozzle with air and lubricant monitoring: The SBD-A spray unit.



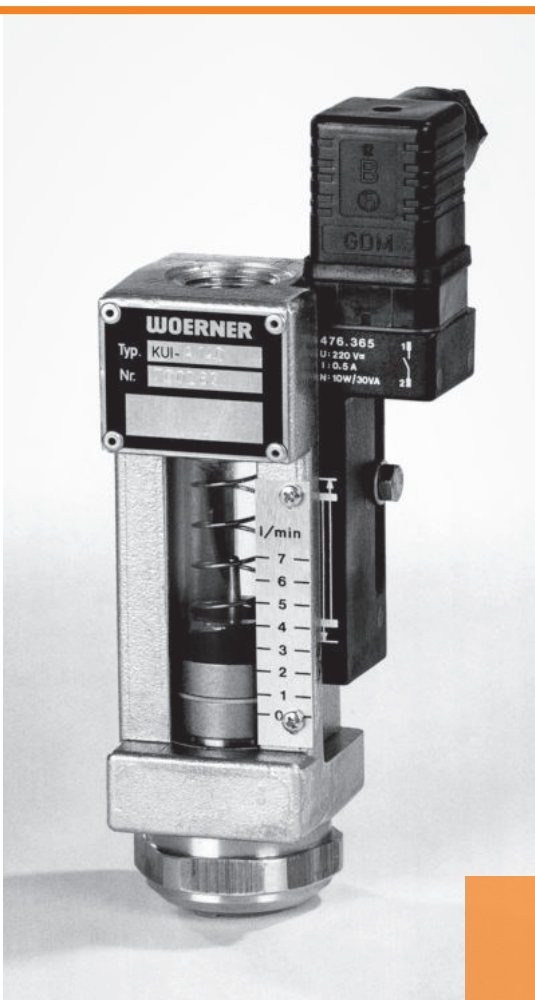


↑ Sigrid Kärcher with a group of jubilarians. She became managing partner in 1984.

### CHANGES IN THE 1980S

The oil crisis of 1973 had triggered a recession. After the second oil crisis in 1978, there was once again a downturn in the sector of the economy that was dependent on this raw material. In 1984, it could be said that the economic situation at Eugen Woerner GmbH & Co. KG Zentralschmieranlagen was also depressed.<sup>109</sup> Within the company, there were other things to deal with. In 1978, Alfred Kärcher resigned as limited partner. His holding was transferred to his daughter, Sabine, a student at this time, and to his sons Matthias and Andreas Sr, both still school pupils. In 1984, Alfred Kärcher stepped down from his role as managing director and retired from the company. From this point on, Sigrid Kärcher was the managing partner. Gradually, her children also joined the company. In the 1990s, the third generation took on management roles: Sabine Gries as Head of Accounting and Andreas Kärcher Sr as Head of Sales. From the 1990s, Matthias Kärcher was assistant to the managing director.

1984 was also the year in which WOERNER developed the KUI volume flow indicator for paper machines. Just like with the body presses, they wanted to convert the paper machines from the two-pipe system to volume flow controllers



← The KUI volume flow indicator was developed in 1984 specifically for paper machines.

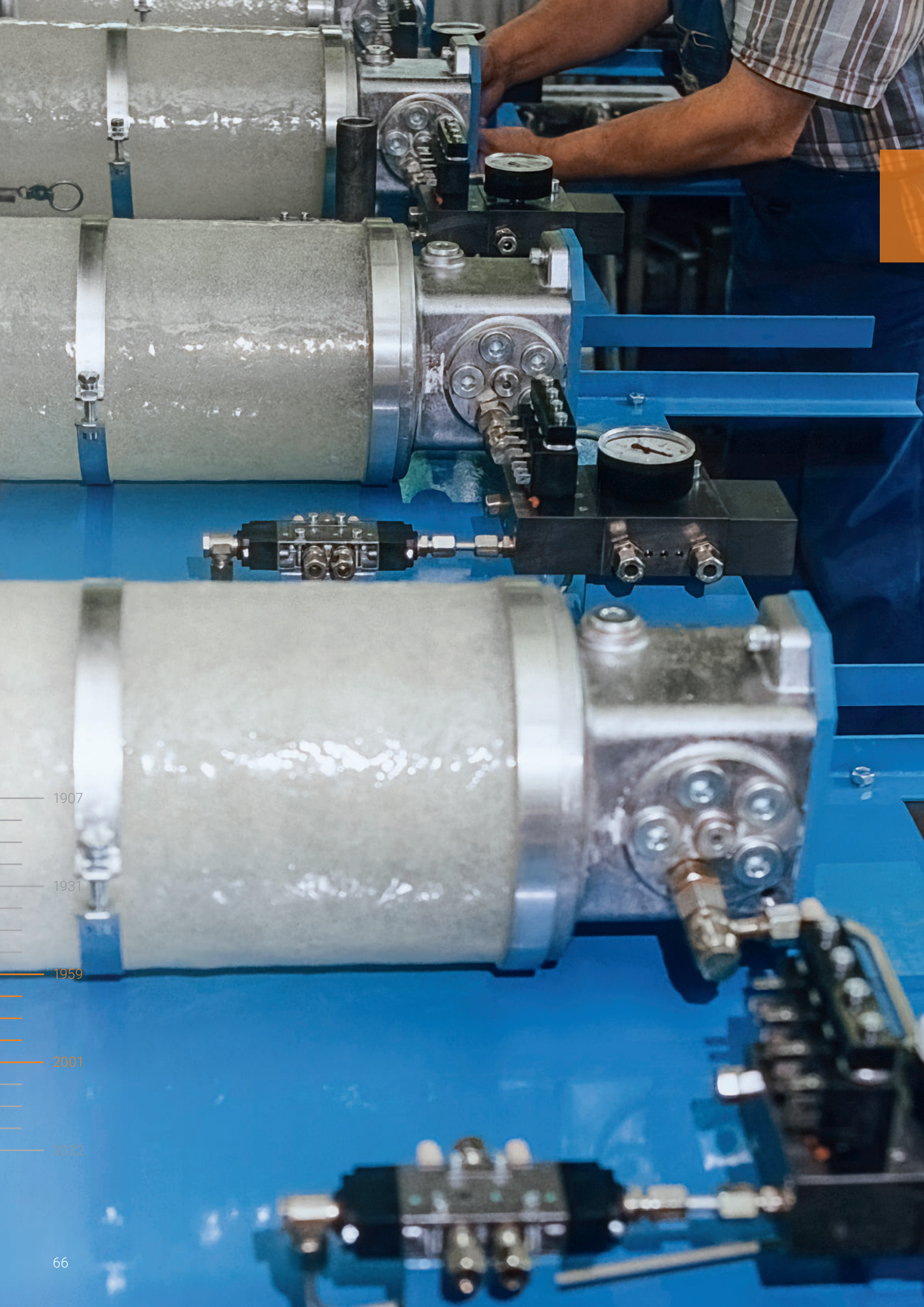
while retaining the progressive distributor. However, since the lubricant in paper machines is simultaneously used for cooling, the volume flow control on the KUI was performed via a low resistance throttle. A slight hydraulic resistance was required to prevent the costs for the heat exchanger of the lubricant container from soaring, as these costs would increase disproportionately at higher operating pressures. The development of the KUI, which was offered with flow measurement via floats and with electric monitoring via solenoid and reed switches, was

a success: Tens of thousands of them were used in paper machines.<sup>110</sup>

Over the years that followed, the company grew again and soon had 200 employees. So, in 1988, two more floors were added to the “new building” from 1972. But there were already suspicions that this extension would not be enough. So, they started looking for a suitable plot for a new building, and finally found one in 2001 in the greenfield site on Hafenstraße, near the industrial area of Bestenheid.<sup>111</sup>



↑ In 1988, two more floors were added on top of the basement and ground floor of the “new building”.



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Large-scale production of the PMW pump for wheel flange lubrication: From 1996 to 1997, WOERNER equipped over 700 Deutsche Bahn locomotives with this pump.

### WHEEL FLANGE LUBRICATION WITH BIO-DEGRADABLE LUBRICANTS

Throughout WOERNER's company history, orders for the railway have always played a significant role, always reflecting current affairs: The formal reunification of the Federal Republic of Germany and the German Democratic Republic on 3rd October 1990 was reflected in the merger between Deutsche Bundesbahn and Deutsche Reichsbahn in January 1994, when the two companies became Deutsche Bahn.

The unity boom at the beginning of the 1990s was followed by another recession. Like other firms, WOERNER responded with short-time working and redundancies. So, it was perfect timing when they (and two competitors) received Deutsche Bahn's request for a new wheel flange lubricating system for biodegradable lubricant. In the 1950s, initial thoughts had already been made regarding wheel flange lubrication. Back then, the contract had been given to a competitor.<sup>112</sup>

But this time the decision fell on WOERNER – and not without reason: When it came to spraying open wheel flanges, they could fall back on experience. For this order, the spray unit that

had been a success in the cement industry was significantly smaller in terms of size and dosing. They developed a tightly packed nozzle shape that now specifically targets the narrow wheel flange that keeps the train wheels in the track. The trial run went without a hitch and Deutsche Bahn once again became a WOERNER customer. WOERNER converted 740 locomotives between 1996 and 1997.<sup>113</sup>

### FROM THE OFFICE: INNOVATIONS FROM TELEPRINTER TO THE FIRST E-MAIL

When the grandchildren of the company founder, Eugen Woerner, worked their way up into management positions in the 1990s, computers were already part and parcel of the workplace. In the three decades before this, everyday life in the office was constantly being restructured by electro-technical innovations. Doris Strauß, who started her apprenticeship at WOERNER in 1965, still remembers the teleprinter used in the Purchasing department. "A dream with perforated strips and everything," is how she described the device.<sup>114</sup> It was like a typewriter with a built-in telephone. Messages were sent in text form – with the help of the required perforated strips – via the Telex network.



The new wheel flange lubrication system for biodegradable lubricants in use.



↑ Office transformation: The view of the sales office in 1997 shows the transition from typewriter to PC.

In 1971, the Honeywell Bull-EDP system G 58 launched the age of electronic data processing at WOERNER. "They were infernal machines that still worked based on the card system. It was chaos until everything was sorted out," said Doris Strauß.<sup>115</sup> But many typing and computing processes could now be completed using it. In 1977, WOERNER used the first EDP system with magnetic storage disks – once again, it marked the end of the punch card machine.

In 1981, for the first time, the next system enabled dialogue between Sales, Accounting and the EDP department via monitors. In 1985, there were so many monitors that there was no need for any entry documents. The first CAD station for computer-based design and work planning was procured in 1989.<sup>116</sup>

The fax also made life significantly easier, as Doris Strauß recalls. And then came the age of e-mail in 1998. "We had to fetch the first e-mails from the post office, because we still didn't have an e-mail address. So we didn't even understand what the advantage was meant to be."<sup>117</sup> Today, it's hard to imagine a day at work without a computer or the Internet.

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↑ The drawing board had served its purpose: In the 1990s, it was replaced with CAD for design planning.



### WOERNER WORLDWIDE

Technical progress not only changed everyday working life, it also resulted in improved transport and travel options. In 1997, WOERNER's direct exports were at 30 percent and its indirect exports – through the sale of machines that were equipped with WOERNER central lubrication systems – were at an estimated 60 to 70 percent.<sup>118</sup> In order to improve networking between the international representatives and with the headquarters in Wertheim, Alfred Kärcher introduced the "International Conference" in 1978. It has been held annually since then. At this meeting, the current market situation is

↑ A spray system is prepared for shipping. WOERNER products are sent all over the world from Wertheim, 1990s.

discussed as well as findings from intensive customer support.

By the turn of the millennium, WOERNER had built up a global network of agents. At its 75th anniversary in 1997, WOERNER already had 18 sales representatives in Western Europe as well as in North America, Australia, India and Japan. In 2001, sales representatives in Argentina and Scandinavia as well as a sales partner in China were also added.<sup>119</sup>

# THE BIG WOERNER FAMILY

In WOERNER's 100 year company history, one thing has never changed – the employees and their commitment to the company are the basis of its success. 140 men and women make up the current workforce in Wertheim. As the WOERNER family, they can look to the future together.







↑ The staff at EUGEN WOERNER GmbH & Co. KG in the anniversary year 2022.

# 2001–2022

## THE NEW MILLENNIUM: BETWEEN CONTINUITY AND CHANGE





The new company premises on Hafenstraße in Wertheim. Since 2009, all departments have been united under one roof here.

**For WOERNER, the start of the new millennium was a time of both continuity and change. The company moved into the long-awaited new company premises on Hafenstraße in Wertheim in two stages. Initially, from 2002, the new production hall offered sufficient space for efficient production of large aggregates and then, from 2009, Hafenstraße became the headquarters for all departments. EUGEN WOERNER GmbH & Co. KG, which had long been characterised by managing director Hans-Otto Dewes, got a new managing director in 2004 – Sven Schultheis. He knew how to continue managing the company in a proven way and, at the same time, transform it to become more modern. This included founding a joint venture in China, through which important contracts for central lubrication systems for paper machines are still processed to this day. Since October 2021, Alexander Kärcher, great-grandson of the company founder Eugen Woerner, has been managing director of the company.**

## ON A GREENFIELD SITE: FACTORY II ON HAFENSTRASSE

“Years ago, we were able to pick up the devices and pack them by hand,”<sup>120</sup> explained Hans-Otto Dewes at the roofing ceremony for the new production hall on 5th June 2002, describing the transformation of large aggregate construction. For the efficient production and loading of these large central lubrication systems, the new hall (Factory II) would offer two crane lane systems, each with a load capacity of eight tonnes.

Back in 1987, they had already tried to find additional premises in Wertheim, but the decision was then taken to expand in situ. Two years later, WOERNER once again asked itself: “Should we move to a greenfield site or expand again?” There were was much in favour of a completely new building. But they weren’t convinced by any of the plots in the district at this time: They had the disadvantage of being located either at the edge of the forest or in the flood zone, or they were the wrong size. In 1990, at a meeting with Lord Mayor Glück of Wertheim, “we were shown the site map for the Hafenstraße area. We picked out the corner plot [with Bestenheider Landstraße] and were very pleased with it,”<sup>121</sup> recalls Sigrid Kärcher.



In 1990, WOERNER purchased this corner plot. Construction of Factory II began on the greenfield site in 2001.



↑ Factory II on Hafenstraße provided some long-awaited relief for the metalworking shop in 2002.

flow indicators was developed specifically for paper machines; thousands of them were used in paper machines and other oil circulating systems.

WOERNER felt the impact of the recession that followed German reunification.<sup>122</sup> The drop in orders for machine tool construction had a particularly big impact. The construction project had to be put on hold and didn't get under way again until 1998. Bannwarth und Ludwig, a planning agency from Wertheim, was commissioned and the application for the first construction phase was finally submitted in December 2000. Starting in the summer of 2002, the new hall, just a few minutes by car from the main site, relieved the pressure on production. The two newly installed cranes made it much easier to handle the large aggregates.

The success story continued. In 2000, Saica, Spain's biggest producer of corrugating medium, commissioned what was then the fastest paper machine for this product area: Corrugating medium (a component of corrugated cardboard) now came off the production line at 1450 m/min.<sup>123</sup> Voith Paper, the manufacturer of the paper machine, purchased the central lubrication system used in it from WOERNER. A subsequent follow-up contract for a paper machine with a speed of 1800 m/min confirmed that the WOERNER lubrication systems meet the highest of demands.

### PAPER MACHINES: SUPERLATIVE LUBRICATION SOLUTIONS

Factory II now also offered sufficient space for the construction of central lubrication systems for the paper industry – one of WOERNER's most important sales markets. The company had already established itself in the packaging sector in the 1970s with the VZO two-pipe distributor. In 1984, the KUI series of volume

The reliability of the paper industry as a sales market for WOERNER was proven in difficult times. At the annual anniversary celebration, Hans-Otto Dewes reported on the company's economic situation, stating that about a quarter of the company's profit had been lost in 2002 due to the insolvency of a few customers.<sup>124</sup> They had to respond with short-time working in order to avoid redundancies among the 170

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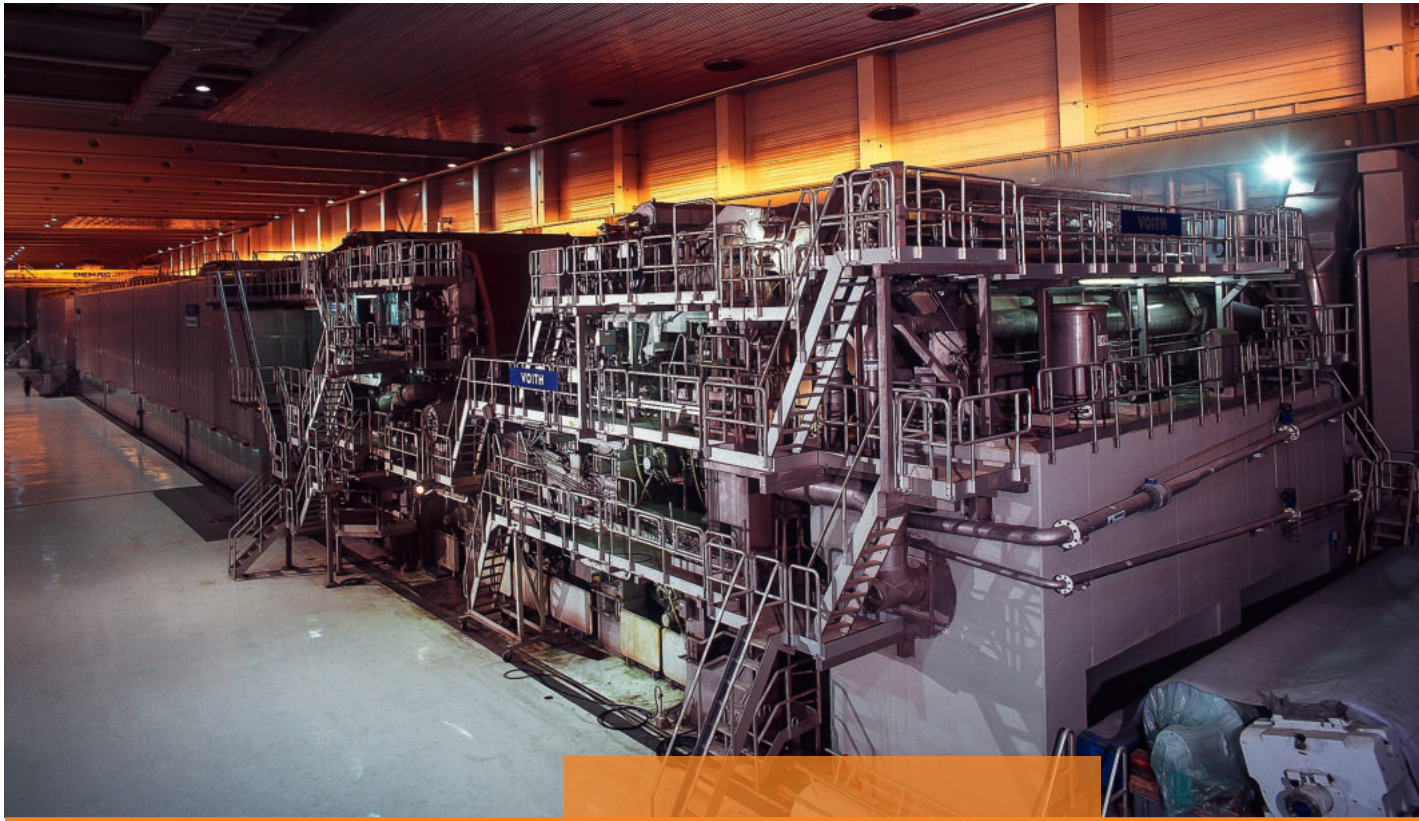
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employees. The following year, a major contract once again enabled the company to work at full capacity: They produced a system for a paper machine in China, with a container capacity of 17,000 litres and a pump flow rate of 644 l/min. Volume flow controllers for about 600 lubricating

points were installed in installation boxes.<sup>125</sup> The entire central lubrication system was produced in the newly commissioned Factory II on Hafenstraße. This and other orders in 2003 resulted in a significant increase in revenue compared to 2002.



Impressive size: WOERNER delivered the central lubrication system for this paper machine from Voith, 2000.

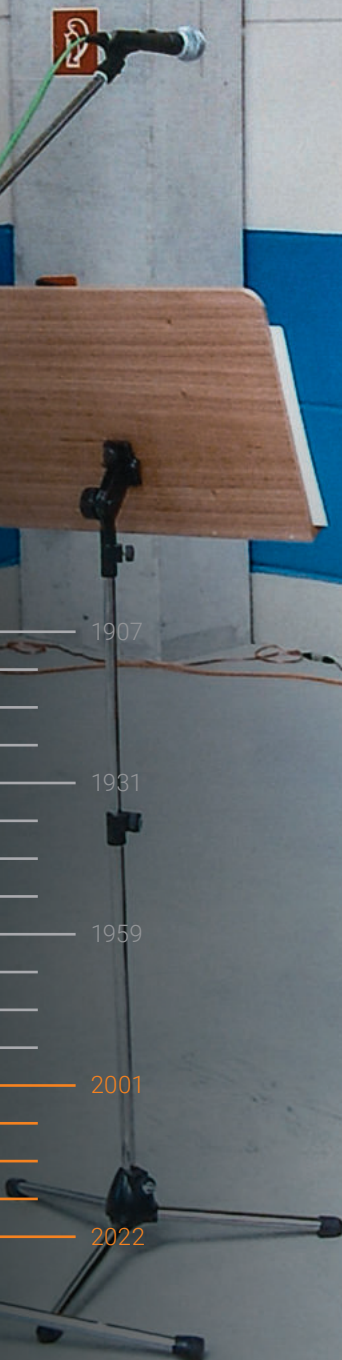
## SVEN SCHULTHEIS BECOMES THE NEW MANAGING DIRECTOR

After “34 years of work at the head of our company”, Hans-Otto Dewes stepped down as managing director, retiring from the company in May 2004 at the age of 67.<sup>126</sup> In her speech, Sigrid Kärcher expressed her high esteem for him: “The decisions you had to make weren’t always easy or simple. Through highs and lows, you were always able to keep the ‘WOERNER ship’ on

course, achieving successes and progress, so that you can now pass the helm to your successor with good conscience and full of hope.”<sup>127</sup>

Sven Schultheis was a successor who would continue to keep the “WOERNER ship” on course for success. One of his focuses was to expand and intensify agency contacts.

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When Sven Schultheis (right) took office as new managing director, Hans-Otto Dewes gave him a WOERNER umbrella and baseball cap.

## FOUNDATION OF A JOINT VENTURE IN CHINA

Sven Schultheis entered into a joint venture with the WOERNER sales representative in China. Back in 2001, when China joined the World Trade Organisation (WTO) and opened up to foreign companies, the managing director at the time, Hans-Otto Dewes, travelled to China to establish a local sales representative. Hans-Otto Dewes was impressed by the new representation's interest and the speed at which its employees worked: "On my first visit, I left behind our thick company catalogue. The next time I visited, they gave it back to me saying I should print it again – they had translated all of it in the meantime."<sup>128</sup> In 2005, under the management of Sven Schultheis, the Woerner Kinsson (Shanghai) Lubrication Equipment Co., Ltd. (WKS) joint venture was founded. Many companies enter into this form of corporate cooperation to avoid violating Chinese legislation on the formation of companies by foreign investors.

WOERNER's assessment of this step from today's perspective is that "the sales market in China is huge, and that's why it was a good and necessary decision to move part of production and development there"<sup>129</sup> Since the foundation of the joint venture, projects in China have been implemented jointly with technicians and engineers from Wertheim. Both founding companies benefit from this exchange and contribute their own expertise from different areas. Customers in China appreciate the fact that they have a point of contact based directly in China. WOERNER still manufactures its core competence products exclusively in Wertheim, but WKS now also manufactures its own products with over 50 employees. The decision is also confirmed by the existing market and the growth of WKS: In December 2020, a new company building was opened in Shanghai because the last building had become too small.

In December 2020, the WKS joint venture opened its new company building in Shanghai.



### CERTIFIED QUALITY MANAGEMENT IN ACCORDANCE WITH DIN EN ISO 9001

As managing director, Sven Schultheis set new priorities, but he also continued with existing practices. This included, for example, certifying quality management in accordance with DIN EN ISO 9001, which had been initiated at WOERNER even before his time. In the 1990s, this certificate had gradually become a signal to customers that proved compliance with quality standards. WOERNER began the extensive certification process in 1997 by commissioning a consultancy firm. The next steps were taken on the basis of the current status of the quality management processes and the analysis of the company's workflow organisation. Since 2005, EUGEN WOERNER GmbH & Co. KG has been certified in accordance with DIN EN ISO 9001, and since 2008 the WKS joint venture has also been certified. Monitoring audits are performed each year to check the standard requirements of the certificate, which is then valid for three years.

Quality management resulted in more extensive documentation of workflows. This was not met with enthusiasm by everyone in the company. Doris Strauß, who worked in Purchasing, was initially sceptical about the procedure: Even before this, precision and quality control had been the key factors in customers choosing WOERNER.<sup>130</sup> But soon Doris Strauß was convinced by "the justification for the additional paperwork"<sup>131</sup> that forms the basis of the optimisation processes. To this day, the quality policy, with the key points of quality improvement, punctuality and optimal service, is a fixed part of WOERNER's mission statement. Every product is tested for functionality before it makes its way to the customer. At WOERNER, we are proud of this one hundred percent quality testing.

At WOERNER, quality takes top priority. This undergoes continuous inspection, as shown here at a hydraulic test bench.



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## THE NEW COMPANY HEADQUARTERS: WERTHEIM, HAFENSTRASSE 2

### ON TRACK FOR THE FUTURE

After 50 years in Wertheim, WOERNER decided to further expand its capacities at the new company premises on Hafenstraße. In 2007, the company submitted the building application for four additional buildings next to the existing production and assembly hall.<sup>132</sup>

There would also be a modern administration building with two open plan offices of 400 m<sup>2</sup> each, as well as seminar rooms. Assembly would be modernised by a production building with its own training workshop and the new "Kardex Shuttle" space-saving warehouse technology. The new company site would be rounded off with a standalone canteen and a cold warehouse for storage purposes. Since then, a total area of 7500 m<sup>2</sup> has been available for administration, production and assembly. WOERNER focused in particular on a resource-saving power supply

for the new company headquarters. By installing a groundwater heat pump, the majority of the heating energy was made independent of fossil fuels. A solar heating system on the roof ensures the production of hot service water.

The new company headquarters on Hafenstraße thus paved the way for the company's future. At the same time, the company had to deal with further economic challenges. When the Lehman Brothers investment bank went bankrupt in the US in 2008, the global financial crisis reached its climax. Germany and many other industrial nations slipped into the biggest recession

From left to right: Matthias Kärcher, Sigrid Kärcher, Hans-Otto Dewes, Sabine Gries, Sven Schultheis and Lord Mayor Stefan Mikulicz at the groundbreaking ceremony for the new company headquarters, 2008.





↑ The new assembly hall is spacious and uncluttered.

↓ Modern, prestigious and functional – the new company site impresses on all levels, 2018.

since the Second World War. But, by 2011, Sven Schultheis was once again able to report positive news in his annual review at the anniversary celebration. They had emerged from the crisis stronger than before, because they had learnt how to communicate better within the company and therefore how to work more efficiently.<sup>133</sup> This was helped by the introduction of a new ERP system in 2008.<sup>134</sup> The first ERP software was purchased in 1989. Now, almost 20 years later, the conversion to a new system was required in order to introduce necessary innovations.

Bringing the company together under one roof on Hafenstraße also massively contributed to making internal communication easier and optimising production workflows. Furthermore, WOERNER switched over to three-shift operation. This was made necessary by large contracts, such as the order received in 2011 for a central lubrication system with a pump station that had a container with a capacity of 26,000 litres. The system was intended for what was then the world's largest paper machine. The entire unit was assembled in Wertheim, dismantled again after testing, and then shipped to China.



## WERTHEIM – FROM COMPANY SITE TO HOME

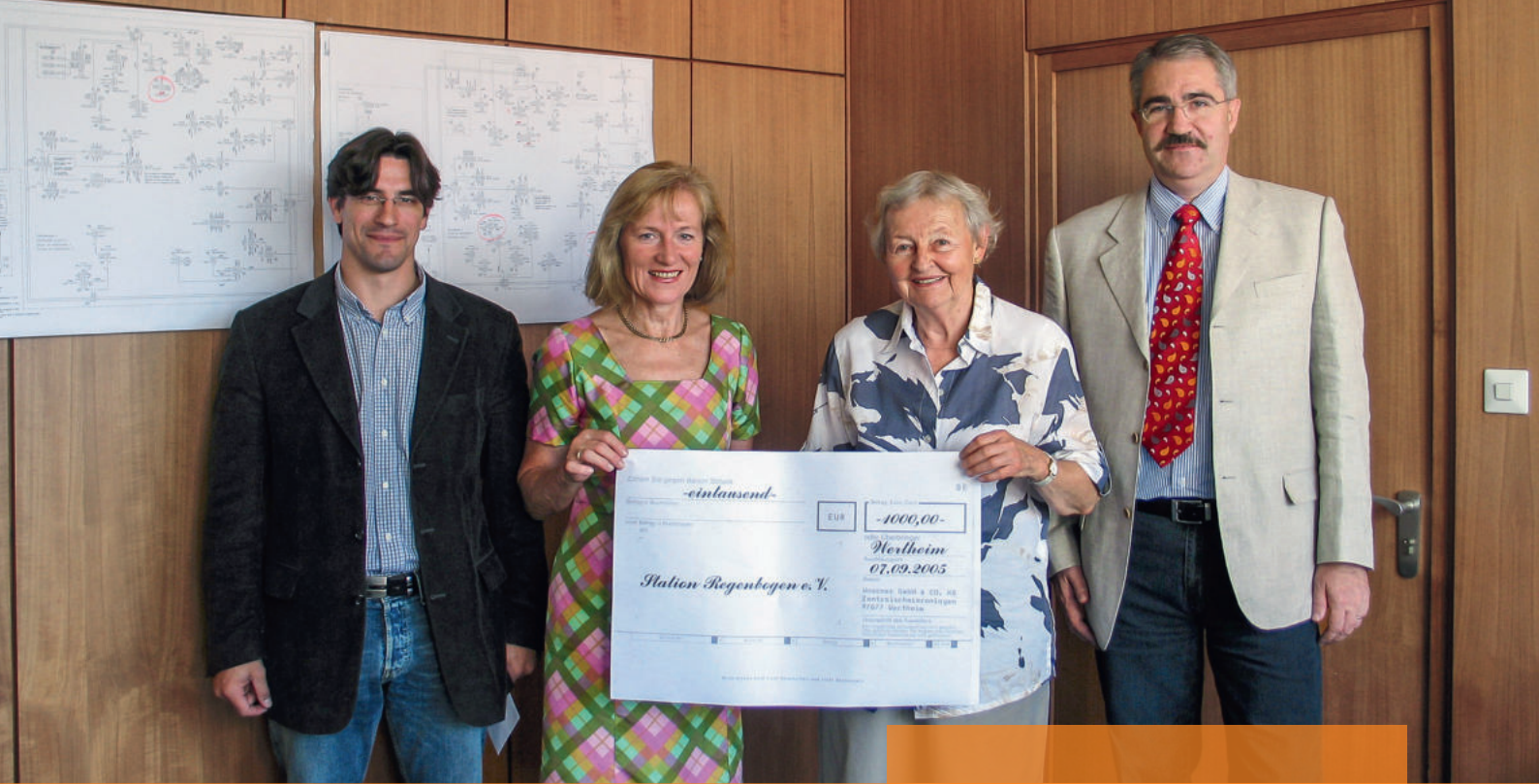
With the construction of the new company site on Hafenstraße, WOERNER once again committed itself to Wertheim. Some of the employees from Stuttgart, who had moved to Wertheim along with Woerner Oeler- und Fetterfabrik in 1959. But today, in the anniversary year 2022, EUGEN WOERNER GmbH & Co. KG is firmly rooted in the Wertheim region. In addition to the hard location factors – such as the convenient location in the quadrangle formed by Baden-Württemberg, Bavaria, Thuringia and Hessen, the town's interest in a healthy economic life and the resulting good conditions for companies – the soft location factors were also always decisive. The commitment of the long-standing company boss Sigrid Kärcher also played a big part in the company's integration in the town. She was an important promoter of local associations. Not

only that, but donations collected at company events were and are still used to benefit social causes in the region.

WOERNER is also particularly important to the town as a training company and thanks to its promotion of young talent. The company knows how to generate interest in technical careers, including through projects such as "TECHNOLino" or as a training partner at "Girls' Day", by providing career guidance in secondary schools or through the "Kreative Köpfe" („Creative Minds") competition. "We see Germany as an economic and technology centre and want to contribute to this," explained Sven Schultheis in 2008 regarding WOERNER's motivation for the early support of young talent.<sup>135</sup> And the balance sheet tallies up: The number of applicants from the region has increased since the start of these activities.<sup>136</sup>



↑ The "WOERNER Eleven" match against Fritz Ampullen at the town championship 2006 ended 0:0 – thanks to the unexpected deployment of the automatic sprinkler system.



↑ Sigrid Kärcher and Sven Schultheis presenting a donation to the Verein Station Regenbogen e. V., which campaigns for children with leukaemia and cancer.

Even Eugen Woerner found it important to support young talent from among his own ranks. Training content and occupations have changed over the last century, but the aim has remained the same: "From the vocational careers of industrial mechanic, industrial clerk and mechatronics engineer to dual study programmes in mechanical engineering and industrial engineering – we ourselves cover a host of occupations in the field of education and training," explains WOERNER proudly.<sup>137</sup> In addition to a modern training workshop and in-house classes, career starters are also offered a good basis through external learning opportunities and, above all, joint project work.

#### AWARD-WINNING APPRENTICESHIP PROJECT – THE WOERNER BIKE

The Woerner bike with pedal levers and curved path underwent a revival in 2012/2013. Since production stopped during the Second World War, the pedal lever bike has lived on in people's memories. This is because the way the bicycle works was impressive – even to the training managers at WOERNER. In the end, they dug out Eugen Woerner's design drawings from the

- 1907
- 1931
- 1959
- 2001
- 2022



↑ View of the "Trainee Workshop" in the production building constructed in 2009.

company archive. When they suggested rebuilding the bicycle as an apprenticeship project in 2011, the apprentices were excited by the idea.

The tasks for the joint project were soon divided between the apprentices and students at the Baden-Württemberg Cooperative State University (DHBW). As is usual at WOERNER, the focus was on practice. The project tracked the production of a product from idea to assembly.

Before designing it in the 3D CAD system, the students checked their data, which they had collected based on the drawings by Eugen Woerner and his patent specification from 1939, on genuine Woerner bikes: There is one in the bicycle museum in Neckarsulm (Deutsches Zweirad- und NSU-Museum) and another in a private museum in Eichenbühl. A bicycle expert in Wertheim also gave them valuable insights into the possible design.<sup>138</sup>



↑ The gears of a genuine Woerner bike: Exact dimensions for the design drawings formed the basis of the award-winning apprentice project.



The trainee industrial clerks created the work orders in the production planning and control system. In Purchasing, quotations were requested and the external components ordered. After production planning, the production team took over the order from the industrial mechanic apprentices. They now began bending the down tubes, milling the struts for the pedals, turning the connecting pieces, manufacturing the eyelets for the pedals and welding the frame. After assembly, they were all able to test drive the bicycle full of pride.

Not only did the project meet with enthusiasm at WOERNER, but it also received the "Best Apprenticeship Project" award from the Heilbronn-Franken

↑ The production team of industrial mechanic apprentices ensured perfect implementation. Here they are milling the struts for the pedals.

Chamber of Industry and Commerce in 2013.<sup>139</sup> Today, the bicycle is on display in the entrance area to WOERNER's building, where visitors to the company marvel at it time and again. Symbolically, it represents the inventive and innovative spirit of the company founder, Eugen Woerner, which lives on in the company to this day.

↓ The WOERNER apprentices accepted the prize from the Heilbronn-Franken Chamber of Industry and Commerce in 2013 with pride.



1907

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## THE FOURTH GENERATION SETS NEW TRENDS

One hundred years since the company was founded, WOERNER is in its fourth generation of family management: Since 2021, Alexander Kärcher, great-grandson of Eugen Woerner, has been managing director. Having studied mechanical engineering at DHBW Mosbach (Baden-Württemberg Cooperative State University Mosbach), Alexander Kärcher worked in passenger car transmission development at Getrag, now Magna Powertrain, for almost eight years. In 2019, he returned to Wertheim, where his first job was as assistant to the managing director. When Sven Schultheis retired two years later, he succeeded him as managing director.

### DIGITALISATION DURING THE PANDEMIC

Alexander Kärcher recognises his predecessor Sven Schultheis' great service to the company as being the global network of representatives he

left behind. He got to know the employees of the 30 and more sales representatives at the international conference in 2019. These conferences are important for networking between the headquarters in Wertheim and the sales representatives. More than 60 percent of all WOERNER products are exported. In 2020 – during the Covid-19 pandemic – the conference was held remotely for the first time. But despite the digital possibilities: "Covid-19 not only impedes communication, but also face-to-face contact," said the managing director, Alexander Kärcher.<sup>140</sup>

Alexander Kärcher's focus on digitalisation when he joined the family company certainly paid off during the pandemic. In 2021, his first big project, which was completed in May 2022, was to introduce a data management system. It provides employees in Wertheim with digital



↑ The fourth generation is in play: In October 2021, Alexander Kärcher (left) took over the role of managing director from Sven Schultheis.



↑ During the Covid-19 pandemic: In October 2020, the international conference was held digitally.

access to all documents for any sales process. Andreas Kärcher Jr, Head of Purchasing and Materials Management, also introduced the system in his department: "Through digitalisation, access to data will be made easier for all departments. We are now much better connected than when everyone had their own folders in a cabinet."<sup>141</sup> Other advantages include the fact that a huge amount of paper is saved and office employees are more able to work remotely with the new system.

### FACING THE FUTURE: LUBRICATION OF WIND POWER PLANTS

Considering the global political situation in 2022, the importance of implementing a turnaround in energy policy to sustainable systems is becoming all the more apparent. "An accelerated turnaround in energy policy would also have a peacemaking effect,"<sup>142</sup> wrote the economic scientist Claudia Kemfert from the German Institute for Economic Research in February 2022 in view of the war in Ukraine. Since the 1970s, oil crises, debates about nuclear energy and discussions about the environment have made

← Individual system solutions are implemented at WOERNER with modular components. This is the pump for wind power plants.

1907  
1931  
1959  
2001  
2022





the turnaround in energy policy a hot topic. The stated objective is that Germany should become independent of non-sustainable fossil fuels and move away from nuclear energy. The expansion of wind power plants for electricity production is crucial in achieving this objective. In 2008, Sven Schultheis, who was managing director at the time, introduced WOERNER into this promising sector. The first projects were implemented for a customer that is still today served by WOERNER's extensive modular system.

Since 2019, when Alexander Kärcher joined as assistant to the managing director, contracts for the lubrication of wind power plants have been processed directly by the partner company WinSoCon GmbH. The eponymous abbreviation stands for "Wind, Solution and Consulting" and reflects the range of services provided by this new, small company. Initial discussions between WOERNER and TriboServ GmbH & Co. KG – a company from Geldersheim, which is also involved in the field of lubrication technology – began in 2015. Dr. Michael Weigand, owner of TriboServ, and Alexander Kärcher finally took the plunge and formed a company in 2016. Kira Bamford and Johannes Petry took over the management. In 2019, Alexander Kärcher purchased all the WinSoCon company shares and became managing director alongside Kira Bamford. They relocated the WinSoCon company headquarters from Geldersheim to Hafenstrasse, Wertheim – to the same address as WOERNER.

As an independent company, WinSoCon can fall back on WOERNER's large modular system for its product portfolio: Its offering includes lubricating gears, filling pumps, cartridges, progressive distributors and grease pumps, which, as modular components, enable individual system solutions. For WOERNER, this has resulted in a new area of use for proven products. WinSoCon also develops its own products, which – where possible – extend WOERNER's modular system. Both companies therefore benefit from the close collaboration.



→  
A breath of fresh air for the future: Since 2008, WOERNER, in collaboration with partners, has been equipping wind power plants with its lubricating systems.

## A BRIEF HISTORY

### **THE THIRD GENERATION: SABINE GRIES, (NÉE KÄRCHER), MATTHIAS KÄRCHER AND ANDREAS KÄRCHER SR**

When WOERNER celebrated its 75th anniversary in 1997, the company was already undergoing a generational change. Eugen Woerner's three grandchildren – Sabine Gries, (née Kärcher), as well as Matthias Kärcher and Andreas Kärcher Sr – had already been working for the company since the late 1980s. After completing his engineering degree in 1987, Matthias Kärcher started as assistant to the managing director.

Andreas Kärcher Sr had completed his commercial apprenticeship at WOERNER between 1990 and 1992. As Head of the Sales department, he spoke at the company anniversary event in 1997, giving thanks and promising that the third generation would continue to keep the company on course. This also included its responsibility as a training company. Andreas Kärcher Sr is still involved in the company as a shareholder. After completing her secondary school leaving examination and completing

↓ Proud siblings: Andreas Kärcher Sr (centre) was born in Wertheim in 1966.



a degree in business studies, Sabine Gries worked abroad for ten years before she and her husband Hermann Gries joined WOERNER in 1988. He was appointed operations manager and she took on the role of Head of Financial Accounting at the beginning of the 1990s. Alongside her work, Sabine Gries completed her training as an accountant from 1995 to early 1997. In 2019, she handed the management reins to her successor and, after 32 years of active service, retired from WOERNER in 2020.

### CLOSE RELATIONSHIP WITH THE FAMILY COMPANY

The three siblings have been closely connected with the family company since their childhood. Sabine and Matthias Kärcher were born in Stuttgart. They also spent the first years of their lives there at the old company location. Andreas Kärcher Sr, the youngest of the three siblings, was born in Wertheim. Sabine Kärcher summarised this and other memories in a poem at a company event in 1979. "I had to file, type, search and copy, try a bit of everything," she said, describing her beginnings in the company in the Sales department. On behalf of the family, Sabine Kärcher then gave her thanks "for loyal co-operation in WOERNER days".<sup>143</sup>

Today, the company shares are held by the three siblings. As majority shareholder, Matthias Kärcher is still actively involved in the company. But the fourth generation, in the form of his children Alexander, Andreas Jr and Catiana Kärcher, is already firmly integrated in the company business.



↑ Andreas Kärcher Sr, Sabine Gries and Matthias Kärcher with their mother in 1994. Sigrid Kärcher was celebrating 50 years of working for the company.

A photograph of a modern building with large glass windows and a balcony. The building is partially obscured by a semi-transparent orange overlay. A timeline is overlaid on the image, showing the years 1907, 1931, 1959, 2001, and 2022. The year 2022 is highlighted in orange. The text '2022-∞' is prominently displayed in white on the orange overlay.

# 2022-∞

## SHAPING THE FUTURE TOGETHER

1907

1931

1959

2001

2022



The site on Hafenstraße – tried and tested, but full of energy for the future.

**In 2022, the year of the company’s 100th anniversary, responsibility for EUGEN WOERNER GmbH & Co. KG lies in the hands of the third and fourth generations. Since 2021, Alexander Kärcher has been at the head of the company as managing director. He is supported by all of the staff on board the “WOERNER” ship – and by his siblings. His brother, Andreas Kärcher Jr, is Head of Purchasing and Materials Management. As third in the group, Catiana Kärcher contributes new ideas to the company through her work in the field of Marketing. Together, the fourth generation will guide the family company into the future.**

## 100 YEARS OF THE FAMILY COMPANY: RESPONSIBILITY IN THE HANDS OF THE THIRD AND FOURTH GENERATION

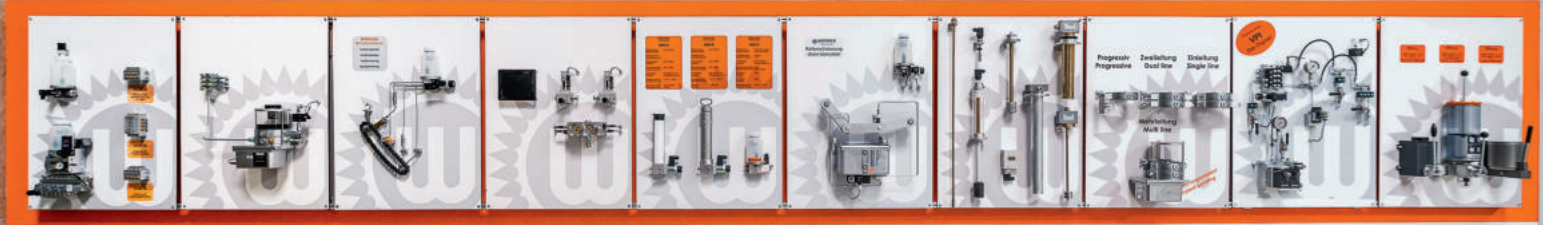
For 100 years, the big question at WOERNER has been: “How do we get the right amount of lubricant to the right place at the right time?”. In 1922, company founder Eugen Woerner answered this with the so-called “Golden Oiler”. Today, the answer is customised central lubrication systems. Through volatile times, during wartime and years of economic crisis, the company has always held its ground through innovation and the desire to carry on – from the individual employee to the management level. “Our predecessors have left us big shoes to fill,”<sup>144</sup> said Alexander Kärcher regarding the successful company history. For the coming years, he has set a few focuses in his role as managing director: From greater sustainability to more attractive jobs.

### A BREATH OF FRESH AIR AT THE COMPANY SITE ON HAFENSTRASSE

WOERNER’s modern lubrication technology makes a significant contribution towards saving resources. Its products ensure economical lubricant consumption, low friction losses and thus a longer service life of machines. The components and systems produced by WOERNER are subject to continuous further development. At the IFAT trade fair 2022, the company presented the new Kx cartridge system, for example.<sup>145</sup> The innovation is that the cartridges are designed to be reusable in a closed circuit. This



↑ At the IFAT trade fair 2022 in Munich, WOERNER presented the Kx cartridge system – an innovation for greater sustainability.



↑ The product developments from 100 years of company history have become firmly established – and will continue to write history in future too.

means they are no longer disposable products. The system is also compatible with almost all pump units on the market, thanks to the use of adapters, and can be filled with customer-specific lubricants. As a further product development to help save resources, WOERNER equipped an existing paper machine with a newly developed system in 2021. The secret: When starting up the system, the oil flow at the lubricating points is throttled by an automatic system, so that the bearings are not flooded and no oil leaks out of the bearings.

Alexander Kärcher is also paving the way for sustainability in everyday life at the company. This ranges from switching the packaging materials from polystyrene flakes to paper and recyclable plastic film to the use of LED bulbs and the planned installation of a photovoltaic system.

**EMPLOYEES FOR INNOVATIONS OF THE FUTURE**

Company founder Eugen Woerner represents the initial decades of the company with his pioneering inventions like the “Golden Oiler”. His spirit of invention and innovation lives on in the company to this day. “We have many clever people here,” said Alexander Kärcher about his employees. In his opinion, it is impressive how successfully the product developments from the 100 year company history have become established on the market. A particular quality award: At the Swiss university ETH Zurich, trainee mechanical engineers are taught using central lubrication solutions from WOERNER. Lecture notes from the Institute of Machine Tools and Manufacturing explain the different lubrication processes using WOERNER technology – from



← Alexander Kärcher is confident about the future.



the single-line system to the progressive distributor. Illustrations from the company's own data sheets are even used to clarify the processes. "Our ancestor's technology has made it all the way to the lecture halls," said Alexander Kärcher with pride.

Looking at the company as it is today, the managing director speaks of a "Manufacturing Business": The standard versions of the products are adapted to customer requirements accordingly – whether this means a requested distributor or a specific dosing quantity. "They are unique products. And we can do that," said Alexander Kärcher, confidently stressing the company's performance capability. To this end, employees should be provided with the best equipment. There are plans to procure new machines and better systems for production of the products.

For Alexander Kärcher, employee recruitment in light of demographic change is key. "Over the next ten years, more people will retire than start their careers. And we want to retain our employees," he explained. That's why he attributes such importance to making the workplace attractive: "We want our employees to

↑ The production employees implement customer-specific requirements on WOERNER products.

look forward to coming to work. After all, they spend the majority of their day here." Since July 2022, in addition to previous benefits, such as the scheme for service bikes, JobRad, there have also been water dispensers at which all employees can fill up their own WOERNER glass bottle free of charge. Ergonomic improvements are also planned: All offices are to have height-adjustable desks to enable people to work either while standing or sitting.

"We see ourselves as one big WOERNER family and only together can we achieve our goal," according to the Kärcher family. The close relationship between the workforce and the company is reflected in the many years of loyalty to the company – often lasting for decades. Many of the employees have been working for WOERNER since their apprenticeships. Alexander Kärcher looks to the future with confidence: "So long as there is no technical invention that eliminates the need for lubricant when dealing with friction, we will remain a force on the market."

## A BRIEF HISTORY

### THE FOURTH GENERATION: ALEXANDER, ANDREAS JR, CATIANA AND CONSTANTIN KÄRCHER

When Alexander Kärcher joined the family company as assistant to the managing director on 1st April 2019, he had already thought long and hard about taking this step. After his studies at DHBW Mosbach in 2011, he had deliberately chosen to prove himself in a different company first. "I set myself a time frame of five to eight years; enough time to get to know a different company, but also not so long that I wouldn't be able to return." After almost eight years at Getrag, now Magna Powertrain, where he started in passenger car transmission development, and soon worked his way up to team leader, he returned to Wertheim.

Alexander Kärcher stresses that, for him, his brother Andreas Jr and the twins Catiana and Constantin, it was not mandatory to work for the family company, even though the business has played a major part in family events since his childhood. He remembers his first visits to the company as a child – "still in the old building" – to his father, grandmother or aunt's office. He himself took holiday jobs and internships at the company during his time at school, including in assembly: "That was the first time I really came into contact with the company."

↓ Alexander Kärcher, together with his parents, presents a birthday gift to long-standing employee Alfred Dürr in 1988.





Today, there are three of them in the company. In 2017, Constantin Kärcher successfully completed his apprenticeship at WOERNER as an industrial clerk, but then left the company. Since then, he has been gaining experience at and with other companies. His brother Andreas Kärcher Jr also made use of the training opportunities at WOERNER after completing his vocational diploma. In 2010, he began a two-year industrial clerk apprenticeship. He has no regrets about his choice of career and, due to his time as an apprentice, knows the 140 employees personally. Since the middle of 2021, he has been Head of Purchasing and Materials Management, after his predecessor took well-earned retirement. He is convinced that the new mindset of the young generation will breathe a breath of fresh air into the company: "I hope that we, as the fourth generation, will be able to achieve a lot and ensure WOERNER is in a good position for the future."

### **TOGETHER, THE FAMILY CAN ACHIEVE A LOT**

Since February 2021, Catiana Kärcher has been supporting the Marketing area with new ideas. She spent two years at the Alexander Waske Tennis University. In addition, in 2015, she began a degree in Sport Management at Wismar University, which she successfully completed in 2019. Without any engineering studies or commercial training, joining the company was not initially an obvious step for her. But her father's motto "Together you can achieve a lot," which she has heard frequently since childhood, brought her into the family company. And here, as part of the big "WOERNER family", the fourth generation feels at home.

↓ Alexander, Catiana and Andreas Jr Kärcher will shape the company's future together.



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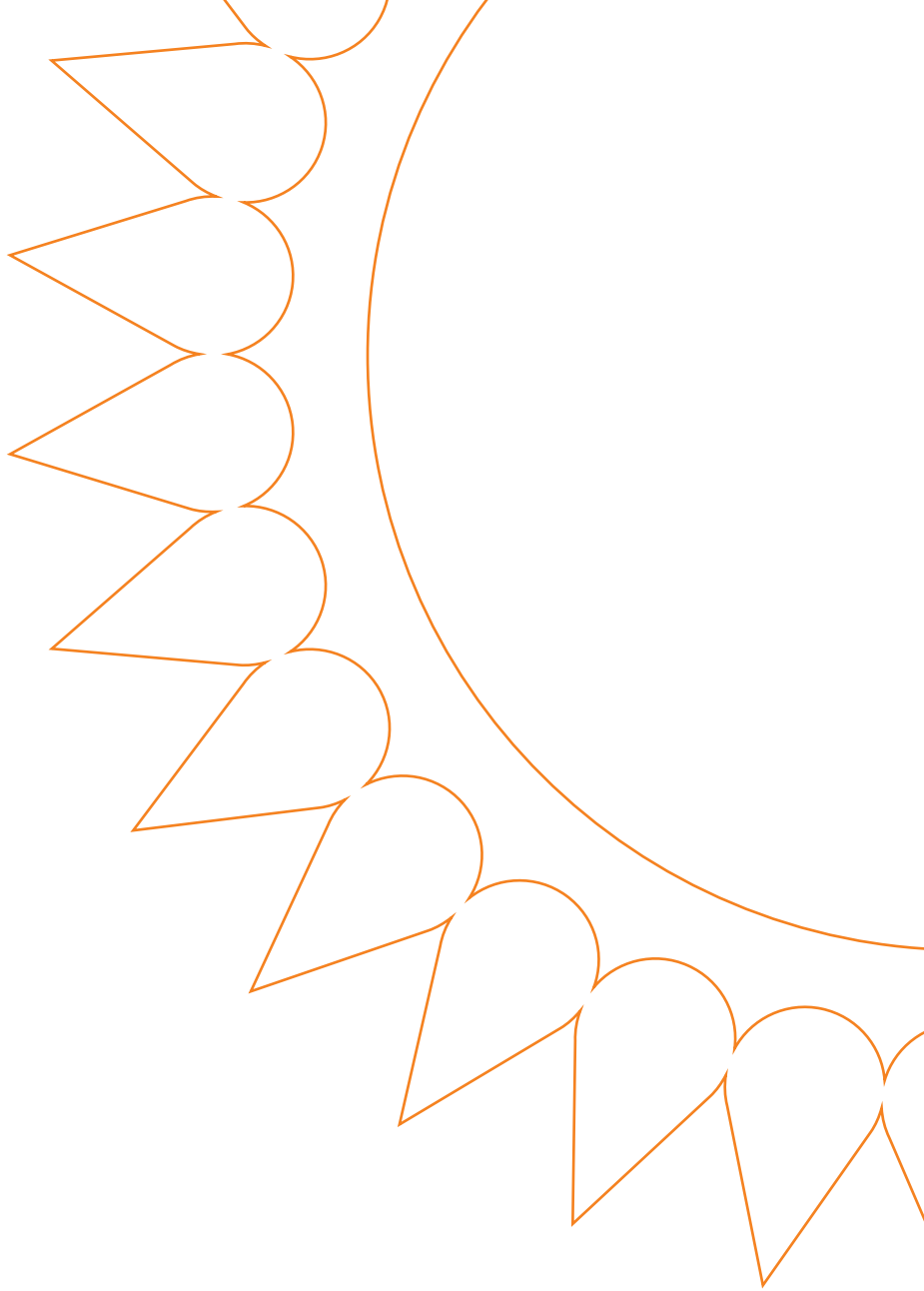
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