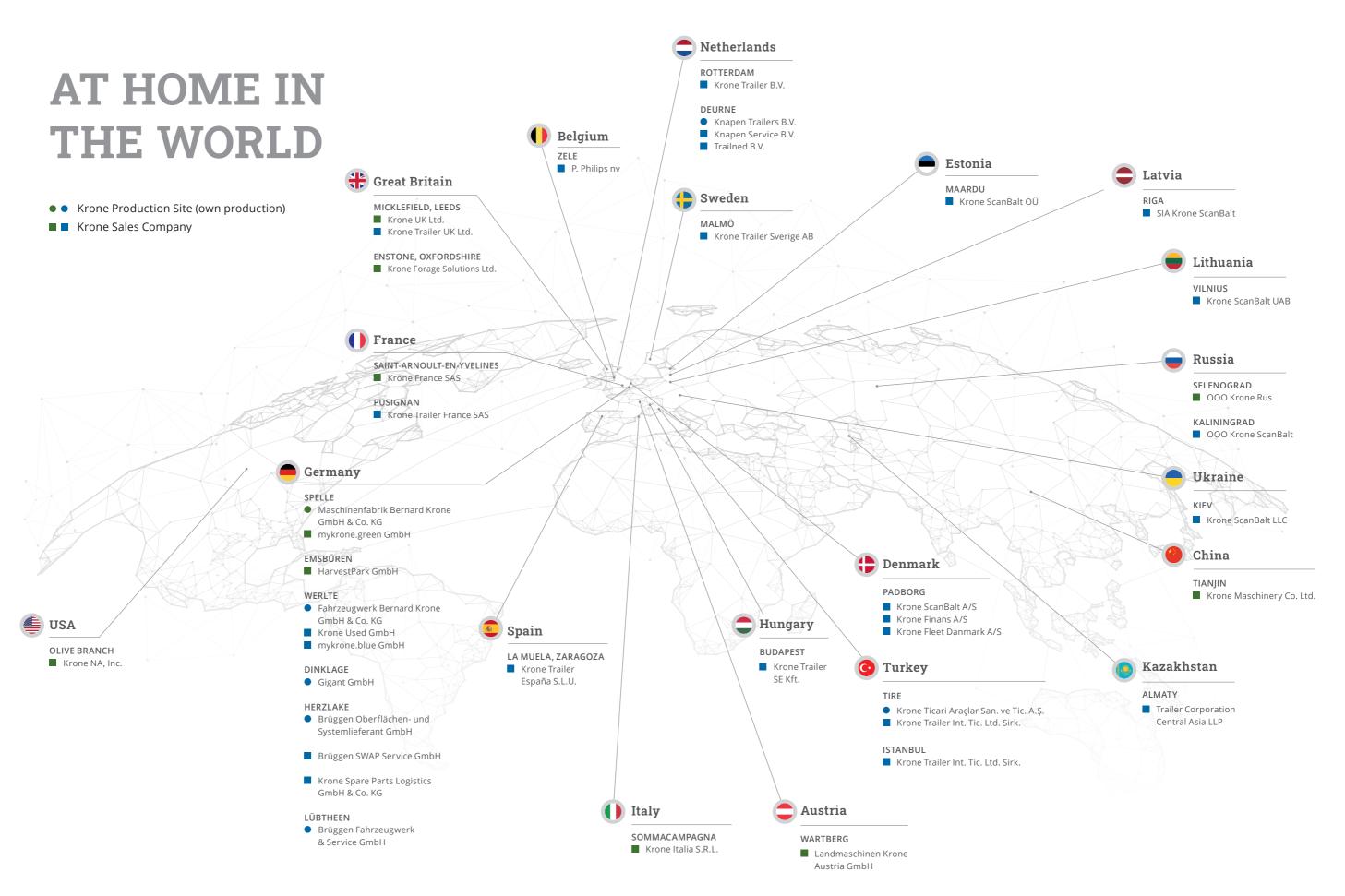


### FOR MORE OF TOMORROW



### Dr.-Ing. E.h. Bernard Krone

\* 23. April 1940 † 14. Oktober 2022

After a short serious illness, Dr.-Ing. E.h. Bernard Krone, the long-time owner of the Krone Group, passed away at the age of 82 on October 14th, 2022.

His passing is not only mourned by his family and relatives as well as the employees, but also the international agricultural engineering and European commercial vehicle industry, which the passionate family entrepreneur Dr Bernard Krone decisively shaped through his many years of work. He was regarded as a visionary man of action. His life motto was inspired by the philosopher Dante Alighieri: "One waits for the times to change, the other seizes them and acts", and he acted naturally. He continuously developed the company and made ground-breaking decisions to diversify the business: In addition to entering the commercial vehicle sector, he established, among other things, self-propelled technology in agricultural engineering and specialised the Krone company in forage harvesting technology. He thus shaped the corporate group over many decades, developed products and set the course before officially retiring from the operational business in 2010 and handing over the helm to his son Bernard Krone.

Even though the death of Dr Bernard Krone leaves a deep cut in the soul of the company, the lived values of the far-sighted yet down-to-earth Emsland native form the basis for the sustainable success of the company to this day. Honesty, reliability, straightforwardness – these are terms by which many companions describe him full of esteem.







#### **FOREWORD**

Dear Sir or Madam,

the death of my father has been a painful loss and has had a deep impact on us as a family, as well as for friends, long-time companions and the employees of the Krone Group. The incredible outpourings of sympathy we have received from all over the world have touched us deeply.

As the fourth generation of owners, it is our goal not only to preserve our father's lifetime achievement but also to successfully lead the companies into the future with dedication, commitment and sustainability. In times of increasingly fragile supply chains in a globalised economic world in which rapid technological development brings far-reaching upheavals, it is more important than ever to put our own company on a solid footing and ensure it is fit for the future. In the 2021/2022 financial year, we once again made good progress along this path, and for this I would like to thank our customers, our employees, our suppliers and our financial partners.

Our family's adherence to values and the commitment of our employees have consistently guaranteed stable growth over the years. Reliability, stability and sustainability are crucial to everything we do, and we will continue to adopt this approach wherever we operate in the world.

Yours sincerely,

enced arms

Bernard Krone

Chairman of the Supervisory Board of Bernard Krone Holding SE & Co. KG



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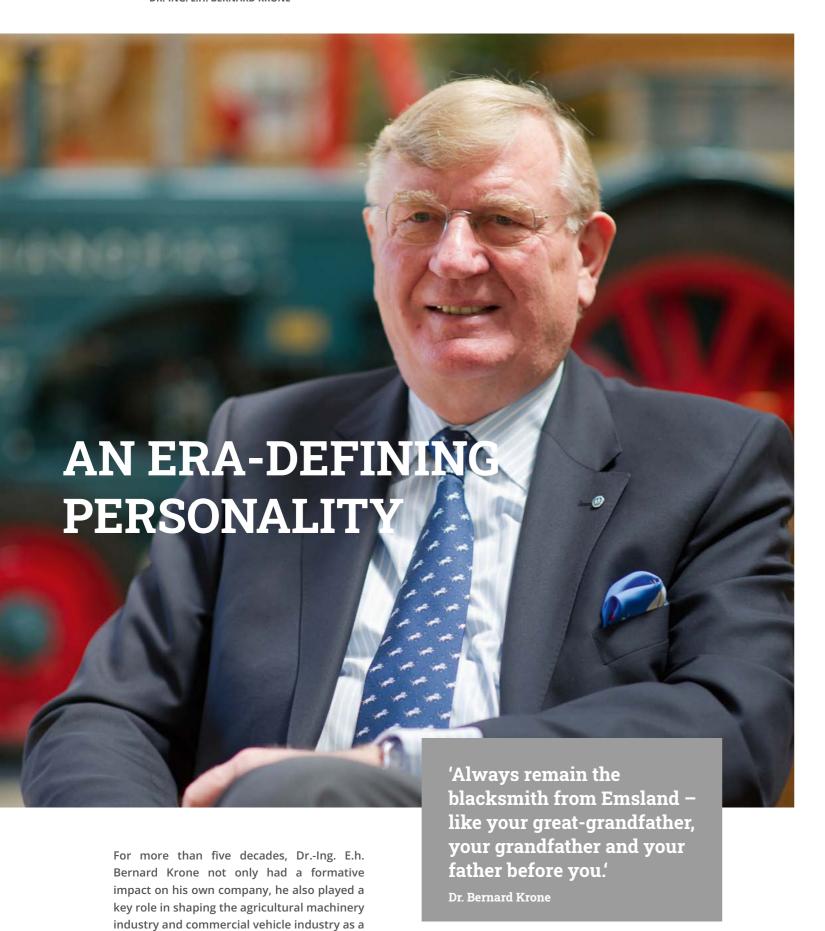
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Dr. Bernard Krone with his son Bernard Krone in 2017.

Dr. Bernard Krone, a passionate family entrepreneur, not only had a formative impact on his own company for many years, he also played a key role in shaping the international agricultural machinery and European commercial vehicle industries. Contact with customers - engaging in person-to-person conversation with people - was always close to his heart. Dr. Bernard Krone was considered both a visionary and a man of action. His life motto was inspired by the philosopher Dante Alighieri: 'One waits for time to change, the other grabs it vigorously and acts.' And he acted, of course.



He was a keen and frequent visitor to the factory – as here on the occasion of the 25th anniversary of the Cham mowing association and the handover of the 20th BiG M.

He continuously developed the company and made ground-breaking decisions to diversify it: as well as entering the commercial vehicle sector, where Krone rose to become the fourth largest trailer manufacturer in the world, he established such innovations as self-propelled technology in the agricultural machinery sector and had the company specialise in forage harvesting technology. For many decades, Dr. Bernard Krone played a defining role in the group, developing products and setting the course for the future, before officially retiring from active business operations in 2010, when he handed over the helm to his son Bernard Krone. Here again he demonstrated entrepreneurial foresight by establishing the arrangements for his succession early on to the benefit of the Krone Group. His most important advice to the successor: 'Always remain the blacksmith from Emsland – like your great-grandfather, your grandfather and your father before you.'



One of the milestones of the 'BK3' era was the self-propelled forage harvester BiG X, shown here at the official presentation to the international trade press at the beginning of the

4

whole. He passed away on October 14th, 2022 at the age of 82 - a look back at the 'BK3' era.





For more than six decades, Dr. Krone was especially keen on trade fairs and exhibitions as a forum for presenting innovations and in particular as a way of maintaining close contact with customers.

His dedication and commitment had an impact far be-

yond the boundaries of the company itself. He also put

enormous energy into his work with the industry asso-

ciations: with the Chamber of Industry and Commerce

and the Agricultural Machinery and Farm Tractor Asso-

ciation (LAV), as President of the European Association

of Agricultural Machinery Manufacturers (CEMA), with

the German Mechanical Engineering Industry Associa-

tion (VDMA), as Vice President of the German Associa-

tion of the Automotive Industry (VDA) for many years,

and as Chairman of Manufacturer Group II Trailers,

Special Bodies, Buses'. He received numerous distinc-

tions for his accomplishments. TU Carolo-Wilhelmina

Braunschweig awarded him an honorary doctorate.

He received the Tilo Freiherr von Wilmowsky Medal for 'many years of valuable input to the benefit of people employed in agriculture' and the Max Eyth Medal in Gold; the then Prime Minister of Lower Saxony, Christian Wulff, presented him with the Cross of Merit on Ribbon of the Order of Merit of Lower Saxony, and he also received the Cross of Merit 1st Class of the State of Lower Saxony from Prime Minister Stephan Weil. In addition, Dr. Bernard Krone was distinguished with the industry award LEO in the category 'Innovation/Idea' for his concept of the EuroCombi - a longer truck and trailer combination. He was also awarded the Emsland Medal, the Grashof Commemorative Coin - the highest award of the Association of German Engineers - and the *Großer Wagen* award presented by the Federal Association of Road Haulage, Logistics and Waste Disposal. The VDA appointed him an honorary member in 2013.



who played a key role in shaping the international agricultural machinery and European commercial vehicle industry over decades, Dr.-Ing. E.h. Bernard Krone was always a highly valued discussion partner, such as in 2016 during German President Joachim Gauck's visit to Spelle.



From his very earliest years, Dr. Bernard Krone grew into the company originally founded by his grandfather in 1906. Even as a child he was often allowed to go with the adults into the factory and join them on customer visits. As a six-year-old pupil he told his teacher he could learn more in the workshop than at school. Continuing with school nonetheless, of course, he completed his education before going on to do an apprenticeship and then study mechanical engineering in Cologne in 1959 – the youngest person to start university at that time. Three years later, having successfully completed his university degree, he joined the company. His father then sent him to Ireland for a stay abroad because he wanted to prepare his son to take over the business as early as possible. Bernard Krone's father died an unexpected and much too early death in 1970, and as the sole heir, he took over management of agricultural machinery production in Spelle. These were big shoes to fill, but there was never any doubt in his mind that he was prepared to take on the responsibility.

A father of three and grandfather many times over, he was committed to the interests of nature in his home region and beyond in his private life, too, not least as a passionate hunter and farmer. Active participation in and promotion of local associations were integral to his work.

Even though the death of Dr. Bernard Krone leaves a deep void at the heart of the company, the values embraced by this far-sighted yet down-to-earth Emsländer continue to provide the basis for the company's sustainable success to this day. Honest, reliable and with a down-to-earth, straightforward manner these are the appreciative terms that many of those who knew him use to describe his personality. It was always important for him to set an example and actively embrace this role. The Krone family, the entire management team and all employees will continue his life's work for generations to come.





# **MILESTONES 2021/2022**



#### **1** One million chassis

The vehicle with the millionth chassis number rolls off the production line in Lübtheen: a Cool Liner for TIP Trailer Services in Norway.



### **3** Autonomous system

Krone and Lemken present the concept study 'Process Engineering Unit' (VTE), an autonomous drive unit that can be combined with various implements.



#### **2** Krone at IdeenExpo

More than 425,000 students attended IdeenExpo 2022 in Hanover; many of them visited the Krone 'hands-on' booth to get careers advice.



#### 4 Farewell to members of the Board

After the break imposed by the coronavirus pandemic, Alfons Veer and Aloys Schnelte were given their official farewell in the summer of 2022.



### 5 European research project

GAIA-X

BMWi commissions Krone to produce a concept to optimise the flow of goods and commodity based on the intelligent use of data.



#### 6 New leadership

Kartal Erköy and Semih Pala take over management of the Krone plant in Tire from long-time managing director Riza Agkün.



### **7** Expansion of the Board

Due to the growth of the Krone Group, Ole Klose is appointed as an additional member of the Management Board of Krone Holding.



#### New BiG X models

Krone expands its forage harvester range in the 900 to 1100 hp category with the addition of the powerful BiG X 980 and BiG X 1080 models.



#### 9 Innovation award for eTrailer

Krone receives the Zenit Innovation Award for the innovative electric drivetrain used in the Krone eTrailer.



### **10** High distinction

In recognition of his numerous developments and extraordinary commitment to the agricultural machinery industry, Dr.-Ing. Josef Horstmann receives the Max Eyth Silver Medal.



# Vendro programme expanded

New to the Vendro range: the rotary tedders T 900, T 1020, T 1120 and C 1120, with working widths of between 9.00 m and 11.20 m.



# 12 Knapen products for agricultural transport

Due to the growing demand for trailers with moving floor technology, Krone now also offers Knapen products in the agricultural sector. ONE ANNUAL REPORT 2021 I 202



that this involves has to be guaranteed.

Supervisory Board of Bernard Krone Holding SE & Co. KG

Left to right: Bernd Meerpohl, Alfons Veer (Deputy Chairman), Philip von dem Bussche, Bernard Krone (Chair), Dr. Wilhelm-Friedrich

## **KRONE GROUP**

The coronavirus epidemic, the war in Ukraine, the growth of the world population to eight billion people, climate change, rising prices – the uncertainties have increased enormously for more and more people, especially in recent times. Against this background, the secure supply of food and reliable, professional logistics are increasingly coming into focus, with a demand for future-oriented concepts. As a responsible manufacturer of agricultural machinery and commercial vehicles, the Krone Group specialises in sustainable, intelligent technologies in the fields of nutrition and logistics that offer solutions to these challenges. Here, Krone still sees itself in the tradition of a family business founded over a hundred years ago in which the family values of diligence, honesty, common sense, courage and responsibility form the backbone - the values of the Krone Group for more tomorrow.

In the area of agricultural machinery, Krone focuses on forage harvesting technology. Krone agricultural machinery is used in more than 60 countries worldwide. Whether farmer, machinery ring or contractor – Krone guarantees the right machine to meet every need. The portfolio ranges from disc mowers to rotary tedders, round balers and large square balers to loading and transport wagons. The flagships of the range are two self-propelled machines, the BiG M giant mower and the BiG X forage harvester. The Krone programme even includes the world's most powerful agricultural machine: the BiG X 1180 (1156 hp).

In the commercial vehicle sector, the Krone portfolio covers the most important segments in road haulage: from the Profi Liner platform semitrailer to the Cool Liner refrigerated semitrailer and the Dry Liner dry freight semitrailer to the Box Liner container chassis, the trailers and swap systems and the Rytle cargo bike. Krone offers practical solutions to tackle all transportation tasks, with products that are not only of

exemplary quality but also ecological and economical – as demonstrated by more than a million commercial vehicles produced by the company to date.

The name Krone stands for sustainable quality, exemplary customer proximity and trend-setting innovation. In order to ensure the very best possible functionality and durability, the Krone Future Lab is where the company puts its vehicles and machines through their paces, as well as components provided by its suppliers. The Krone Group has gradually developed from a powerhouse of ideas into an international conglomerate that combines industrial production with a wide range of services to create individual solution packages for its customers. Digitalisation, automation, electrification and smart solutions are just as much a part of the repertoire, ensuring that the Krone Group's products will continue to work as efficiently as possible in the future.



Bernard Krone





### KRONE COMMERCIAL VEHICLE SE

100%	Fahrzeugwerk Bernard Krone GmbH & Co. KG Werlte (D)	100%	Krone Trailer France SAS Pusignan (FR)
100%	Gigant GmbH Dinklage (D)	100%	Krone Trailer UK Ltd. Micklefield, Leeds (GB)
100%	Brüggen Fahrzeugwerk & Service GmbH Lübtheen (D)	100%	Krone Trailer SE Kft Budapest (HU)
100%	Brüggen Oberflächen- & Systemlieferant GmbH Herzlake (D)	100%	Trailer Corporation Central Asia LLP Almaty (KZ)
100%	Brüggen SWAP Service GmbH Herzlake (D)	100%	Knapen Trailers B.V. Deurne (NL)
100%	mykrone.blue GmbH Werlte (D)	100%	Trailned B.V. Deurne (NL)
100%	Krone Spare Parts Logistics GmbH & Co. KG Herzlake (D)	100%	Knapen Service B.V. Deurne (NL)
100%	Krone Used GmbH Werlte (D)	100%	Krone Trailer B.V. Rotterdam (NL)
80%	P. Philips nv Zele (BE)	100%	Krone Trailer Sverige AB Malmö (SE)
100%	Krone Finans A/S Padborg (DK)	100%	Krone Ticari Araçlar San. ve Tic. A.Ş. Tire (TR)
100%	Krone ScanBalt A/S Padborg (DK)	100%	Krone Trailer International Ticaret Ltd. Sirketi Tire (TR)
100%	Krone Trailer España S.L.U. La Muela, Zaragoza (ES)	40.25%	Krone Fleet Danmark A/S Padborg (DK)

## **ORGANISATION**



# MANAGEMENT REPORT

#### Turnover development

Despite a still tense market environment, the Krone Group generated a turnover of around EUR 2.5 billion in the 2021/2022 financial year, which is more than 15 per cent above the previous year's level (around EUR 2.2 billion). Domestic sales increased by EUR 139.9 million (25.4 per cent) to EUR 690.8 million compared to the previous year. Approximately 32.1 per cent of domestic sales were generated in the agricultural machinery sector and 67.0 per cent in the automotive technology sector; the Krone Group thus generated 27.4 per cent (previous year 25.1 per cent) of its sales in Germany.

In the 2021/2022 financial year, foreign sales increased by EUR 193.5 million to EUR 1.8 billion compared to the previous year, of which 33.1 per cent was attributable to the agricultural machinery sector and 66.9 per cent to automotive engineering. As such, the foreign share of turnover was 72.6 per cent (previous year 74.9 per cent).

#### Operating profit

The consolidated profit before income taxes for the 2021/2022 business year fell from EUR 96.0 million to EUR 84.6 million. The Group's pre-tax return on sales was 3.4 per cent (previous year 4.4 per cent).

#### Net assets/financing

In the 2021/2022 business year, the balance sheet total was EUR 1.7 billion (previous year: EUR 1.5 billion). The total investment volume of EUR 60.1 million (previous year EUR 45.4 million) was offset by depreciation of EUR 39.4 million. The additions mainly resulted from various investments at diverse locations.

Cash and cash equivalents fell by EUR 55.2 million to EUR 281.9 million. Equity increased from EUR 645.4 million to EUR 701.6 million as of the balance sheet date, mainly due to the consolidated profit after income taxes of EUR 64.6 million. The equity ratio fell slightly to 41.6 per cent (previous year 43.7 per cent).

Medium and long-term debt capital fell from EUR 500.5 million to EUR 471.5 million. The Group has medium and long-term capital of EUR1.2 billion (previous year EUR 1.1 billion) at its disposal. This covers not only the fixed assets, but also the entire inventory.





#### Employees

The Krone Group's average global headcount (core workforce) increased by 6.1 per cent to 5,768 in the 2021/2022 financial year (previous year 5,438). This includes an average of 261 apprentices (previous year 266). The increase in the number of employees is due among other things to the expansion of business activities. As an owner-managed family business in its fourth generation, Krone consistently relies on the high level of commitment and loyalty of its workforce. Personnel policy is geared towards continuity and a sense of identification with Krone.

#### Research and development

In the past financial year, Krone again invested considerable amounts in research and development. In the agricultural machinery sector, for example, the Krone BiG Pack square balers and the Bale Collect collection wagons were further developed. One particular highlight was the presentation of the joint project Combined Powers, a venture being pursued collaboratively by Lemken and Krone. An autonomous towing vehicle (VTE) was developed that performs six work processes fully autonomously.

In the commercial vehicle sector, a major focus of development activity was on rounding off the product portfolio: the WK 4.0 swap body product generation was brought to series maturity and the development of the new Cool Liner was completed. Krone presented new container chassis as well as starting series production of the new refrigeration unit in a joint project with Liebherr.

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— MANAGEMENT REPORT



Members of the Executive Board of Bernard Krone Holding SE & Co. KG Left to right: Ole Klose, Dr. David Frink, Dr. Stefan Binnewies

In both divisions, software products and electronic developments continue to gain in importance. In agricultural machinery, for example, more than 70 partners and software products are now connected to the Agrirouter, a manufacturer-independent data exchange platform. In the commercial vehicle sector, the range of services in telematics was further expanded, also through a cooperation with the partner Shippeo. One example of a cross-divisional development is the Krone Smart Collect Solar telemetry solution: this has been introduced in both the agricultural machinery and commercial vehicle sectors.



### Investments with a view to securing the future

The commercial vehicle industry is currently undergoing a transformation process towards the mobility of the future, driven by sustainability issues and the shortage of skilled workers.

In line with this, Krone is stepping up investments in the future-oriented areas of automation, digitalisation and electrification. Krone is also investing in its production sites. At the Herzlake plant, highly automated assembly lines were implemented in order to double production capacity for dry liners and swap bodies in the future. At the Dinklage site, production capacity was increased to over 100,000 axles per year with the commissioning of the new double-head friction welding system.

Another investment in the future of the company's agricultural machinery business is the construction of the new spare parts warehouse, which will be ready to go into operation in 2024. In the area of training, the programme of digital seminars offered was consistently expanded, and customer service capacity was likewise increased.

#### Outlook

In the past business year, Krone was able to increase its sales in both business areas and consolidate its market shares, in spite of unfavourable general conditions in some cases. As the global economy remains in a state of emergency, it is difficult to make serious forecasts about future developments.

In the global agricultural machinery market, the demand for agricultural products and the need for innovative technology continue unabated. Nevertheless, due to the income situation in agriculture, a cooling of the markets is very likely in the course of the 2023 calendar year: this could affect Krone to some extent in the 2022/2023 financial year.

For the coming financial year, the Krone Commercial Vehicle Group assumes, somewhat more conservatively than the forecasting institutes, a decline in volumes of 10 per cent and market saturation in 2023. However, the high order backlog means that day-to-day factors are not likely to impact on business in 2022/2023 as much as in other sectors.





# KRONE ACTS CONSISTENTLY



After only one year of construction, Krone opened its new validation centre at its Lingen site on 21 September 2021 – the Future Lab. 'What you see here is absolute state-of-the-art validation technology, which we will now use to put Krone machines and commercial vehicles through their paces, as well as validating individual components provided by external suppliers before installing them in Krone products. Precise service life and function validation is crucial to the further optimisation of our product quality so it contributes significantly to customer satisfaction. In addition, we have excellent opportunities at this site to test innovations such as autonomous driving,' said Bernard Krone, Chairman of the Supervisory Board of Krone Holding, at the opening ceremony.

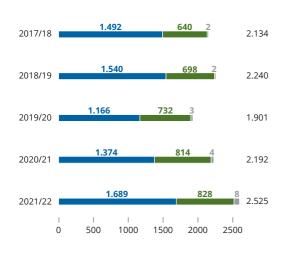
The Future Lab is equipped with three large-scale test benches, two servo-hydraulic test rigs and one power test bench, as well as test benches for components and assemblies. In addition to mechanical testing, testing of the machine electronics and software has an essential role to play. For example, Krone can use the 'X-Poster' – a test bench for road simulations – to simulate the service life of a trailer of one million kilometres within the space of just a few weeks. Another performance test bench is used for carrying out lifetime tests of large gearboxes such as those installed in the Krone BiG X forage harvester and the BiG Pack

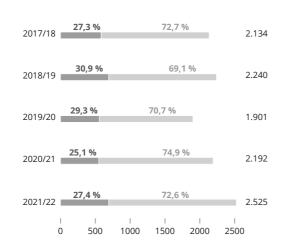
large square baler. An approximately 1.1 km long test track with gradients of 18 and 50 per cent is available for homologation tests, system tests for software approvals and driving tests.

The Krone Group's investment in the Future Lab, which was built over a total surface area of 13 hectares, amounts to approximately EUR 20 million. Sustainability was the focus in terms of design: for example, 100 per cent of the heating energy is generated from the waste heat given off by the test benches, while a photovoltaic system designed to entirely to meet its own needs helps cover part of the electricity demand.



# FIGURES AT A GLANCE





#### Turnover development of the Krone Group

- Agricultural Machinery
- Commercial Vehicles
- Holding

- Domestic
- Export







5,768 Employees



73 % Export

27 %
Domestic



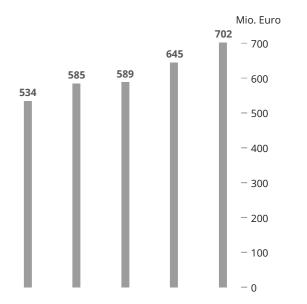
EUR 702 million



(\*incl. apprentices and trainees)

#### Development of core workforce\*

- Agricultural Machinery
- Commercial Vehicles
- Holding



Equity development Krone Group

Equity



# KRONE COMMERCIAL VEHICLES



Management of Krone Commercial Vehicles Left to right: Dr. Frank Albers, Ralf Faust, Markus Stegen, Astrid Jahnke, Bernhard Brüggen, Alfons B. Veer, Ingo Geerdes

#### Background

Despite all adversities, the German economy proved resilient in the 2021/2022 financial year. Krone also demonstrated stability and was able to report a historically high order backlog at the turn of the financial year. These positive effects were curbed by bottlenecks in raw materials and semiconductor products as well as in labour. All forecasts were then invalidated in the spring of 2022 with the outbreak of war in Ukraine.

Krone was able to sell around 53,700 units in the 2021/2022 financial year, an increase of around 19 per cent on the previous year. Revenues in the Group's Commercial Vehicles segment rose by 22.9 per cent to around EUR 1.7 billion. Domestic business increased by 35.2 per cent to EUR 462.5 million in turnover and remains the most important single market with a share of 27.4 per cent. In the foreign markets, sales rose from EUR 1.0 billion to EUR 1.2 billion. The most important sales markets are the Western European markets with a share of 45.4 per cent, followed by the Eastern European markets (21.7 per cent). The Dutch Knapen Group, which was integrated in the Krone Commercial Vehicle Group in June 2019, also developed positively.

#### Investments

Krone continued to invest in the automation of its factories in the 2021/2022 financial year, once again increasing capacity as a result. The production of the Dry Liner was clustered at the Herzlake plant, enabling the Lübtheen plant to focus on the core product, namely the Cool Liner. Automated chassis production was expanded in Werlte. The focus on quality and innovation was borne out by the opening of the Krone Future Lab validation centre in Lingen in September 2021.

On the product side, Krone invested heavily in innovative products in the 2021/2022 financial year: these were presented under the motto 'Mission beyond zero' at the IAA Commercial Vehicles in September 2022.



#### Sales locations

Morocco

Albania Macedonia Algeria Montenegro Belgium Netherlands Bosnia and Herzegovina Norway Bulgaria Austria Poland Denmark Portugal Germany Romania Finland Russia France Sweden Greece Switzerland United Kingdom Slovakia Ireland Slovenia Iceland Spain Israel Czech Republic Kazakhstan Turkey Croatia Ukraine Luxembourg Hungary

C



#### Summary/outlook

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Krone seeks to build on close cooperation with start-ups, especially in the future-oriented areas of digitalisation, automation, sustainability and electrification, Together with the start-up Trailer Dynamics, for example, Krone is driving forward series-ready development of the eTrailer, which is capable of reducing the diesel and  ${\rm CO}_2$  emissions of diesel semitrailer tractors by 20 to 40 per cent.

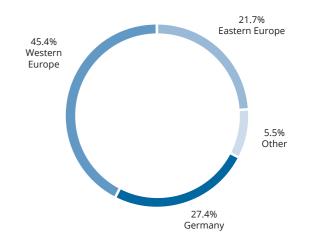
In the coming years, Krone will expand its distribution network throughout Europe and the neighbouring countries to achieve full coverage. At the same time, Krone will continue to position itself as an attractive employer in order to counteract the shortage of skilled workers

#### Statement

The commercial vehicle industry is currently undergoing a transformation process towards the mobility of the future, and trailers can make a significant contribution to this. This is why Krone is focusing specifically on developing products that are geared toward reducing emissions and fuel consumption.

In connection with this process, the values of the Krone family continue to remain paramount, even after the generational transition. Strategy remains just as clearly focused on customers and their challenges, with Krone seeking to provide the best possible support.

# FIGURES AT A GLANCE



## Regional distribution of turnover Commercial Vehicles 2021/2022



# Turnover development in Commercial Vehicles (consolidated)

- Domestic
- Export



**DIGITALIZATION SUSTAINABILITY ELECTRIFICATION** 

# **PURSUING THE PATH TO** 'MISSION BEYOND ZERO'





in the 2021/2022 business year especially in the run-up to the IAA Transportation, which was held matic concept vehicle. Here, the driver can adjust in Hanover in September 2022. Krone's overall concept 'Mission beyond zero', which was presented at the IAA Transportation, is the prelude to all of the manual activities that were previously a new generation of trailer transport solutions: by required. This not only provides physical relief for combining digitalisation, automation, sustainability and electrification, these ensure a significant the same time, it prevents incorrect adjustment reduction in the CO<sub>2</sub> emissions of semitrailers.

In addition to electrification with the Krone eTrailer concept (see page 32), digitalisation and automation help reduce consumption and CO, emissions, too. One example of developments in these segments is the intelligent load space recognition system Smart Capacity Management: now developed to series production readiness, this enables load capacities to be detected and put to more effective use.

There were numerous innovative developments Krone is also breaking new ground with the innovative Krone Box Liner eLTU 50 Traction Autothe container chassis at the touch of a button via the remote control in the cab, thereby eliminating the driver, it also significantly increases safety. At of the chassis. Since this automation accelerates the overall process, an approximately 10 per cent increase in efficiency is expected in terms of port

## **KRONE INVENTS**

## The eTrailer reduces CO<sub>2</sub> emissions

When it comes to the future issues of digitalisation, automation, sustainability and electrification in particular, Krone engages time and time again in collaboration with specialists who have mastered new technologies and are looking for a competent partner to put their ideas in practice in industry. This allows Krone to benefit on an equal footing from the innovative capacity, focused expertise and flexibility of these young entrepreneurs while at the same time offering them the opportunity to jointly develop customer solutions and establish themselves in the market.

This innovative approach provides the basis for numerous collaborations – including the partnership with the Aachen-based start-up Trailer Dynamics, which the company's founder Abdullah Jaber launched in 2018 together with a small team and with the help of investor Michael Nimtsch. The vision: to develop an electrically powered trailer that can contribute to the decarbonisation of the economy and to sustainable, environmentally friendly logistics with long-distance lorries. 'It wasn't easy to get people to listen to our ideas. We talked to a lot of big vehicle manufacturers – but they didn't take us seriously or didn't see the idea as being realistic,' says Jaber. 'In 2020 we got in touch with Krone, and COO Dr. Stefan Binnewies called me right back the day our documents landed on his desk.'

Although Trailer Dynamics was negotiating with another potential partner at the time as well, they deliberately chose Krone: You can't manage a project like this with money alone. You need enthusiasm, technical support, experience, a production line and a shared vision, too: Krone definitely ticked all the boxes there.' The two partners have strengths that complement each other: 'Krone knows how to build trailers, they're familiar with the market and all the technical guidelines and they have the experience in terms of communication. And we at Trailer Dynamics come along with our crazy ideas.' The new collaboration quickly took off: the first working prototype was developed in just six months.



Successful partnership: the eTrailer is based on a cooperation between Krone and the start-up company Trailer Dynamics.





THE VISION OF THE ELECTRICALLY POWERED TRAILER

In the eTrailer, an electrified axle replaces one of the conventional axles in the trailer. Via a sensory kingpin, the electric drivetrain can be reliably tracked in real time – even without control input from the semitrailer unit. The system can be combined with all common semitrailer units. The latter are supported with the additional e-axis power in the drive and can also be designed to be smaller – thereby reducing both running costs and total cost of ownership.

The combination of eTrailer and conventional diesel-powered lorry turns the semitrailer into an electric plug-in hybrid that consumes 20 to 40 per cent less diesel and has lower  ${\rm CO_2}$  emissions as a result. In combination with electric semitrailer units, the eTrailer enables a noticeable increase in range.

The response to the first presentations of the eTrailer was overwhelmingly positive. The innovative concept is being continuously developed through to series production readiness. 'We're well on track,' says Abdullah Jaber. Trailer Dynamics is currently working on a concept whereby the batteries can simply be swapped on the road so as to further increase range and avoid lengthier charging times.



# FOR A BETTER **TOMORROW**



uses a certified environmental management system

Sustainability is a fundamental part of today's reality and consistently pays attention to reducing emissions, and is essential to the Krone brand, too. The VALUES noise and odours as well as minimising waste and FOR A BETTER TOMORROW' provide a very useful waste water. In company buildings, energy and water guideline here. Under the CSR directive, the company consumption is kept as low as possible – energy and will in future publish a sustainability report that explicheat recovery systems are used consistently. The comitly describes ESG activities, i.e. in the areas of environment, social affairs and governance. In all areas, Krone order to create a comparative basis and identify weak



#### **OUR VALUES**

Krone is an international production and service company that pursues diverse activities in the agricultural machinery and commercial vehicle sectors, so it is more than meets the eye.

Since Krone is a family business, the family values of diligence, honesty, common sense, speed and courage continue to form the backbone of the company to this day.

- 1. We always put the customer and their needs at the centre of everything we do.
- 2. We promote the community of our employees as a valuable basis for the company's success.
- 3. We assume sustainable responsibility for all employees, the environment and society.
- 4. We strive to use our inventive spirit to create practical innovations that provide tangible benefits.
- 5. We act transparently and efficiently according to our principles in consideration of future generations.



# KRONE AGRICULTURAL **MACHINERY**

#### **Background**

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The consequences of the COVID-19 pandemic and the Russia-Ukraine conflict have further exacerbated the macroeconomic dislocations in production, the supply and logistics chain, and the shortage of skilled labour. Contrary to expectations, the order books are well filled, but the current economic conditions in agricultural machinery are tense. Dairy farms are experiencing a cost explosion that is impacting on everything from feed and fertiliser to energy prices. This meant that many farmers had to spend more money on milk production than in the previous year.

Nevertheless, the overall demand for agricultural machinery is at a high level. Revenues in the Group's Agricultural Machinery segment increased by EUR 14.7 million (1.8 per cent) from EUR 813.6 million to EUR 828.3 million in the 2021/2022 financial year. The German market contributed 26.8 per cent (previous year 25.3 per cent) to this turnover, the Western European markets a total of 33.1 per cent (previous year 35.6 per cent), Eastern Europe 10.7 per cent (previous year 9.9 per cent), North America 16.6 per cent (previous year 15.2 per cent) and the other countries 12.8 per cent (previous year 14.0 per cent).



Management of Krone Agricultural Machinery Left to right: Heiner Brüning, Martin Eying, Jan Horstmann



#### Investments

In the 2021/2022 financial year, consistent further developments were made in all product groups, from the scrap-tail-free V-type double knotter in the Krone BiG Pack square balers to the fully integrated silage additive system and a new machine in the area of mowing technology especially for the large areas in Oceania and overseas.

Reorganisation was consistently implemented at the plant with the aim of centralising and reducing hierarchical levels. In the production department, investments were made in a cross-technology robot-supported CNC milling machine. A 1,214 kWp photovoltaic system was installed in the area of industrial engineering which will produce approximately 950,000 kWh of green electricity per year in the future.



#### Sales locations

Netherlands Norway Argentina Belgium Austria Brazil Pakistan Bulgaria Paraguay Chile Poland China Portugal Costa Rica Romania Russian Fed. Denmark Saudi Arabia Germany Estonia Sweden Finland Switzerland France Serbia Georgia Slovakia Greece Slovenia India Spain Iran South Africa South Korea Ireland Taiwan Iceland Thailand Israel Czech Republic Italy Turkey Ukraine Hungary Uruguay Croatia USA UAE Latvia United Kingdom Lithuania Luxembourg

Mexico Cyprus

New Zealand

Japan Canada Kazakhstan Colombia

Belarus

#### Statement

Looking ahead to the 2022/2023 financial year, high overall economic capacity utilisation is expected as a result of continued excess demand in many relevant industrial sectors. In addition to a shortage of materials, an increasing shortage of skilled workers will also have an impact on the available production capacity in the supplier industry, resulting in a further tightening of supply chains in the coming months. Noticeable relief is not expected here before the end of 2023. The leading indicators available indicate that a macroeconomic recession likely in 2023. Demand for agricultural machinery could be affected.

Summary/outlook

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The future of the agricultural industry is subject to a range of diverse and dynamic conflicting tensions between the individual economic powers and consumers' desires and expectations regarding increased quality, safety, transparency and sustainability. Looking ahead, the global agricultural machinery market can continue to be rated as positive. Global demand for agricultural products and the need for innovative technology continue unabated.

In the 2021/2022 financial year, the global market for forage harvesting machinery moved sideways. Krone was able to confirm and selectively expand its market position. The development of Krone Agricultural Machinery is significantly impacted by the economic situation of milk producers as the most important customer group. A cooling of the agricultural machinery markets in the course of the calendar year 2023 is very likely due to the income situation in agriculture.

## FIGURES AT A GLANCE



Regional distribution of turnover Agricultural Machinery 2021/2022



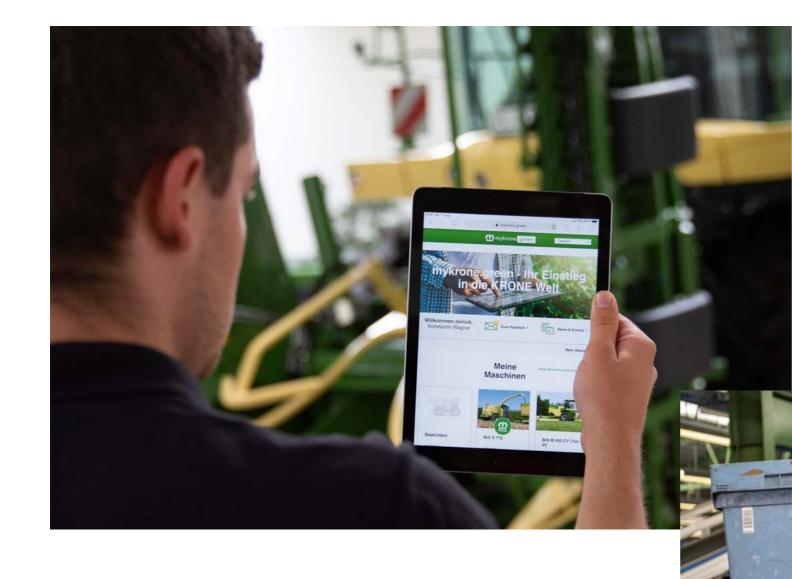
Turnover development in Agricultural Machinery (consolidated)

- Domestic
- Export



# KRONE

# KRONE WORKS EFFICIENTLY





The Krone service world for agricultural machinery was strategically expanded in the 2021/2022 financial year. There are various interlocking components that ensure all customers have access to the best possible service and enjoy the highest possible machine performance. This starts with effective customer service: Krone offers a close-knit, nationwide network of service points throughout Germany. In order to further enhance service performance, the Krone e-solutions on the 'myKrone.green' portal have been expanded to include digital smart support. This enables service partners and commercial end customers to access service-relevant machine data online as well as perform digital remote diagnostics and maintenance.



Another component of the service world is the spare parts service: this is available on a round-the-clock basis during the harvest season. Krone has made another forward-looking investment here by starting construction of the new spare parts centre.

Even the very best agricultural machine can only fully demonstrate its qualities if users and service staff are in perfect control. Ensuring this is the job of the Krone Training Centre, where some 4,000 people receiving training every year. The Krone training network also includes five other German training sites. Although Krone's digital training offerings are being expanded, many participants from the 65 countries worldwide in which Krone Agricultural Machinery is represented continue to rely on the well-established practically oriented on-site training programme.



guaranteed to perform the defined work processes of ploughing, cultivating, sowing, mowing, turning and windrowing without any problems. The combination of these six different work processes also guarantees excellent utilisation of the machine throughout the year.

When designing the drive unit, Lemken and Krone were guided by the power requirements relevant to these work processes. For example, the concept study has a diesel-electric drive with a total output of 170 kW (230 hp) that is transmitted electrically to the two drive axles and the power take-off shaft. The implements are coupled to the drive unit via a three-point

The towing vehicle has extensive sensor systems that monitor the surroundings and the implements, ensuring a focus on safe work use and optimum work results at all times. The unit is operated and monitored via mobile terminals; work orders and documentation are transmitted via a communication module and the familiar Agrirouter data hub.

When designing the project, the focus was on achieving the best possible work results in all areas of application, which is why the implement also controls the drive unit. In this way, the implement and drive unit act as a smart, homogeneous system. The communication and interaction between the implement and the drive unit derives from Krone's and Lemken's longstanding experience in the field of ISOBUS and TIM. In this way, all relevant information can be exchanged between the implement and the drive unit without exception.

The VTE is also a sustainable response by Krone and Lemken to the looming shortage of skilled workers in the industry. Instead of spending long working days in the field, the farmer can now act as a system supervisor on controlling the VTEs, which deliver consistent, precise work quality. Another bonus: due to the wide range of applications, the machine can be deployed all year round for a very long period of time.

## **KRONE INVENTS**

this joint concept study in practical use for the first time this year. The two partner companies deliberately do not regard their study of an autonomous 'process engineering unit' (VTE) as competing with the tractor, but rather as an innovative, forward-looking supplement to proven work processes in the areas of cultivating, ploughing and sowing, as well as mowing, turning and windrowing.

action at an international press event. One VTE was used with a Krone EasyCut F 400 Fold front mower

'Combined Powers' – Krone and Lemken presented VTE was quickly and easily converted and equipped with a Vendro 820 tedder, enabling the freshly mown crop to be turned over a working width of 8.20 metres. On an adjacent area, the second VTE performed in combination with Lemken machines.

Both VTE prototypes demonstrated impressive work quality and speed, as well as traction, pulling power and ground protection. The weight of the 2.70 m wide and 2.60 m high VTEs ranged between 7.5 t and 8 t, Two autonomously operating VTEs were presented in depending on intended use and ballasting. The autonomous units have an output of 170 kW (230 hp) and are equipped with four 38-inch wheels of the with a working width of 4 metres. After mowing, this same size. Thanks to their powerful drive, the VTEs are



# (RONE

# CONSOLIDATED BALANCE SHEET

#### 31 July 2022

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ASS	ETS	31 July 2022	31 July 2021	31 July 2020
		kEUR	kEUR	kEUR
A.	Fixed assets			
	I. Intangible assets	29,718	34,403	36,822
	II. Property, plant and equipment	326,680	308,622	305,879
	III. Financial assets	88,488	77,069	73,007
	Total fixed assets	444,886	420,094	415,708
В.	Current assets			
	I. Inventories	584,483	406,456	405,586
	II. Receivables and other assets	334,644	277,678	273,858
	III. Cash on hand, bank balances	281,893	337,056	205,005
	Total current assets	1,201,020	1,021,190	884,449
c.	Prepaid expenses	12,071	9,865	9,876
D.	Deferred tax assets	29,439	25,668	23,561
Bala	nnce sheet total	1,687,416	1,476,817	1,333,594

LIAI	BILITIES	31 July 2022	31 July 2021	31 July 2020
		kEUR	kEUR	kEUR
A.	Equity	701,647	645,371	588,712
В.	Difference from capital consolidation	26,024	26,024	26,024
C.	Provisions			
	1. Provisions for pensions and similar obligations	88,219	79,873	74,150
	2. Tax provisions	11,719	18,687	13,245
	3. Other provisions	131,602	124,697	88,709
	Total provisions	231,540	223,257	176,104
D,	Liabilities			
	1. Liabilities to credit institutions	400,232	448,184	335,102
	2. Liabilities from deliveries and services	186,414	53,267	94,671
	3. Liabilities to shareholders	388	384	339
	4. Amounts owed to affiliated companies	5,009	1,056	821
	5. Liabilities to companies in which participations are held	288	99	388
	6. Other liabilities	130,593	73,716	101,200
	Total liabilities	722,924	576,706	532,521
E.	Prepaid expenses	5,281	5,459	10,233
Bala	ance sheet total	1,687,416	1,476,817	1,333,594

# CONSOLIDATED PROFIT AND LOSS ACCOUNT

for the period 1 August 2021 to 31 July 2022	2021/2022	2020/2021	2019/2020	
	kEUR	kEUR	kEUR	
Revenues	2,524,998	2,191,613	1,900,697	
Increase or decrease in the stock of				
finished goods and work in progress	116,199	-20,584	-28,179	
Other own work capitalised	856	1,220	340	
Cost of materials	-2,007,774	-1,561,770	-1,319,486	
Gross profit	634,279	610,479	553,372	
Other operating income	43,928	27,478	26,328	
Personnel expenditure	-346,392	-321,090	-300,154	
Amortisation of intangible assets				
and property, plant and equipment	-39,381	-38,947	-37,233	
Other operating expenses	-209,092	-181,796	-194,876	
Other taxes	-977	-838	-1,984	
Operating result	82,365	95,286	45,453	
Income from investments	4,574	3,847	1,575	
Financial result	-2,291	-3,169	-5,029	
Result before income taxes	84,648	95,964	41,999	
Taxes on income and earnings	-20,092	-26,321	-11,524	
Consolidated net profit	64,556	69,643	30,475	
Profit or loss attributable to minority interests	-765	-686	-461	
Consolidated profit	63,791	68,957	30,014	

# 5-YEAR OVERVIEW

Financial year (in kEUR, 1 August – 31 July in each case)		2021/2022	2020/2021	2019/2020	2018/2019	2017/2018
Profit and loss account						
Revenues		2,524,998	2,191,613	1,900,697	2,240,052	2,133,754
– Domestic share	in %	27.4	25.1	29.3	30.9	27.3
– Foreign share	in %	72.6	74.9	70.7	69.1	72.7
Return on sales	in %	3.4	4.4	2.2	3.5	3.7
Result before income taxes		84,648	95,964	41,999	78,186	78,519
Net profit for the year		64,556	69,643	30,475	58,918	50,357
Asset/capital structure						
Balance sheet total		1,687,416	1,476,817	1,333,594	1,305,493	1,130,248
Fixed assets		444,886	420,094	415,708	406,391	331,887
Current assets		1,201,020	1,021,190	884,449	871,763	779,398
Equity		701,647	645,371	588,712	585,135	533,823
Equity ratio	in %	41.6	43.7	44.1	44.8	47.2
Return on equity	in %	12.1	14.9	7.1	13.4	14.7
Provisions		231,540	223,257	176,104	160,056	129,487
Liabilities		722,924	576,706	532,521	529,095	436,217
Financial position						
Investments in property, plant and equipment		42,135	33,958	47,604	78,070	55,040
Depreciation of property, plant and equipment		29,966	29,912	28,443	31,059	23,481
Cash flow		132,375	140,634	85,020	124,095	112,478
Net debt		118,339	111,128	130,097	225,146	147,681
Employees						
Number of employees		5,768	5,438	5,375	5,292	4,897
Personnel expenditure		346,392	321,090	300,154	311,611	276,666

#### DEFINITION

Return on sales

Result before income taxes x 100 Revenues

Cash flow

The cash flow is calculated from the result before income taxes + depreciation + change in long-term provisions.

Equity ratio

 $\frac{\text{Equity}}{\text{Balance sheet total}} \times 100$ 

Net debt

The net debt includes the sum of all financial liabilities to credit institutions, less cash and cash equivalents.

Return on equity

Result before income taxes Equity × 100

Number of employees

Average number of employees in the financial year (including apprentices and trainees)





#### BERNARD KRONE HOLDING SE & CO. KG

Heinrich-Krone-Straße 10 - D-48480 Spelle + 49 59 77 935-0 - www.krone-group.com