



SUSTAINABILITY REPORT

2024



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1 Company profile and business model

The MAPAL Group is a world-leading company in the precision tool industry and supplies innovative solutions for machining high-precision components in a wide range of sectors, including the automotive, aerospace and mechanical engineering industries. With a wide portfolio of tools and services, the MAPAL Group helps its customers continually boost the efficiency and precision of their manufacturing processes. The product portfolio consists, in particular, tools for reaming, drilling and milling, mechatronic systems, tool presetting units, and solutions for clamping and measuring system management. These products are designed to ensure maximum precision, productivity and efficiency in exacting manufacturing processes.

Founded in 1950, MAPAL Dr. Kress SE & Co. KG made its name worldwide through technological innovation, premium quality and client-focused solutions. Today, the MAPAL Group is represented with subsidiaries and production sites in 25 countries. It consistently treats resources responsibly and takes a sustainable approach to doing business.

The MAPAL Group's strategy is based on a consistent orientation towards its clients' needs and continuous striving towards technological advancement. Innovation is a cornerstone of this strategy: MAPAL makes targeted investments in research and development to create tools and technologies that meet industry requirements while improving the efficiency and sustainability of manufacturing processes. Using state-of-the-art manufacturing technologies and smart digital solutions, MAPAL boosts its clients' competitive edge and helps optimise their production processes.

The MAPAL Group's business model is client-focused and offers tailored solutions that can be adapted individually to different industries' requirements. MAPAL ensures maximum flexibility with a highly diversified portfolio comprising standardised and client-specific tools and a host of bespoke services along the machining process. A major aspect of the business model is working closely with clients to develop innovative solutions that enable increased efficiency, cost reductions and precise results. When working with clients, MAPAL strives towards a technological partnership that helps the parties achieve optimal results together.



2 Stakeholders

2.1. Clients

Clients drive the innovation and success of the MAPAL Group and can trust that MAPAL can be found wherever they are, around the globe. With technical expertise and decades of experience, MAPAL's specialists meet every client requirement worldwide. Regular communication with clients takes place through themed workshops, individual product advice, joint product development and frequent on-site visits to discuss current issues.

2.2. Owners

MAPAL Dr. Kress SE & Co. KG has been a family business since its foundation. Safeguarding family values and principles and passing them on to subsequent generations is vital for MAPAL. The owners' active involvement therefore makes this stakeholder group a key one.

2.3. Employees and management

MAPAL's employees are among the most valuable resources enabling its growth and development. Communication takes place through regular internal meetings within a department or interdisciplinary team, regular professional development reviews and training.

2.4. Suppliers

Suppliers are key strategic partners, helping achieve better results, procure expertise and drive innovation.

No. 1

technology leader for the machining of cubic parts

Branch offices with production, sales and service in

25

 countries.

Over

450

technical consultants in the field.

More than

270

apprentices worldwide.

Yearly investment in the service portfolio amounting to

6%

of turnover.

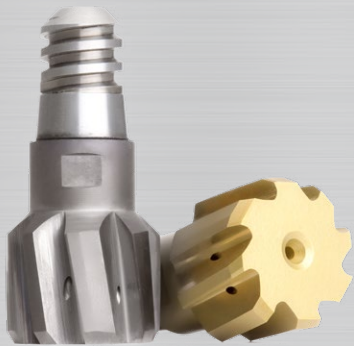
Our biggest asset:

4.850

employees worldwide.

3 Products and value chain

MAPAL has a comprehensive portfolio of products and services that is perfectly positioned to meet requirements for process reliability, precision and cost-effectiveness. Supplemented by intelligent services, the customer receives a complete package for machining tasks.



Reaming and fine boring

Tools for the fine machining of bores represent the core competence of MAPAL. Whatever the complexity of the machining and the requirements placed on precision, MAPAL has the right solution.



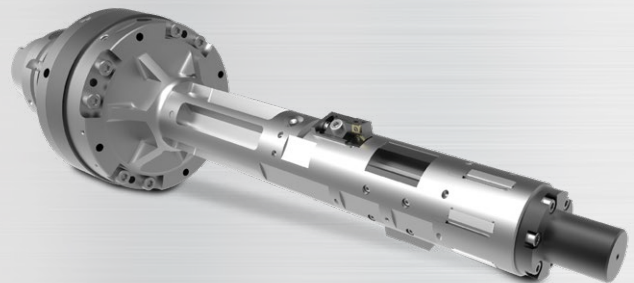
Drilling from solid, boring and countersinking

The drilling from solid and countersinking range comprises cost-effective solid-carbide tools offering process reliability and modern replaceable head systems. Boring tools, used between drilling from solid and fine machining, must be extremely robust and cost-effective in operation. MAPAL offers a comprehensive range of tools in this area with ISO indexable inserts and with fixed brazed PCD inserts.



Turning

MAPAL also specialises in hard turning with PcBN cutting materials. Special tool systems and a wide range of standard indexable inserts are supplemented by HSK-T turning holders. They allow the user to benefit from the plus points of the HSK connection on turning machines, too.



Actuating

Actuating tools hold the greatest potential for rationalisation and optimisation during the machining of complex contours, non-cylindrical bores, face surfaces and recesses. They are used on custom machines or for complete machining on flexible machining centres.



Milling

The right tool is available for every milling operation: Solid-carbide end-milling cutters, milling cutters with PCD-tipped cutting edges, and milling cutters with replaceable ISO inserts. Along with the common types of machining, MAPAL also covers special methods such as circular milling, trochoidal milling or helix milling.



Clamping

When tools are used, their connection to the machine spindle, and with it the clamping technology, plays a central role. MAPAL offers a connection for every application that ensures the tool has the performance, radial run-out accuracy and changeover accuracy it needs.



Setting, measuring and dispensing

In modern manufacturing facilities, highly precise setting fixtures and measuring devices and storage systems are used. A holistic modular system is available to clients for this peripheral area with the products from MAPAL.



Services

In the metal-machining industry, the focus is on process costs. Anybody who wants to control them must understand all processes. MAPAL's tailored and well-thought-out services assist with all stages and areas of production.

Key client groups include businesses in the automotive industry, particularly manufacturers and suppliers producing high-precision components for engines and gear units. Aerospace is another major market where the MAPAL Group supplies tools and machining solutions for final assembly and component manufacturing. Fluid tech-

nology and mechanical and plant engineering businesses also rely on the MAPAL Group's tailored solutions. The group works closely with clients to develop solutions that meet the most stringent requirements for productivity, precision and sustainability.

4 Sustainability and durability of the products

4.1. Reconditioning of tools in OEM quality

The reconditioning of machining tools – such as PCD tools, solid carbide tools, and tools with indexable inserts or ISO elements – unlocks enormous potential for sustainability in the manufacturing industry. Tools can be brought back to their former glory through regrinding, restoring guide pads, exchanging inserts, recoating, etc. In principle, this should allow them to regain their original tool life. As a result, the service life is doubled at least. Reconditioning tools also reduces consumption of vital resources considerably.

4.2. Modularität für eine ressourceneffiziente Fertigung bei unseren Kunden

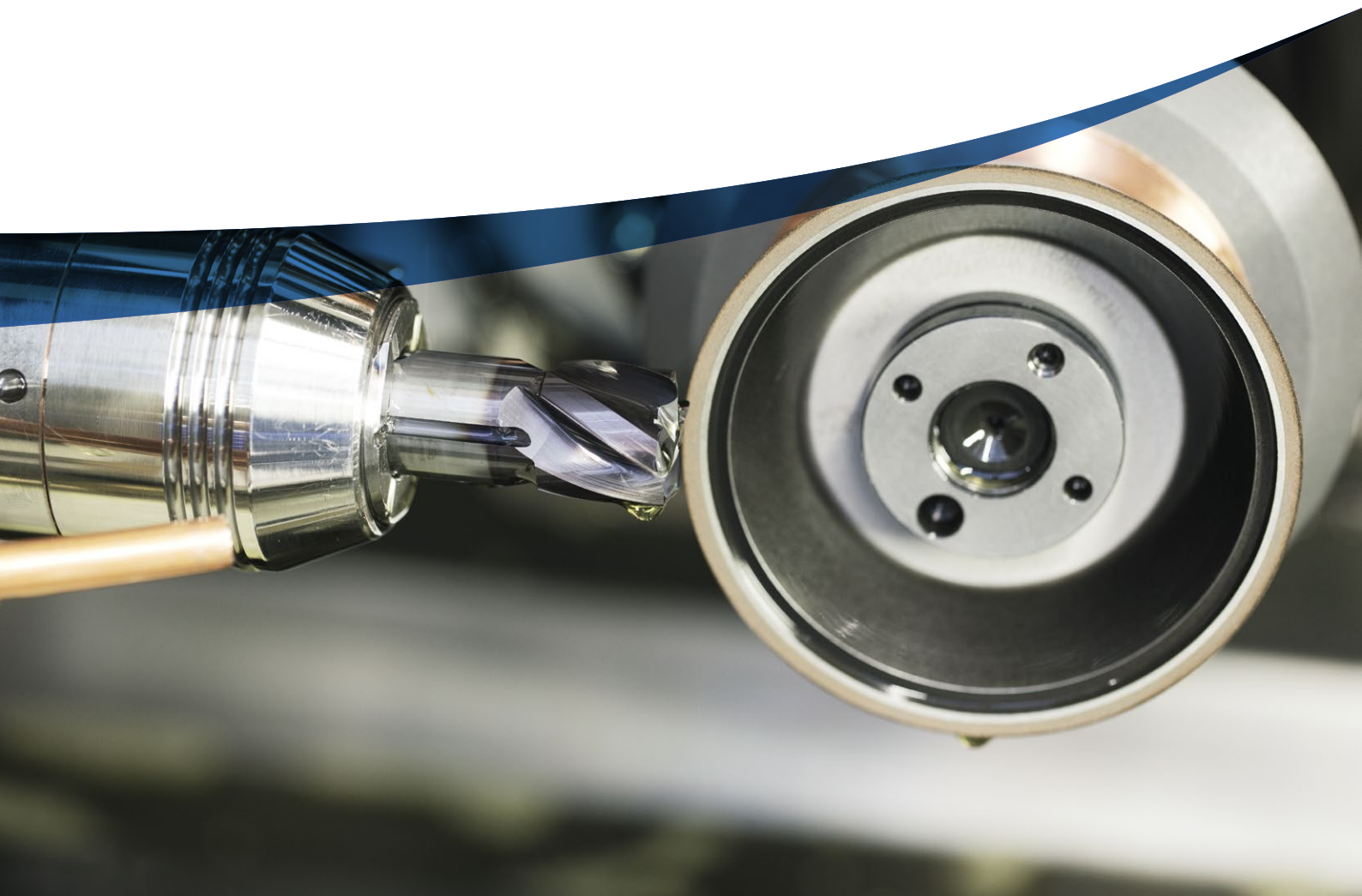
By using replaceable head systems and indexable inserts, the MAPAL Group makes a significant contribution to environmental sustainability and resource efficiency in the manufacturing industry. The company helps its customers protect resources at the same time. Instead of replacing entire tools, only the heads or the indexable insert are replaced. This saves materials and energy and reduces waste as well as the environmental impact. Modularity may also facilitate flexible adaptation to various machining tasks, which increases operational efficiency.

4.3. Minimising use of cooling lubricant

Minimum quantity lubrication (MQL) technology represents an ecologically responsible approach to machining. Because not as much cooling lubricant is used, fewer resources are consumed by the client and less energy-intensive high-pressure pumping is needed. The technology also reduces the amount of waste produced by the cooling lubricant used, which lowers disposal and recycling costs. In this way, the MAPAL Group also helps its clients make their own efforts toward sustainability.

4.4. Switching to packaging made from recycled materials

The MAPAL Group is striving to cut its emissions and reduce its use of plastic to a minimum. Accordingly, recycled materials are increasingly used for protective covers in packaging, without sacrificing quality: Tools continue to enjoy a high standard of protection – this helps to protect the environment.





5 Employees

MAPAL builds on the knowledge and the commitment of its employees and in return offers the best conditions for a successful, secure future: Engaging roles, extensive development opportunities and modern working conditions in a global environment.

5.1. Wide range of training opportunities

The MAPAL Group also helps its employees develop through internal and external training opportunities and its in-house MAPAL Academy. This promotes lifelong learning and continuing professional development.

5.2. Healthy working conditions

Employee health and wellbeing matters to MAPAL. Accordingly, an ergonomic setup is taken into consideration when creating workplaces. The company also organises regular health and wellness days, running events and other health-promoting activities to encourage staff wellbeing and give employees useful tips on living a healthy lifestyle.

5.3. Respecting human rights

Respecting human rights is a key aspect of the MAPAL Group's corporate culture and is enshrined in the Code of Conduct. The company firmly believes that treating each other with respect and promoting fair working conditions is crucial to the lasting success of the business. The Code of Conduct sets clear standards that apply to all employees and ensure the right to fair treatment, diversity, equality and inclusion, as well as protection against discrimination and exploitation.



6 Environment

The MAPAL Group has introduced and certified an environmental management system according to ISO 14001 and an energy management system according to ISO 50001 at most of its German locations. The further development of these management systems supports the ongoing improvement of environmental and energy indicators. An overview of the certifications and the current certificates can be found on the MAPAL website at:

<https://mapal.com/en-int/media/certificates>.

6.1. Carbon footprint

As part of the MAPAL Group's commitment to climate action, the group calculates its overall carbon footprint. This allows emissions to be systematically recorded and analysed. In doing so, MAPAL adheres to the global standard of the Greenhouse Gas Protocol, which puts emissions into three categories, or Scopes.

The following illustration shows the MAPAL Group's carbon footprint for 2024. This was calculated based on the specifications of the Greenhouse Gas Protocol and ISO 14064.

MAPAL Group greenhouse gas emissions (in t CO ₂ e)	2024
Overall greenhouse gas emissions	25,196
Total direct greenhouse gas emissions (Scope 1)	6,982
Of which stationary combustion	4,291
Of which mobile combustion	2,691
Total indirect greenhouse gas emissions (Scope 2)	5,693
Of which purchased electricity	5,462
Of which purchased heating/cooling	231
Total other indirect greenhouse gas emissions (Scope 3)	12,521
3.1 Purchased goods and services	5,630
3.5 Waste	288
3.6 Business travel	588
3.7 Employee commuting	6,015



6.2. Energy consumption

Energy consumption and efficiency are key levers on the route to sustainability and protecting resources. To reduce the impact of its energy consumption on the climate, the MAPAL Group records and analyses relevant energy indicators on an ongoing basis. These indicators not only offer transparency on energy use – they also help implement targeted measures to boost efficiency and reduce energy consumption.

The following overview of the MAPAL Group's energy consumption in 2024 shows that a significant proportion (80%) of the energy MAPAL uses already comes from renewable sources. This is also underscored by the initiatives referred to in this report. For instance, the Group's German locations procure green energy from hydropower, thereby covering their entire electricity consumption with renewable energy.

MAPAL Group energy consumption (in kWh)	2024
Overall energy consumption	49,882,725
Total energy consumption from non-renewable energy sources	7,572,581
Of which consumption from crude oil and petroleum products	73,551
Of which consumption from natural gas and other gas products	3,275,449
Of which consumption from coal and coal products	4,223,581
Total energy consumption from renewable energy sources	39,909,755
Of which biomass	43,259
Of which biogas	88,359
Of which hydropower	37,722,832
Of which wind power	392,234
Of which solar power	1,663,071
Total energy consumption from Nuclear power	2,400,389

6.3. Waste management and the circular economy

MAPAL pays close attention to proper separation of waste produced. This enables the company's disposal partner to ensure environmentally friendly handling of waste, whether it is recycled, reused, used for energy production or disposed.

The optimisation of waste management is based on a yearly review of the waste database and a systematic recording of all types and volumes of waste produced. This is a key aspect of MAPAL's approach to sustainable and efficient waste disposal.

Comparing data with the previous year helps identify trends and changes. This analysis makes it possible to draw up specific measures for improving waste management. In this way, for instance, the different waste fractions produced or the waste separation rate can be determined. Measures for improved separation, for instance, can be introduced on this basis.

The MAPAL Group takes back decommissioned tools and ensures they undergo proper disposal and a comprehensive recycling process. This process enables the extraction and re-use of valuable raw materials used in tools. Recycling materials saves valuable resources and reduces the environmental impact associated with breakdown and processing. This creates a sustainable cycle in which materials can always be reused instead of ending up as waste.

7 Corporate social responsibility

MAPAL supports active corporate social responsibility and commitment on the part of its employees. This not only promotes social cohesion and community – it also reinforces MAPAL's corporate values. Examples include various local and regional initiatives which are regularly supported at all locations through things like donations. Another example is the annual blood donation drive organised by the Trainee Council in Aalen, in which all employees can take part.

8 Membership of associations and interest groups

MAPAL is a member of the VDMA, Leichtbau BW, Blue Competence, the Gesellschaft für Fertigungstechnik und Entwicklung Schmalkalden (GFE), the Hochschule Aalen advisory board and the IHK innovation circle.

9 Further information and contacts

Further information on sustainability at the MAPAL Group can be found at:

<https://mapal.com/en-int/sustainability-at-mapal>

Gender-neutral language has been used throughout this document. All terms apply equally to all genders.

The MAPAL Group adhered to the standards of the Global Reporting Initiative (GRI) when producing this report.

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