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EMC.Maintenance

Digital maintenance for machines and tools

With the E**MC.Maintenance module,** you can cleanly clock in **maintenance, repairs and servicing, including all components and spare parts used,** both manually and according to individually predefined maintenance cycles. The **central management of maintenance plans** and the **automated monitoring of planned maintenance and maintenance cycles** with real-time data enables **high technical availability of machines and tools as well as peripherals.** In addition, it provides important analyses of required spare parts and maintenance-related downtimes.

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Status Quo

The previous, analog documentation of maintenance

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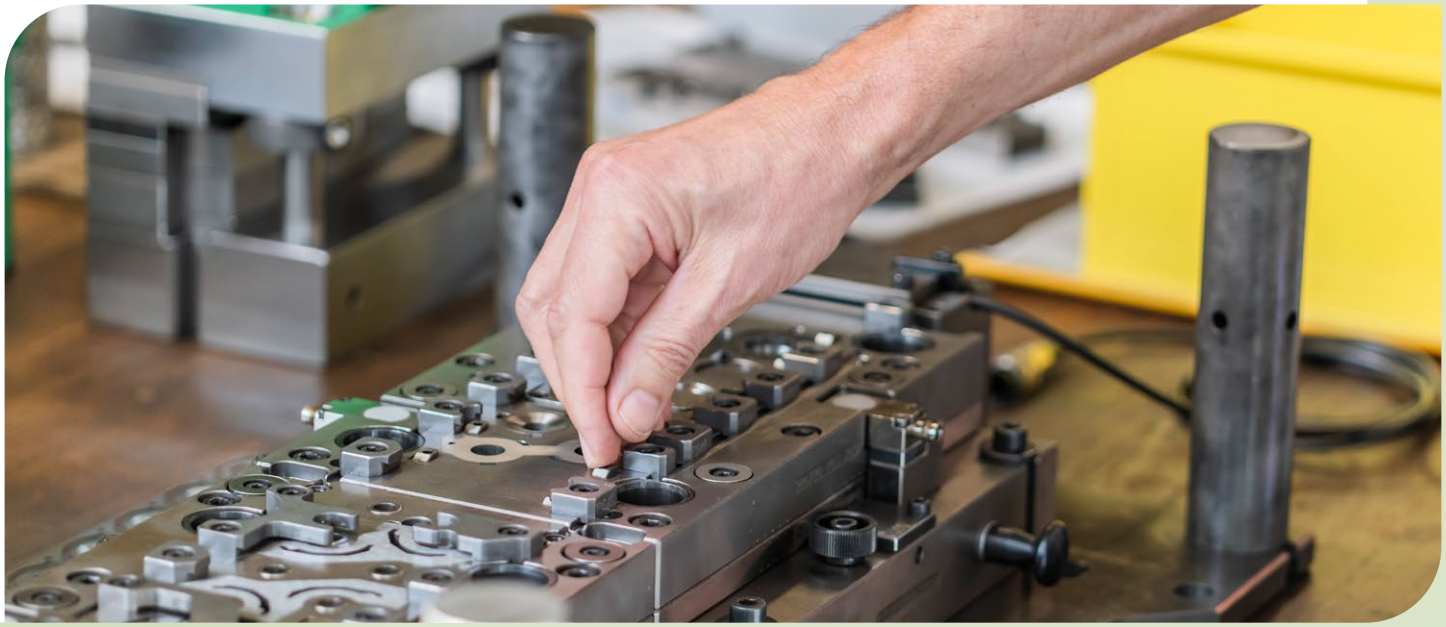
Maintenance of machines and tools – systematic and comprehensible

One of the greatest challenges in manufacturing is to keep the machines running and thus avoid production delays. The **exact and complete definition and documentation of maintenance and repairs,** both for machines, tools of varying complexity - with or without changeover modules, inserts or spare parts - and the periphery, is the **necessary prerequisite for high system effectiveness** and has a decisive influence on the **effectiveness of production.**

With the **EMC.Maintenance module, maintenance and repair orders,** including all components and spare parts used, can be **neatly scheduled and executed** both manually and according to individually predefined maintenance cycles.

The combination of **automatically generated maintenance orders** and **key figure-driven maintenance** enables **high technical availability** of machines, tools as well as peripherals. It significantly supports production in **reducing machine downtimes and production interruptions to a minimum.**

In addition, the current maintenance or repair status, the maintenance cycles, the condition and the location of the tools, for example, can be determined at any time in the **EMC.maintenance module** via the **digital lifecycle card,** and maintenance and servicing can be planned and carried out **according to the actual use.**



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EMC.Maintenance

Seamless and digital maintenance planning, execution and documentation

With the **EMC.Maintenance module,** maintenance of machines, tools and peripherals is determined, planned, carried out and documented **according to the actual use. Unforeseeable events** such as repairs are documented like maintenance in the **digital lifecycle card.** This makes manual records and Excel entries for maintenance and servicing a thing of the past.

ID Date	Resource	Maintenance name Status	Handled by	Next maintenance at Creator / M. mode
W 7979	**W-00008**	General tool maintenance Active since 06.04.	A. Schneider	2506921 [tact] Tact interval
W 7984	**W-00007**	Routine maintenance 1 Active since 07.04.		122235 [tact] H. Müller
W 7993	**W-00007**	Maintenance before storage Active since 21.04.	F. Maier	Tact interval
W 8007	**W-00011**	Maintenance (stock) Active since 24.06.		Tact interval
W 8014	**W-00007**	Draw die Active since 20.07.		Runtime

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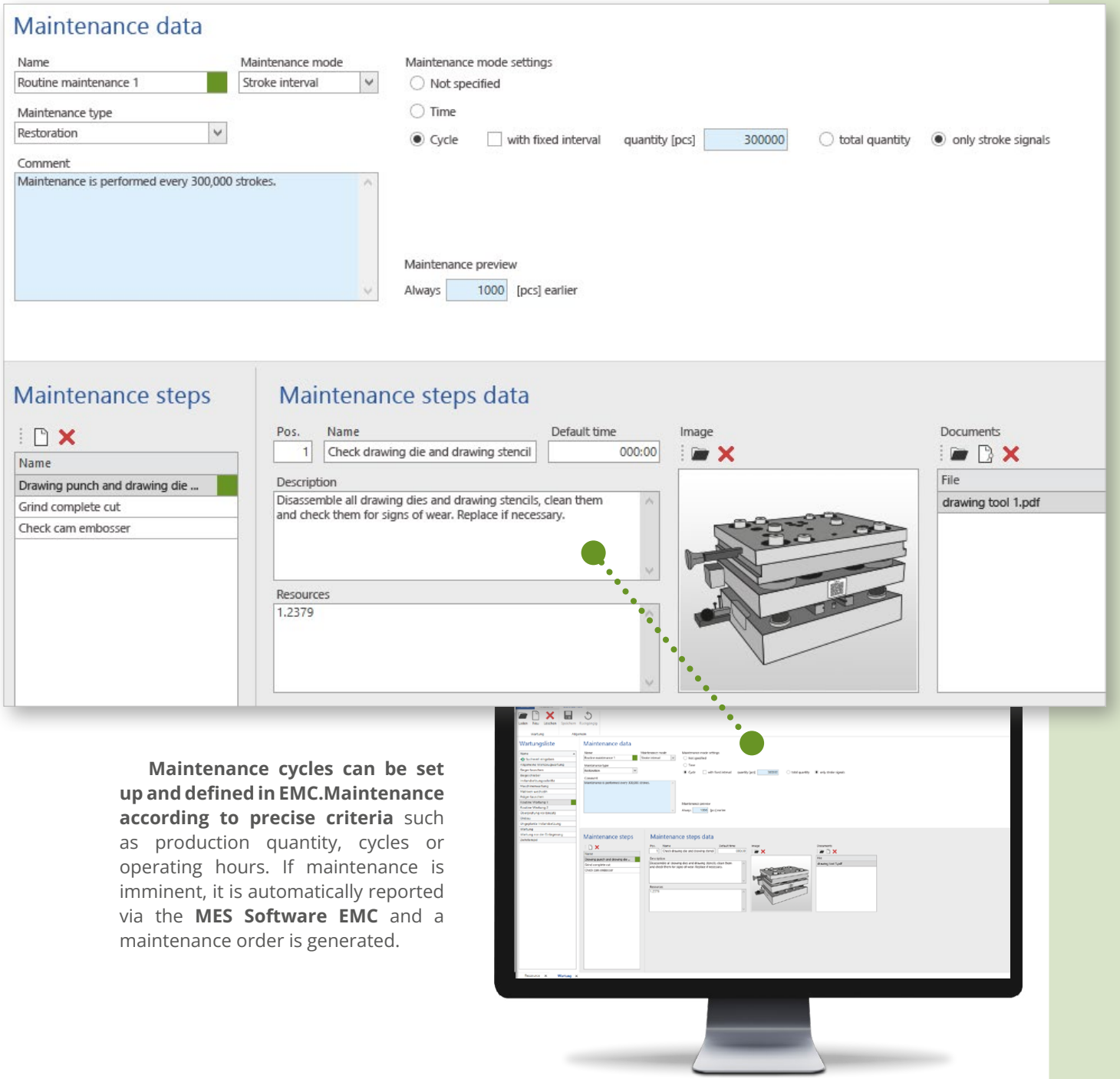
Define maintenance

Maintenance and maintenance plans are defined as master data. The individual maintenance is divided into the maintenance steps, which precisely describe the individual activities to be performed during the maintenance.



Maintenance cycles can be set up and defined in EMC.Maintenance according to precise criteria such as production quantity, cycles or operating hours. If maintenance is imminent, it is automatically reported via the **MES Software EMC** and a maintenance order is generated.

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Maintenance manager

The maintenance manager **monitors all machines and tools and generates a maintenance order as soon as the maintenance cycle is reached.** According to the defined maintenance preview, the upcoming **maintenance order is displayed in the machine or tool department.**

The maintenance department receives **optimal information** about which maintenance is due at which time and thus the basis for **forward-looking planning.** In the case of unforeseeable situations such as „tool breakage during production", **this transparency helps to make the right decisions and minimize production downtimes.**

Machine maintenance – digital and reliable

When a machine is due for maintenance, the employee can simply **start the maintenance order via the portal** and carry out the maintenance. **All the information required for maintenance is already stored digitally.**

Alternatively, by **scanning a QR code attached to the machine,** the maintenance order can be **displayed** directly on the end device, maintenance can be **started,** and the individual maintenance steps can be **documented.**

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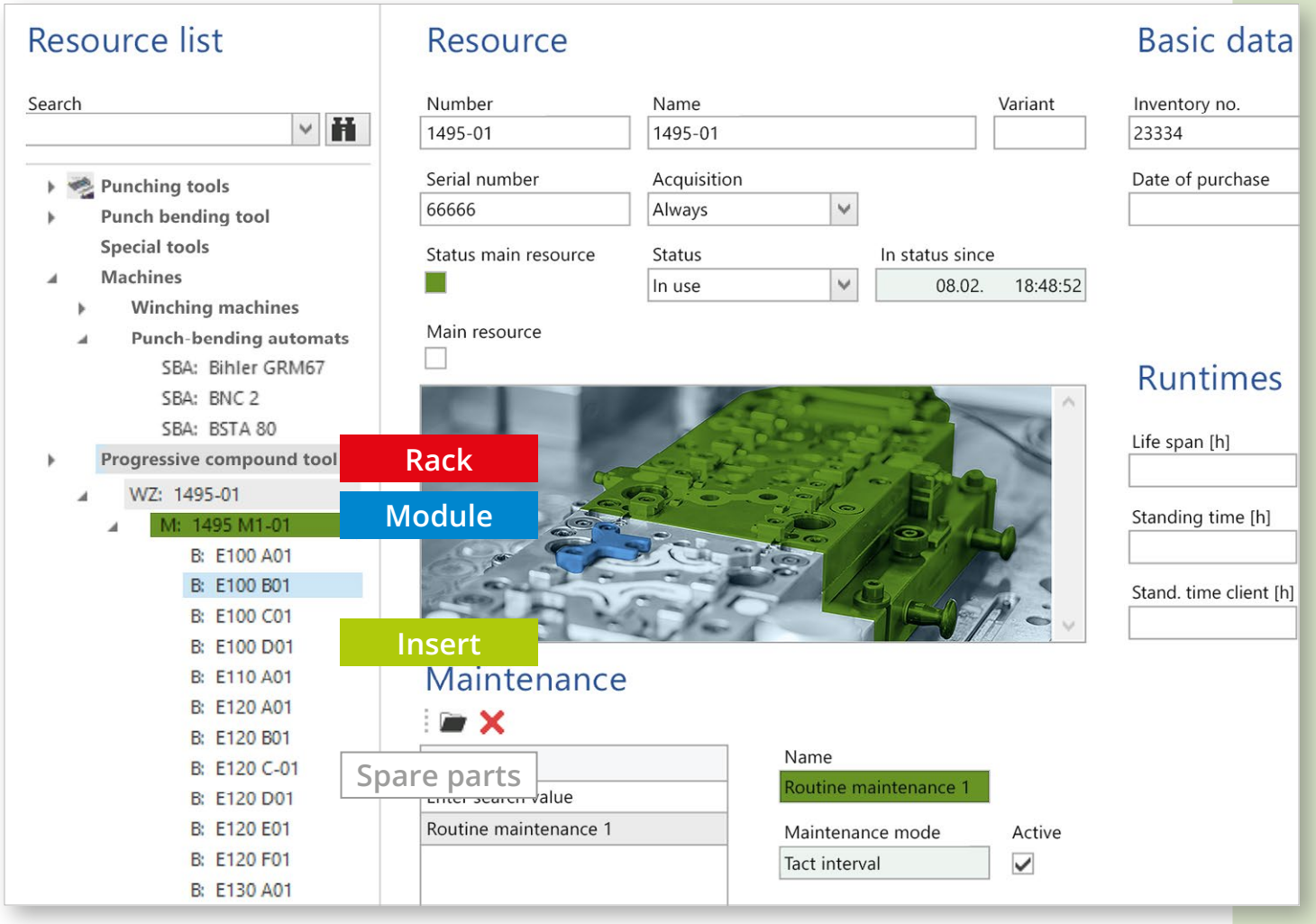
Maintenance of tools including all components used



In the **EMC.Maintenance module,** the tool including all used tool components is mapped in the required detail for maintenance.

The master data of the tool are the **basis for a complete documentation** of the entire life cycle of a tool in the digital lifecycle card. Complex tools are structured in a structure tree with categories and category groups that can be freely defined. **Simple tools** do not require any detailing.

Stand times and maintenance can be assigned in detail to the rack, modules, assemblies and inserts. **Information** on the manufacturer, date of acquisition or even the complete machine documentation **can be easily stored.**

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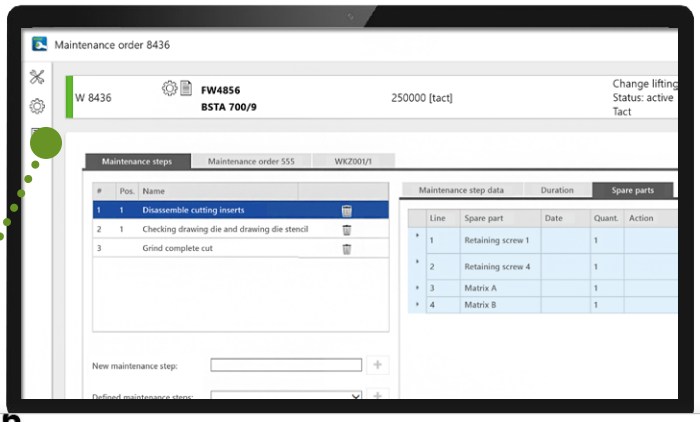
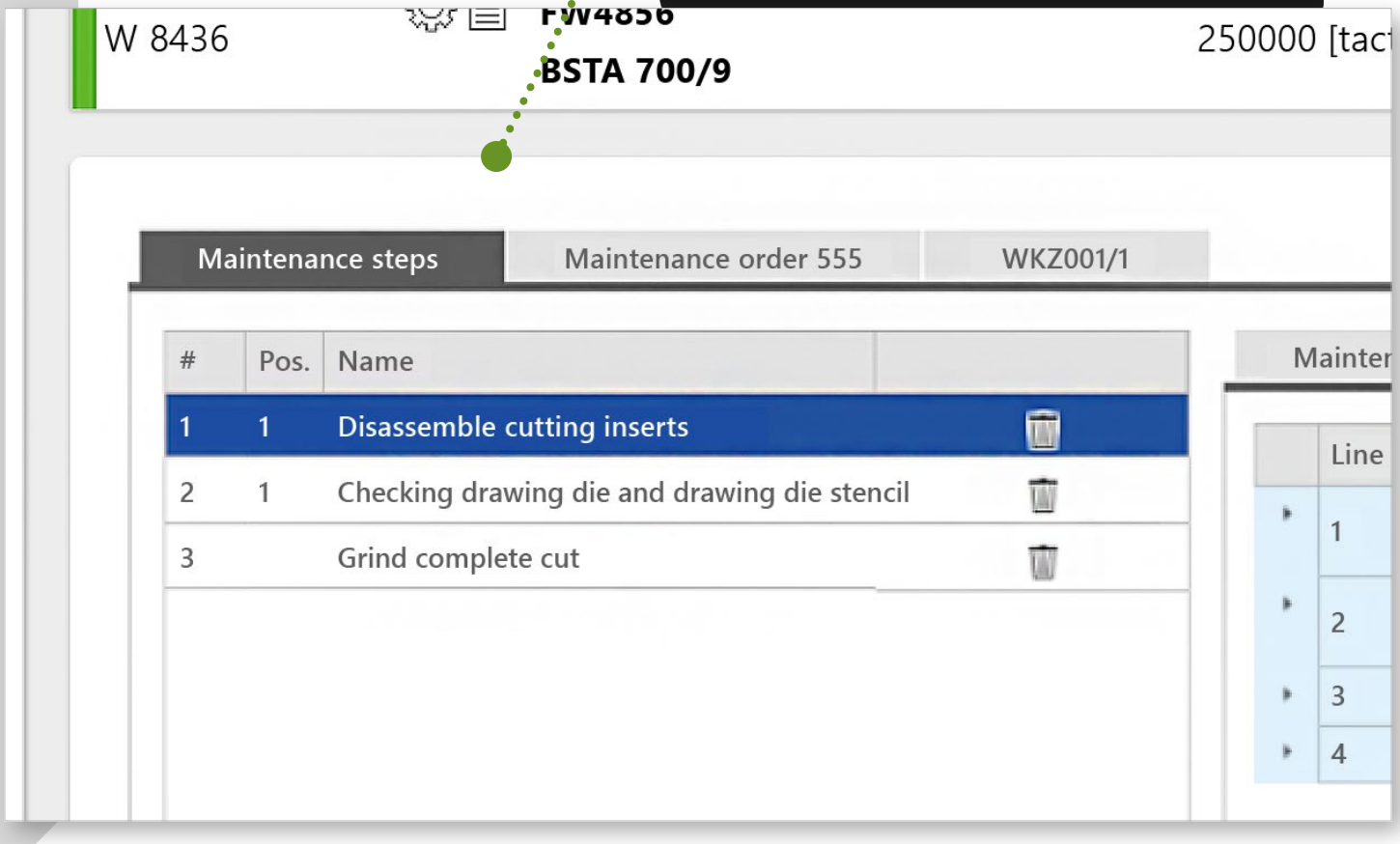
Perform maintenance

The **automated and digital documentation process** generates a reliable digital lifecycle card with **complete documentation of all maintenance.** The **actual operating times and stroke rates** are assigned to the maintenance.

Maintenance is then carried out **according to the specified maintenance steps.** Work instructions and pictures ensure that **maintenance is always carried out in the same way by different employees.** Spare parts used, processed operations and comments are documented for each maintenance step.

All steps performed and spare parts used are **confirmed in the system.** In this way, **production planning** also recognizes which tools are available, in repair or defective. **All those involved in the company know** at all times what condition the tools are in, how often they are used and what they are used for.





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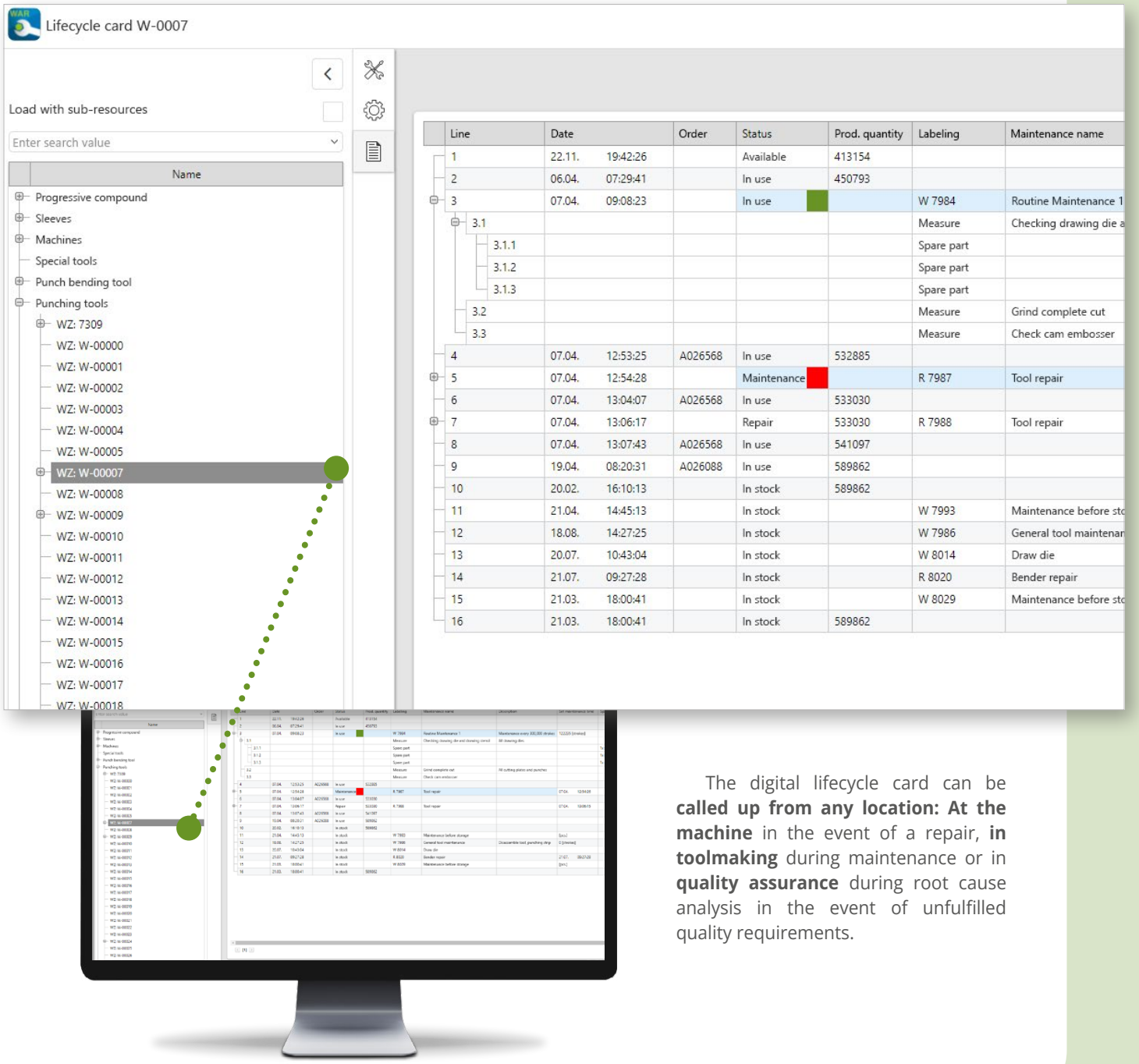
Documented maintenance in the digital lifecycle card

All maintenance work performed as well as repairs are **seamlessly documented in the digital lifecycle card** and provide information on the **current condition and availability of the resource.** Thus, the entire lifetime of the machine or tool is documented in the history. Further information such as article and order are linked. Installed spare parts and their number can be traced exactly.



The digital lifecycle card can be **called up from any location: At the machine** in the event of a repair, **in toolmaking** during maintenance or in **quality assurance** during root cause analysis in the event of unfulfilled quality requirements.

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Analyze intelligently and avoid machine downtime effectively

Which tool inserts are responsible for production downtimes? **Which spare part** needs to be replaced most often? **How many benders** should be kept in stock for a production run? These and other questions are **answered from the collected and documented data.** The tool construction department can draw on a lot of data to optimize the tool. This is a **significant contribution to increasing productivity.**

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From: 06.02.2021 To: 10.02.2023

Resource: W-00014

Action: exchanged, repaired

Spare part	Ø quantity	Absolute incidence
◢ Code A1	1.365.556,67	3
	Time	Amount	Quantity
	22.02.2021 12:41:00	1	3.686.221,00
	30.05.2021 18:56:00	1	155.585,00
	25.07.2021 14:05:00	1	254.864,00
▸ Code A2	1.935.225,67	3
▸ Code A3	1.187.450,34	3
▸ Code A4	892.576,67	3

Analyses of the correlation of order, reject and performed maintenance are an **important basis for decision-making.**

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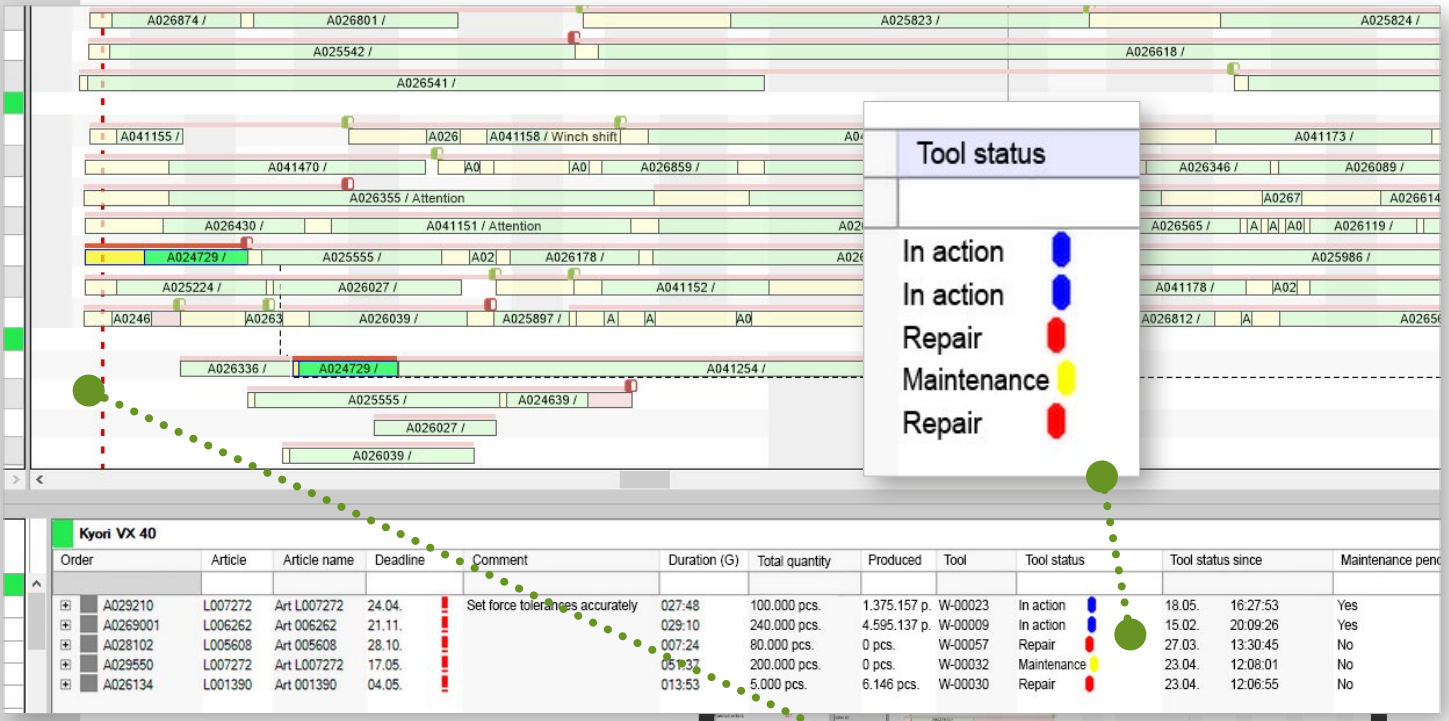
Produce and plan more efficiently with smart maintenance integration

The **seamless and digital documentation of maintenance and repairs** offers **immense advantages and simplifications,** not only for machines and tools. Especially in **interaction with production and planning,** smart networked maintenance unfolds its full potential.

The digital information exchange and access of the **MES Software EMC** enables a **predictive control of the individual production processes** via the most important departments. In ongoing production, for example, the tool shop can **be informed directly from the MES terminal at the machine** in the event of a repair. **Without detours,** this information also reaches **production planning.**



By **interconnecting** maintenance with the **EMC.DetailedPlanning module,** the planner knows the **current tool status** at all times. Upcoming maintenance and current repairs are **automatically integrated into the detailed planning** and thus ensure **realistic and smooth production processes.**

At the same time, the **tool making department** gets the information from the planning **when which tool is needed and which maintenance is due.**

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Always perfectly informed about which tool is needed when and where

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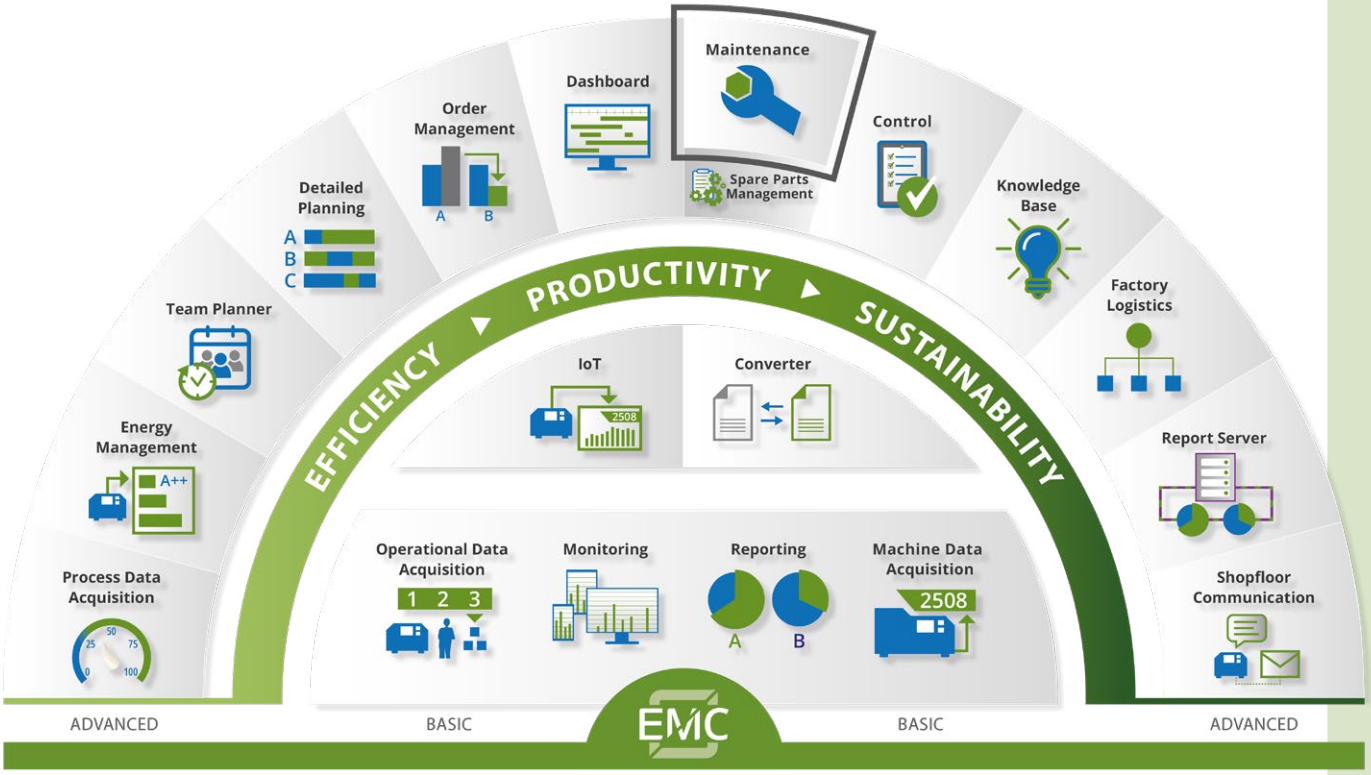
MES Software EMC

The solution for your smart networked manufacturing

Our user-friendly MES Software EMC controls all digital processes on the shopfloor **from planning, implementation, maintenance to traceability, shipping, production orders and a sustainable evaluation.**

It adapts completely to your needs, integrates into your existing IT landscape and brings together the data streams from ERP and the shopfloor.



The **modular architecture** of the MES Software EMC offers you the important **freedom and flexibility** in the implementation of your future-oriented production. Together with the **central MES database,** it is the basis for a **customer-oriented implementation - step-by-step or holistically - individual modules or as a complete system.**

No matter which solution you choose, with EMC you are always one step ahead and have the **best possible transparency** in production. All with the aim of **increasing your efficiency.**

iT Engineering Manufacturing Solutions GmbH is your provider of a well-developed Manufacturing Execution System in production management.

As an IT and MES expert in the metal forming industry and thanks to our large network of partners and memberships in associations (including VDFI and netzwerkdraht e.V.), as well as the best contacts with machine manufacturers, we know exactly how to obtain the important data and how to use it to digitalize processes and thus increase efficiency and productivity in manufacturing.

Our MES Software EMC acts as a central information hub and, by integrating the production data, ensures integration of production data for transparent production processes, flexibility and cost efficiency.

With a high level of technical and industry competence as well as many years of experience and expertise, we accompany you personally and step by step in transforming your production into a digital factory.

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