

Successful digitization project

Dana Brevini Motion Systems Pioneers Digitalized Shop Floors in Italy

Hydraulic components by Italian manufacturer Dana Brevini Motion Systems (Reggio Emilia site) are in high demand worldwide for their high quality, durability, and reliability. To increase productivity in its manufacturing, the company set up a comprehensive program to digitalize its shop floor. A core component in this: Tool Data Management by TDM Systems. This reduces manufacturing costs by 15 percent and makes Dana Brevini Motion Systems a pioneer in digitalized manufacturing in Italy, with highly efficient, transparent processes.

Excavators, earthmoving equipment, mining tools, forestry tractors and forklifts – different tools with one thing in common: They are often used in harsh environments and need to be highly robust and reliable to be able to do their job. This is the exact target market for Dana Brevini Motion Systems hydraulic components. Which means: Those components need to be tough and reliable, without any compromise. Milos Markovic, Manufacturing Engineering Manager at Dana Brevini Motion Systems, elaborates: “The customers of our products often perform critical tasks in harsh environments and with limited time available so simply they must not break down! Our hydraulic components are mostly high-pres-

sure components with up to 500 bars – so the quality must be right.”

With its more than 70 years of experience in manufacturing hydraulics systems and components, the Brevini Group ensures this level of quality through great engineering and manufacturing at its engineering and manufacturing operations in China, Germany, and Italy. To increase productivity, a project team at Dana Brevini Motion Systems and TDM Systems partner NC Program implemented a Tool Data Management solution by TDM Systems in 2022. A full success, according to Milos Markovic: “Clarity brings efficiency. Through this, we save about 15% in costs and are spearheading digitalization in our company group.”

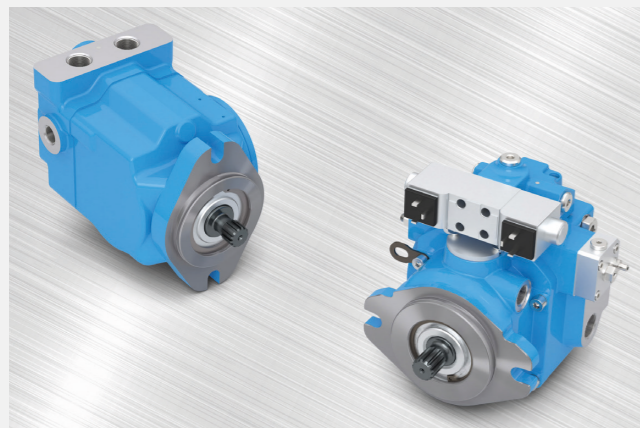
TDM in use

The importance of Tool Data Management for Dana Brevini Motion Systems' manufacturing processes

It is for a good reason that Tool Data Management was at the core of Dana Brevini Motion Systems' initiative to increase the quality of its manufacturing processes in terms of efficiency and productivity. "Most of our tool handling processes had been manual before. At best, we had some Excel sheets with manually entered data – not exactly the perfect basis for transparency and efficiency", Milos Markovic remembers.

With a modern, digital tool data management solution, Dana Brevini Motion Systems aimed at having vital information on tool identity, availability, utilization, allocation as well as relevant data such as process parameters all in one place. "We realized this would have a great impact on transparency and quality of our production system", says Milos Markovic. "The concrete goal was to create a situation where users can simply start a CNC program and be certain that it runs perfectly, without needing any further adjustments, thanks to 100% reliable planning data."

In addition, such a solution also opens up the opportunity to improve maintenance processes and tool lifecycle management. And tool data management is a crucial data foundation for other systems like CAD and CAM systems. This makes it an essential part of any digitalization project such as that at Dana Brevini Motion Systems. In addition to tool data management, the project team also searched for solutions for CAM programming and CNC simulations to create a comprehensive digitalization package aimed at bringing Dana Brevini Motion Systems' manufacturing to the cutting edge.



Medium duty pumps and motors for closed loop applications with an extensive range of options, both for mobile and industrial applications.



We were happy that Dana Brevini Motion Systems chose us and TDM Systems for this project. But when I learned that they wanted to introduce TDM, HyperMILL, and VERICUT all at once, I realized this would be quite a challenge.

Giuseppe Ferrari
Engineering Manager Software Solution at NC Program

TDM Systems impresses with its functionality, compatibility, and service

With the initial help of three working students and collaboration with a local University, the team started benchmarking solutions from renowned providers. After thorough testing regarding features, functionality, and compatibility, the three "winners" were clear at the start of 2022: TDM Systems for tool data management, HyperMILL for CAM programming and VERICUT for CNC simulations.

"Tool data management was at the core of our initiative, to bring a new level of transparency and efficiency into our manufacturing processes", explains Milos Markovic. "And TDM Systems convinced, or rather impressed us. Not only through its functionality, which is undoubtedly top-of-the-line, but also because of its compatibility and interface capabilities to other systems such as our CAM system."

Italian-based TDM Systems partner NC Program was tasked to implement the tool data management solution. Giuseppe Ferrari, Engineering Manager Software Solution at NC Program, remembers: "We were happy that Dana Brevini Motion Systems chose us and TDM Systems for this project. But when I learned that they wanted to introduce TDM, HyperMILL, and VERICUT all at once, I realized this would be quite a challenge."



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Milos Markovic (right)
Manufacturing Engineering Manager at Dana Brevini Motion Systems

Carmine Squitieri (Manufacturing Engineer CNC Specialist at Dana Brevini Motion Systems, left)

TDM in use

A successful team effort results in a lasting relationship of trust

But the team of Dana Brevini Motion Systems employees and working students as well as Giuseppe and his colleagues from NC Program set their minds to it – and the cooperation went superbly: “We were able to transfer our knowledge at NC Program to their very capable university student tasked with the TDM aspect of the project, Carmine Squitieri, and are happy with how things went”, says Giuseppe Ferrari. Milos Markovic adds: “TDM Systems and their partner NC Program provided excellent service to us. From the start, we felt like they gave their all to find the best solution for us. And during the implementation process, they were at our side the whole time with excellent support and the will to go the extra mile for us. This resulted in a relationship of trust that continues to this day.” In addition to the trust in the solution and service provider, Dana Brevini Motion Systems also now has the desired trust in its planning data: “As a result of this project, we reached our goal of having clean processes that are not dependent on specific users”, says Milos Markovic. “In my eyes, this is an absolute must nowadays, especially in an internationally acting company with quality and reliability demands as high as ours.”

A new reference in the Dana Incorporated group of companies

Now that the implementation phase of the project has progressed greatly, the consequences have become quite noticeable: “We have quantifiable benefits such as 15% less manufacturing costs through process optimizations”, says Milos Markovic. “But maybe even more importantly, we have a profound and ever-growing clarity about our tool and process landscape that acts as a foundation for other software tools and systems like CAM. We are super happy with the cooperation with TDM Systems and NC Program as well as the implemented solution.” This level of shop floor digitalization has made Dana Brevini Motion Systems a pioneer not only among Italian manufacturers, but also in the international Dana Incorporated group.



Clarity brings efficiency. Through this, we save about 15% in costs and are spearheading digitalization in our company group.

Milos Markovic
Manufacturing Engineering Manager
at Dana Brevini Motion Systems

rated group. Milos Markovic proudly explains: “Our project is seen as a best practice in our company group, and we already had colleagues in Germany asking us about information on our implementation of TDM. Maybe we will become the blueprint for similar projects at our international production sites.” In any case, with TDM Systems, Dana Brevini Motion Systems has laid the groundwork for the digital future – and Carmine Squitieri, the university student who was busy preparing his thesis focused on Digital Production, is now a valuable team member. Dana Brevini Motion Systems offered him a job in this field to gain experience and to transfer it to other workers from the team. His knowledge is too valuable to let him go after all.



The TDM project team at Dana Brevini Motion Systems is looking forward to greater transparency and reliable planning data.

Everything at a glance

Clarity brings efficiency - the most important key factors of Dana's success

TDM in use at Dana Brevini Motion Systems



Manufacturer of hydraulic components

- Hydraulic-electronic components
- Complete mechanical transmission range



Company

- Hydraulic Division of Dana Off-Highway Motion and Drive Technologies
- Site Reggio Emilia, Italy



TDM in use at Dana Brevini Motion Systems

- TDM Base Module
- TDM Document Management
- TDM Multi Plant Management
- TDM Integrated NC Program Manager
- Interfaces to HyperMill and VERICUT

Targets

- Digitalize processes on the shopfloor
- 100% reliable planning data
- Starting NC programs on the machine that do not need any further adjustments
- Increase of quality, efficiency and productivity

Process Innovations

- Clean processes independent from specific users
- Process optimizations increases quality and productivity
- Reliable planning processes due to interfaces to Hyper-MILL and VERICUT
- Profound and ever-growing clarity about our tool and process landscape

BENEFITS



Manufacturing costs reduced by 15%



Excellent service and project management from TDM Partner NC Program



Increased quality and productivity

tdmsystems

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