



OPTIMIZATION OF THE OVERALL PROCESS

KTM AG - AT

KTM AG, founded in 1992 and controlled by PIERER Mobility AG, is Europe's leading manufacturer of motorcycles and produces a full range of premium brands including KTM, GASGAS, and Husqvarna Motorcycles. With its innovative strength, PIERER Mobility AG is a technology leader in the field of two-wheeled electric mobility through its motorcycle brands. KTM Components GmbH is a wholly owned subsidiary of KTM AG and is responsible for the production of major components including the frame, chassis and exhaust systems for the KTM, Husqvarna and GASGAS brands.

In the production of the “performance-determining” components of its motorcycles, KTM strives to achieve maximum vertical integration, namely to keep the manufacturing process in-house as much as possible. Since 2019, an LT7 Lasertube system from BLM GROUP has taken a central role in the production of frames and exhaust systems.

“Currently, we produce about 1.2 million finished components per year, including vehicle chassis and exhaust systems. On peak days, we can assemble up to 6,500 assemblies. At our main plant in nearby Mattighofen, about 220,000 motorcycles of the KTM, Husqvarna and GASGAS brands were produced in 2022. We manufacture performance-relevant components such as frames, chassis and exhaust systems ourselves,”

says Fabian Steinbacher, managing director of KTM Components GmbH based in Munderfing in Upper Austria. “Our focus is entirely on the performance and quality of our motorcycles. We do not compromise just to optimize component production costs,” says the industrial engineer.

However, KTM is always open to new technologies that can make the production process more efficient, increase flexibility and productivity, and improve component quality. Especially if these technologies offer additional possibilities for optimizing the design of “Powered Two Wheelers.”

The use of BLM GROUP’s LT7 system for tube cutting fits perfectly into this philosophy. The installation of this machine was one of Steinbacher’s first projects when he joined KTM Components in 2017. Before becoming plant manager in 2019 and later General Manager of the company, in

2022. Currently, KTM Components employs about 650 people.

Benefits along the entire process chain

KTM employees have always been motorcycle enthusiasts, and superior quality is an obvious and inspiring value for them. “In a way, it’s part of our DNA,” says Steinbacher. In the racing world, every tenth of a second counts, and compromises on quality are unthinkable. “We exploit the technical potential to the limit and select the solutions that give us advantages along the entire process chain.” KTM Components’ goal is overall process optimization, rather than optimizing production costs per individual product.

It all starts with product development. Thanks to the LT7, this process has been greatly accelerated. “We can react more quickly and flexibly to market trends by experimenting with new solutions,” says Steinbacher, highlighting the benefits. This sometimes leads to surprising results. Recently, KTM launched a new race bike in a limited edition that sold out within minutes.

During the pandemic, cycling and motorcycling were among the recreational activities least restricted by worldwide lockdowns. Demand for KTM’s products increased greatly, and with its adaptability and production capacity, the company was able to meet the challenges. “We changed part of our product range from one day to the next to meet the needs of different markets,” recalls Steinbacher, who credits this strategy with increasing sales by about 20 percent in 2021 over the previous year in the corporate group (PIERER Mobility AG). In particular, KTM has gained significant market share in the United States, thanks to the key role played by the increased production capacity achieved through laser tube cutting.



With the LT7, KTM Components processes up to 20 steel and stainless steel profiles with different types of cross sections, making about 80 parts in batches of 150 to 300 parts each. In 2022, a total of about 1 million parts were produced with the tube laser. “As a first stage, with the LT7, we are cutting all the components that are to be bent in-house. In the future, we want to go so far as to cut all our tubes internally, including hydroformed parts. A second tube laser will be put into operation for this purpose. With the two machines, about 4 million parts per year will be produced,” says Steinbacher, looking to the future.

Thanks to the LT7, setup times are virtually zero, and production changes are extremely fast. This increases the flexibility of the company, which produces its components on demand without

stockpiling them. This Just-in-Time production approach takes full advantage of production capacity.

ArTube CAD/CAM software is an essential element in ensuring high productivity in laser tube cutting because of its ease of use and comfort. After importing STEP files from the design, the software automatically generates production programs. If needed, manual adjustments can be made, and the 3D simulation provides a realistic graphical representation of the production process. Additionally, production orders stored in the software can be started with a single click.

Maximum precision in assembly
With active tools, BLM GROUP offers its customers several options to automatically optimize the laser cutting process. The intelligence of these solutions supports both the production of the highest part quality and increased productivity. Moreover, because manual operator intervention is minimized, they also eliminate human error.

For example, at KTM Components, the LT7 is equipped with the Active Scan optical measuring system to ensure maximum accuracy. This system uses laser sensors to detect centering errors (Y and Z axes) and twisting of the tubes to be machined in real time, transmitting the detected values to machine programs. The programs immediately correct the position based on the actual geometry of the tube, without slowing down the laser cutting process. As a result, the parts produced reliably match the required specifications, enabling the company to achieve welds with very tight tolerances.

During our production tour, Steinbacher emphasized the importance of this crucial aspect. He led us through the workstations where frames are assembled in several stages, with the main tubes cut by the powerful LT7. “Our frames are composed of an intricate weave of up to 60 tubes. Along the entire production chain, tolerances must be strictly controlled so that the welds meet our very high quality standards. Here, even the slightest error could accumulate,” he explains. Laser tube cutting, along with bending and welding, constitutes one of the three critical processes at KTM Components during frame assembly.

In addition to the Active Scan, the company makes use of three other Active Tools. Active Tilt which optimizes the rapid orientation movements of the 3D laser cutting head when cutting and marking tubes, Active Speed that adapts the cutting parameters according to the speed of movement, ensuring optimal cuts in any condition and with any material being processed and Active Piercing which enables quick and reliable piercing without leaving any traces or cutting residue inside the tube.

For KTM Components, the LT7’s suction probe was also extremely important. This “internal spoon” reliably sucks up smoke and particles generated during cutting, along with any cutting residue in the pipes. For the stainless steel pipes in exhaust systems, this feature saves the motorcycle manufacturer the need to clean the inside of the pipes.

Usually, the cut fragments are sucked forward through the suction probe. However, to meet the

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PARTS PRODUCED WITH LT7

needs of KTM Components, which wanted to pick up its larger stainless steel components via a robot, the BLM GROUP promptly developed a solution for discharging the fragments outward. To this end, they also made modifications to the unloading table at the back. “BLM GROUP provided us with extremely dedicated support from the very beginning. Because of their flexibility and willingness to find the best solution in every aspect, it was obvious that we would choose to work with them,” says Steinbacher.

“In selecting the most suitable tube laser for our needs, the LT7 seemed to us to be the most advanced machine. It keeps us up to date technologically. In addition, the local service provided by BLM GROUP gives us the speed and reliability we need in our process,” says the general manager who goes on to share future plans. “In the next step, we plan to install a tube center with an automatic tube storage system, where the installed machines will be loaded and unloaded automatically.”

