

High-precision grinding is an art

Starting a business always involves a certain amount of risk taking. "It's like racing a motorcycle. If you don't want to risk anything, you might give away your chance to win," says Randy Gevers on the subject, the tall company boss of GRT-Tech with the steel-blue eyes and winning smile. For him, it goes without saying that you also need a lot of stamina, technical savvy and passion.

The passionate grinder Randy Gevers knows what he is talking about. Before founding his company GRT-Tech, he was successful in motorcycle racing for years.

Fittingly, the first customers came from the KTM world, as the two Gevers' had built up a large network through racing. Their former employers soon placed contract manufacturing orders as well.

Today, customers from the aerospace, medical technology, tool and die and packaging industries trust the Gevers', as do the navy, luxury yacht construction and many more. Among the demanding customers who value GRT-Tech's work are suppliers to the semiconductor industry. "We could theoretically make a living on that

alone," Randy Gevers says. "A company shouldn't get into dependencies. It's ultimately the variety of parts that makes the job appealing."

Materials at GRT-Tech range from steel, various stainless steels, brass and copper to ceramics and plastics. Small batches of up to 50 pieces are usual quantities, as well as individual parts and prototypes. Antoon Gevers often manufactures special parts for motorcycles and classic cars that customers entrust to him based on his experience.

The realisation that for the machining of complex workpieces, e.g. for tool and mould making or medical technology, one quickly reaches the limits with a conventional grinding machine came to Randy Gevers after a very short time. For this reason, the move to the current location in 2018 was followed by the purchase of a used high-performance Kellenberger CNC universal cylindrical grinding machine KEL-VARIA. "We had a lot of requests for grinding complex workpieces right from the start," says Randy Gevers. "We could only accept about 10 percent of them. I couldn't and wouldn't continue like that." The decision in favour of a Kellenberger grinding machine was not a difficult one. Antoon and Randy Gevers knew and appreciated these machines from their former employment.

The KEL-VARIA is a predecessor model of



High quality is their trademark.

However, his success story does not begin with him, but with his father Antoon Gevers, who not only instilled in his son a passion for engines and technology, but also for metalworking and, in particular, for grinding. Antoon Gevers got the last μm out of every machine and thus helped the companies he worked for during his 50 years of working life to be successful in this realm. The development of moulds for CD presses in 1980 finally cemented Antoon Gevers' reputation in the grinding world.

After years of working as grinders in the same company, the two Gevers' took the plunge into self-employment in 2016, when Antoon Gevers took early retirement. The first machine Randy Gevers purchased was a conventional grinding machine, with others following in short succession.



René van der Peet (BMT) has configured the KELLENBERGER 100 together with Randy Gevers.

today's premium KELLENBERGER 1000 series and, like the latter, stands for the highest machining and surface quality. Its high static and dynamic rigidity and stability are decisive factors for high precision and great productivity. Hydrostatic guides in all main axes ensure the highest form accuracies for grinding tasks with interpolating axes. The B-axis has a direct drive. The turret grinding head thus swivels about three times faster and positions with an accuracy of less than one angular second. Particularly when machining requires the swiveling in of different grinding wheels, this reduces non-productive times and thus increases productivity.

As a result of the good experience, another Kellenberger grinding machine quickly found its way to Heeswijk-Dinther, a KELLENBERGER 100 universal internal and external cylindrical grinding machine. René van der Peet from the sales company BMT Bridgeport Machine Tools, which has represented the Kellenberger, Hardinge and Bridgeport brands, all part of the US Hardinge Group in the Netherlands for years, acted as an advisor. His experience was of great benefit to Randy Gevers in the machine selection process.

The KELLENBERGER 100 is available with centre widths of 1,000/600 mm and centre height of 200 mm and is designed for workpiece weights of up to 150 kg. The high drive power of the grinding wheel ensures increased productivity, while the newly developed Z guide ensures great profile accuracy. The C-axis with direct drive brings higher accuracy for non-circular grinding. Technical highlights of the machine include an innovative compact grinding head, 10 grinding head variants, 11.5 kW drive power, 500 mm wheel, up to 63 m/s, HF spindles for



Non-circular grinding of Capto holders.

internal grinding incl. diagonal and tandem arrangement, a collision-free universal head with three tool and one measuring position and a new measuring probe arrangement without swivel mechanism for increased measuring accuracy.

Randy Gevers chose the centre width 1,000 mm to be more flexible with part size and a grinding head variant with two external grinding spindles, an internal grinding spindle and a tactile measuring head. The high-frequency spindle, with a speed range of 6,000 to 40,000 rpm, has an internal coolant supply. The machine is equipped with a FANUC 31i CNC control, the matching software is provided by Kellenberger. "I am fascinated by the machine's great reliable accuracy. But I consider my experience of many years to be the factor, that ultimately makes the difference for the customer," says Randy Gevers. "After all, a machine can't provide

the advice on how best to manufacture a workpiece."

Challenging workpieces are part of the daily business, such as currently the machining of a component with a material combination of copper and cast iron. The required roughness is $< 0.15 \mu\text{m}$. "We could also achieve $0.05 \mu\text{m}$, but that is not necessary in this application," explains Randy Gevers. But: "Cast iron is a very porous, brittle material, the grindstone clogs very quickly and must be continuously dressed, but again not too often. It is essentially a matter of finding the right balance. The more experience and intuition a grinder possesses, the more precise such a workpiece will be in the



The variety of workpieces for a wide range of industries makes the work exciting.



end. Which, incidentally, is very expensive due to the material combination and the upstream machining operations such as turning, milling and eroding. So, the grinding operation has to be right the first time."

"The more complex the workpiece, the higher the precision requirements, the greater the motivation for me to bring the workpiece to perfection," concludes Randy Gevers. He just loves a challenge. Only no longer on the race track, but on his machines. For the benefit of his customers.

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Internal grinding of a workpiece with problematic material combination.



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