

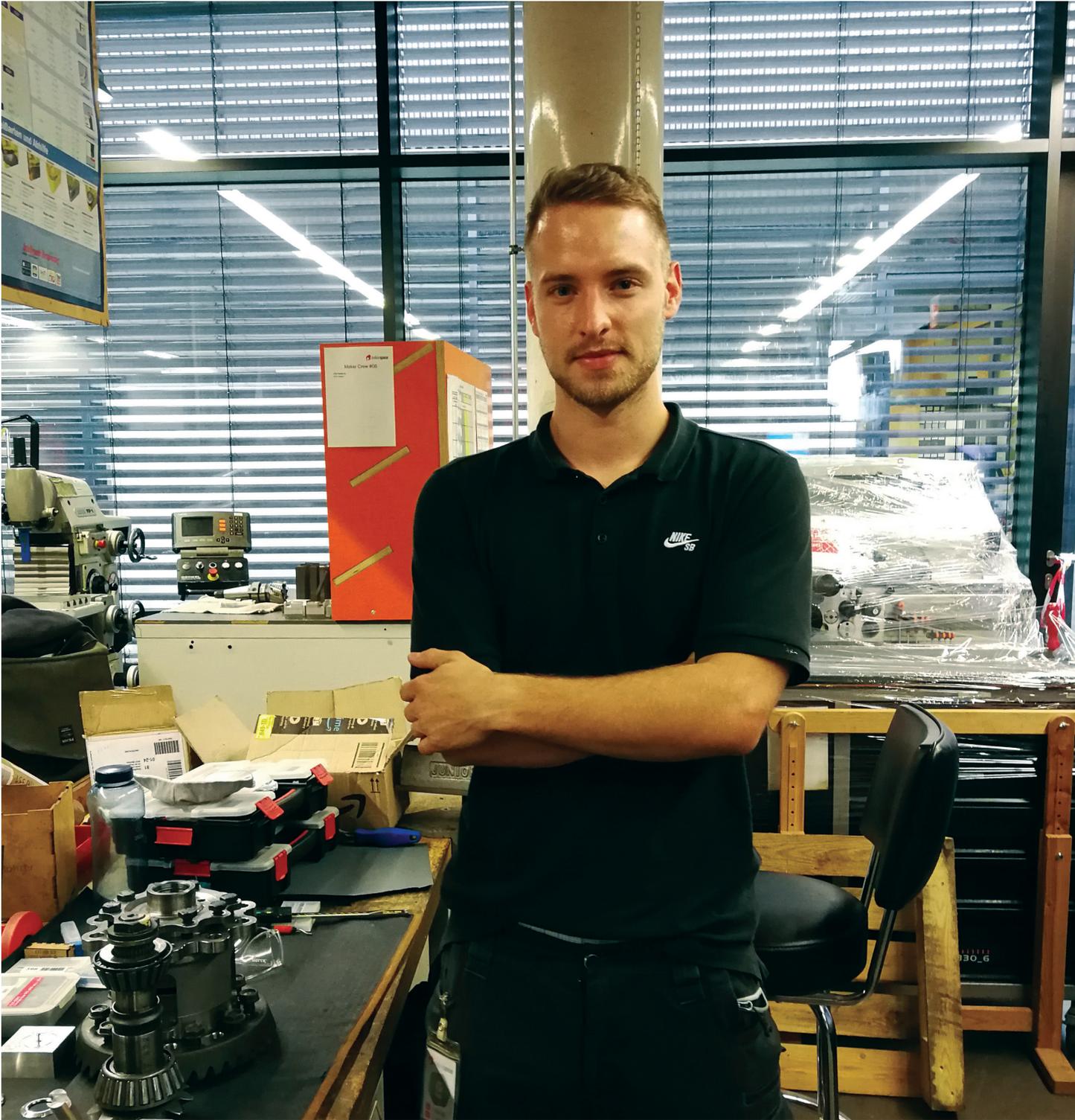
— **Student, start-up founder and motorsports enthusiast:** Jonas Lang explains how adhesives contribute to making his racing parts safer and lighter

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An idea that sparks creativity. Experimenting. Assembling. The frustration of failure. Finding new ways and trying again. The feeling of euphoria when your vision has finally come into fruition as a functioning prototype. Jonas Lang is familiar with every step of this process.

He is a student – and has founded a start-up. At the German MakerSpace prototype workshop, at the Technical University of Munich, he refines new designs and products, finds inspiration, and exchanges experiences with other members of the workshop.



Jonas Lang

We met him there to talk about his start-up Saltgrain Racing and to find out how adhesives have helped him to implement changes in racing technology as well as developing his first watches.



+ Henkel Loctite 270 50ml Bottle



+ Henkel Loctite 648 50ml Bottle



+ Henkel Loctite SI 5970 Flange Sealant 300ml EMEA

Jonas, could you start by telling us a little bit about yourself? What do you do and how did you come up with the ideas for your products?

Jonas Lang: I have been studying electrical engineering at the Technical University of Munich since March of 2020. Before that, I worked in the department of body material development for a car manufacturer. I have also been a motorsports enthusiast for a long time. Sometimes I participate in racing events as a co-driver. What I find even more interesting, however, is what happens inside a sports car during a race. I started tinkering with gearboxes, trying to optimize components so that they can withstand high pressures while reducing their weight at the same time. At first, I just redesigned and adapted the racing cars of friends and acquaintances. But I enjoyed that so much that I recently registered a business to be able to turn this hobby into a career. Together, with a former colleague of mine, I also work on developing watches.

You design and implement many prototypes here at the MakerSpace prototype workshop. How did you find out about the MakerSpace?

Jonas Lang: I first came to MakerSpace when I was still working at my former job. That was the year before last. I came in to use the water jet cutter for cutting parts. That's how I discovered the prototype workshop. Since then, I've been coming here as often as possible – to test new ideas and refine my prototypes. The MakerSpace is the ideal

place for this purpose: I have any instrument and tool that I would need at my disposal, I can participate in training courses on how to use the various devices available here and I can meet lots of like-minded people with whom I can exchange experiences and tips. It's the ideal place for trial and error. You go through all kinds of feelings here. It can be frustrating when things go wrong or when you've destroyed something yourself, which then may even result in a setback for your entire project. However, when you do finally succeed and when you see that you've made it and your prototype works, all the setbacks are forgotten.

What are your current projects?

Jonas Lang: Last year, I opened an online shop where I sell motorsports parts that I've developed myself. People can go to the shop to buy hydraulic hand brakes, for example. I continuously refine these parts with the aim of making them as lightweight as possible in order to further optimize the speed of the cars. I use adhesives in various places such as retaining compounds for securing ball bearings. Adhesives are the best choice for joining parts in many applications, for example when the seat of a bearing is outside the tolerance range. Another example would be securing angular ball bearings that, due to their construction, cannot be press-fitted into place without changing their bias and that cannot be clamped – for example when making shift paths shorter. I also use liquid threadlockers for securing plastic threaded joints of the ring gear to the differential gear or for securing the cover to the multiple-disc LSD.



+ Henkel Loctite AA 3491 Light Cure Adhesive 25ml EMEA



How did you come up with the idea of using adhesives for your applications?

Jonas Lang: My first contact to Henkel and Loctite goes back to my time at Formula Student. Henkel had a booth at a race where I was able to take a look at Henkel's range of adhesives and sealants. I have to admit that I was sceptical at first because I didn't believe that adhesive connections would be able to withstand high pressure. A friend of mine eventually convinced me to give it a try and it turned out to be the best solution. We used mainly Loctite retaining compounds and threadlockers in the Formula Student racing cars. I still use these adhesives for the products I develop today.

You said that you use adhesives in your products. How did adhesives help you to overcome the challenges that you were faced with?

Jonas Lang: Safety is the most important challenge in connection with the gearbox: the screws must never come loose. That's why I use high-strength threadlockers. The ball bearings in the gearbox have to be secured in a very tight space. We also have to join different materials in the gearbox – aluminium on the outside, steel on the inside. The joint needs to be reliable, but it's not possible to press-fit the ball bearing, as it's an angular ball bearing. As the space available is limited, it was not possible to use other joining

techniques. The only useful solution for securing the components to one another was the use of adhesives.

Recently, I also started developing watches together with a friend of mine. Using adhesives for securing the glass to the bezel and the bottom of the case has allowed us to meet our design requirements. We use Loctite's UV adhesive since it's resistant to yellowing caused by sunlight.

It sounds as if your work involves interesting challenges and exciting solutions. What are your future plans?

Jonas Lang: Well, I have many plans. I want to further develop our watch production and expand my product portfolio in the racing field. I also want to expand my online shop for motorsports parts and improve my online presence. Another top priority on my to-do list is completing my studies. And then I just want to continue doing what I'm doing now: trying new things, failing, learning my lessons and getting better in what I do.

We want to thank Jonas Lang for sharing his experience and for the great conversation. For more information on Saltgrain Racing and LOCTITE products used by Jonas Lang, you can visit the following websites www.saltgrainracing.com and www.henkel-adhesives.com