

# AMZ News

SPRING 2025



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## Manufacturing

As the previous year came to a close, we were able to finish the design phase of *aurora* and transitioned into the manufacturing phase. Thanks to the great support from our partners, numerous parts have already been produced, which are now ready for their assembly on the car.

Our parts are manufactured using various different methods like turning, milling, water jetting, as well as different 3D printing technologies. In addition we have manufactured a lot of diverse carbon fiber parts ourselves in our workshop, mainly our fully in-house produced monocoque. In this newsletter we will take you through the creation of our new car *aurora*.

## Aerodynamics

This year a very significant rule changed: The "PGE" (powered ground effect), which produced downforce through actively sucking air from underneath the car, is not

allowed to be used anymore. Our goal is however to compensate for this loss in downforce through a more advanced aerodynamics kit. Therefore, we have self-designed a completely new front wing with the help of extensive fluid dynamics simulations, which we will validate in the wind tunnel.

Our goal is not only to generate as much downforce as we can but also create a good aerodynamic balance. This means we want an equal distribution of downforce over the front and rear axle. The design of the aerodynamic kit is nearly finished and we have already begun the production of the first parts.

## Chassis

The monocoque is always an incredibly important milestone and a highlight for the whole team. It is the birth of our car (even if it takes its first breath later). The production is complex and time-consuming. First we laminate the negative tooling with special carbon onto our positive mould made from milled

epoxy. Afterwards we can laminate the outer skin of our monocoque onto the tooling. In the next step we fit the aluminium honeycomb core and the carbon inserts. The core, as well as the inserts, act as a reinforcement for the monocoque, strategically placed and dimensioned for the expected load cases. The final step is the laminating of the inner skin and the following curing process in the autoclave after which the monocoque is ready for post processing and assembly of the various parts. All members of the team were involved in the whole monocoque manufacturing process, regardless of their actual own expertises.

This year we achieved the earliest demolishing of the monocoque in the history of our association. On the 8th of March at midday it was removed from the tooling and with that a new team record was set up, beating the standing record from *castor* (2023) by one hour.

## Electrical Components

Our electrical engineers set themselves the goal of realising their components in a lightweight but still very reliable manner. An example therefore is the sensor implementation of *aurora* which is more than 30% lighter compared to last generation's. Despite this weight loss we have introduced new and more accurate sensing methods. The valuable data and insights gained greatly influence the vehicle dynamics control of *aurora*.

A new and improved dashboard concept will further improve and simplify the control of the vehicle functions for the driver. This development will further streamline the testing of the vehicle and allow the engineers to focus on the most important parts of the car.

Through early, detailed tests and commissioning out of the car we strive to achieve a seamless integration between electrical and mechanical interfaces. A smooth interdisciplinary realisation plays an important role in the success during the testing phase and the coming competitions.

We are looking forward to see the whole car assembled!





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### Prestigious Visitor

Shortly before we started assembling of the vehicle, we had a prestigious visitor: Sébastien Buemi dropped by our workshop in Dübendorf. The former Formula 1 driver and world champion in Formula E & the WEC took the time to visit us - and even got behind the wheel of our most successful racing car, *dufour* (2024). Seeing a Swiss racing legend put our technology to the test was a truly unique experience for the entire AMZ Racing team. His feedback out of a drivers view is also very valuable for the testing and event season ahead with *aurona*.

### Eventseason

As every year we took part in the rules quizzes at the end of January to qualify for the different competitions during the sum-

mer. Thanks to our rigorous preparation which started back in September and the effort from everyone in the team we were able to qualify for every event that we wanted to take part in. We are happy to announce that this year we will compete with *aurona* against the best formula student teams from Europe and the whole world in Switzerland, Austria, the Czech Republic and Germany.

### In the Top 3 of the World Ranking!

In mid-January, last year's results were added to the Formula Student world ranking. Our outstanding performance was rewarded with the third place! This position reflects our tireless efforts, our perseverance and, of course, our teamwork throughout the season.

This achievement not only celebrates our current success, but also fuels our ambition to reach even greater heights in the coming season. We are more motivated than ever to push boundaries, innovate and compete at the highest level.

### Thank you and see you soon!

We would like to thank you once again for your support of the AMZ. Without you we wouldn't be able to build a race car, and certainly not be one of the top three teams in the world. Thank you very much! We look forward to meeting you in person at the rollout of *aurona*.



11.-16. July 2025  
Geschinen, Switzerland

20.-24. July 2025  
Spielberg, Austria

4.-9. August 2025  
Most, Czech Republic

18.-24. August 2025  
Hockenheim, Germany



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