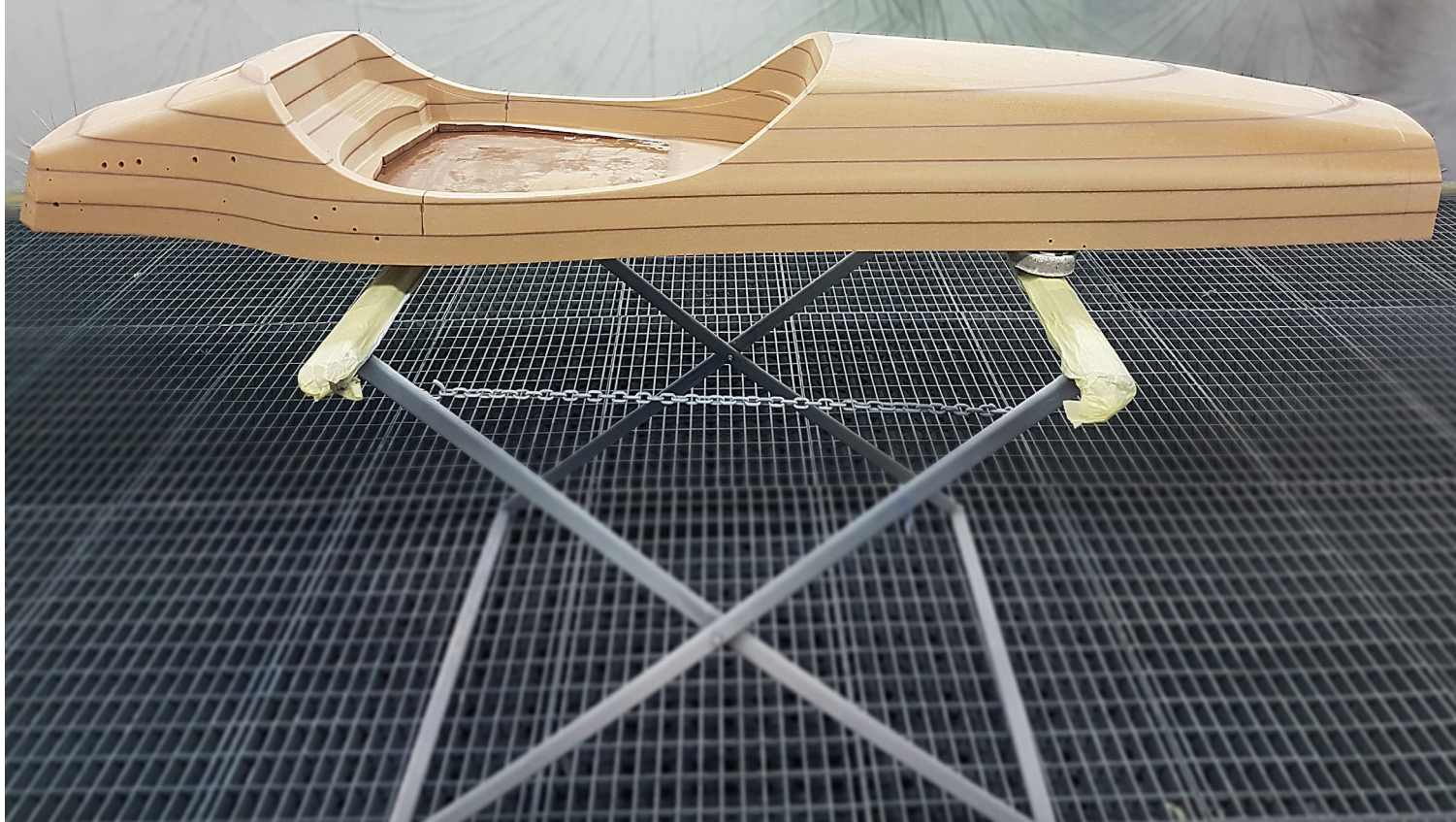




AMZ News

MANUFACTURING - *eiger* evolves



Main Sponsors



Premium Sponsors



Sponsors





The negative of the chassis with its bolts...



....during vacuum...



...up to the finished chassis

©AMZ

Design

«eiger evolves» is the motto of the second Newsletter of the 2018 season. «eiger evolves» also means many milestones on the long road to the summit are already completed. With the design of the race car finished, several months of planning, drawing and optimizing every detail using CAD (Computer Aided Design) have come to an end. All parts of the car, down to the smallest washers, are included in the computer model to allow for detailed planning of the assembly.

Chassis Manufacturing

For the chassis, the single largest piece of eiger, the exact position of all bolts plays a significant role. It is carefully hand crafted by numerous team members over a period of several weeks. In

a first step, the chassis' shape is milled into wood, which is then lacquered and polished to form the positive mold. From the positive mold, a negative mold is made.

It is the negative mold into which the chassis itself is laminated using CFRP, Carbon Fiber Reinforced Plastics, in the form of a so-called «sandwich» structure: First, several layers of carbon are laid in, then an aluminium honeycomb that increases the stiffness of the composite structure, followed more layers of carbon. The chassis is then baked under high pressure, hardening the epoxy resin to resist the high loads applied in a racing environment.

Jon Zehnder, responsible for the chassis design, explains: «To see how the centerpiece of the car slowly takes shape is fascinating, especially when

oneself designed the part and knows every millimeter of the CAD model.»

Part Manufacturing

Apart the CFRP-parts, which are manufactured exclusively by team members, our partners are currently working in parallel to produce pieces for our car.

Their high quality and versatile skills allow the students to optimize our designs to the limits of what is physically possible. This way, parts can be manufactured using, but not limited to, five-axis mills, lathes, wire cutters, waterjet cutters or additive fabricators («3D Printers»).



AMZ is presenting *pilatus* at the GIMS ©AGVS

The list of materials used ranges from PEEK and PA plastics for the lesser stressed parts (such as the cooling system), via carbon, kevlar and silver coated aluminum screws for the accumulator to extremely strong 18CrNiMO7-6 steel for the gearbox. Nevertheless, most pieces are produced from light yet still robust aluminum AW EN 7075-T6, so that eiger is able to match our very ambitious weight expectations.

Assembly Phase

As soon as the chassis is demoulded, the next chapter towards the completion of *eiger* will begin: the assembly phase. Working around the clock, an uncountable amount of parts will be mounted on the chassis throughout a period of 3 weeks. At this point, Thorough planning is crucial here. Many pieces can only be assembled to the

car in a specific order. However, a multitude of the over 150 different steps of this process should be performed in parallel, such that the time of assembly is minimized.

In order to reduce the time required for commissioning, many critical systems will be tested outside of the car parallel to the assembly, like our in-house developed motors. This will make *eiger* not only a fast car, but also a reliable one.

AMZ at Geneva International Motor Show

Just like last year, AMZ is present at the motor show in Geneva taking place between the 8th and the 18th of March. Over 700 000 visitors will have the opportunity to be amazed by *pilatus*, last season's extremely successful race car,

and to learn more about its many innovations, such as the hydraulic decoupled suspension.

We would be more than pleased to welcome you at space 2141, as we have already done for the Swiss federal counselor Guy Parmelin, following counselor Schneider-Ammann, who took the opportunity to get to know AMZ and its World Record holder car *grimsel* already last year.

Formel E / Julius Bär:

Like many of you have heard, Formula E comes to Zurich -also thanks to the tireless commitment of Julius Bär, one of our Premium Sponsors. In preparation for that event, AMZ was already interviewed and is looking forward to welcome the Formula E, the big sister competition of the Formula Student Electric in Zurich.

ComputerControls new Main Sponsor

It gives us special joy that one of our Premium Sponsors decided to increase their support of our project to the point of being promoted to Main Sponsor.

For more than three years, ComputerControls has supported us not only financially, but also by providing high quality measurement instruments, such as an Oscilloscope from Keysight.

This way ComputerControls substitutes one of our longstanding partners: Swiss International Airlines, who have supported us since the very beginning of our project 12 years ago. Swiss will not extend their sponsorship for the project this year. We would like to thank Swiss for all their support of and confidence in our project through these 12 years.

Main Sponsors

		<p>Wir bringen Energie</p>	
<p>Together ahead.</p>			

Premium Sponsors

<p>The Original Push-Pull Connector</p>	<p>SCHMIDHAUSER</p>		<p>VACUUMSCHMELZE</p>

Sponsors

			<p>METALLTECHNIK</p>	<p>Dynamic Test Center</p>			<p>precision. analysis. innovation.</p>
<p>libra & elektronik</p>		<p>Innovative PCB Solutions</p>	<p>wasserstrahl-schneiden</p>	<p>Energy solutions partner</p>			<p>Ingenium for life.</p>

Favourers

- | | | | | | | | |
|--|---|--|--|--|---|--|--|
| 3D-Prototyp
BERNINA
eflight GmbH
hasler ag
maxon motor
OKKY
RolTec
Scientific IT Services | 3M Schweiz
Bomatec
Enclostra GmbH
Henkel
MEGA AG
Penmat
Rifenacht AG
streamwise GmbH | apihacam swiss GmbH
Boassard
Evonik
HS Composite GmbH
Melasta
Pilatus Flugzeugwerke AG
SAE Switzerland
Sturmberg GmbH | ANB Bourmi AG
CC Electronics
Feintool Technologies AG
Iigus
MessX AG
polyshape
SATW
Suter-Kunststoffe | Argotec
Creabis
Flugzeug-Union Süd
Influx Technology
Moderbacher AH
Prometall
Schaffner GmbH
SWISS KRONO AG | Bach Heiden
CSM GmbH
Garage Stucki
Inventus Engineering
Motochic
Rakame-Technik AG
Schiller AG
Utzinger Mechanic | Bender GmbH & Co. KG
Domsel AG
General Dynamics
Jörg Hartmeier AG
norelem
Rigi-Kühler AG
Schlatter Industries
Venturi | Berner Fachhochschule
ebm-papst
HABA
Kyburz
OC Oberikon
Rufam GmbH
Schreinerer Schenk
Winkelhausen AG |
|--|---|--|--|--|---|--|--|