

15 Mechanical Workshop

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Infrastructure

A new high performance precision band saw was purchased for the raw material storage to guarantee an excellent cutting quality for materials with up to 265 mm in diameter (Fig. 15.1).

The big lathe was relocated to the student workshop in order to create more space in the main workshop (Fig. 15.2). This space was needed for the installation of the new high-performance, milling - turning and machining centre in the physics workshop in December. This new machine, allows now to carry out turning and milling operations of highly complex components on one

single machine (Fig. 15.3). To promote the exchange with many of our customers from various institutes of UZH, ETH Zurich, universities of applied sciences, as well as the customers of the material storage, our annual aperitif was organized in autumn.

68



FIG. 15.1 – High performance precision band saw.



FIG. 15.2 – Relocation of the big lathe to the student workshop.



FIG. 15.3 – New high-performance, milling - turning and machining centre. The top figure shows the transport through the corridor.

Personnel

Brandon Markwalder and Pascal Weyeneth completed their practical apprenticeship examination with very good results (see Fig. 15.4 and 15.5) and our second year apprentice Gian Knüsel has passed the part examination at the end of his second year with great success. Due to the large volume of orders Brandon Markwalder worked in our workshop until the end of October after his apprenticeship.

First of August 2018 Noah Regensburger started the four-year apprenticeship as a polymechanic EFZ. Noah has already settled in very well to his work and has integrated well into our team.



FIG. 15.4 – Masterpiece from Brandon: mirror actuator for CTA.



FIG. 15.5 – Masterpiece from Pascal: spindle stopper for the lathe.

Teaching

As every year our annual workshop courses for bachelor students, which took place in August/September 2017 and January/February 2018 were attended with great enthusiasm. In Autumn 2016 ETHZ apprentices trained their welding skills in our workshop (Fig. 15.6).

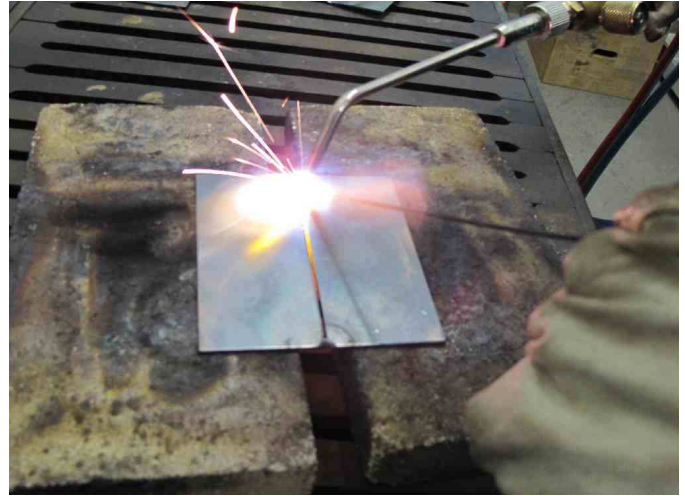


FIG. 15.6 – ETHZ apprentices trained their welding skills in our workshop.

Projects

Last year, our workshop was involved in various internal and external projects. In the following some projects are listed to which we significantly contributed:

- LGAD Telescope (Sec. 9)

For the group of Ben Kilminster we designed and built the telescope to test LGAD (low-gain avalanche detectors) in our workshop (Fig. 15.7).



FIG. 15.7 – Telescope to test LGAD.



FIG. 15.8 – Welding work for reinforcement of the transportation frame done directly on a FlashCam camera body.

- CTA Cherenkov Telescope Array (Sec. 6)
The mechanical workshop has contributed towards the finalization of two FlashCam camera bodies with the production of different mechanical parts as well

as with help and personnel support during the whole assembly phase.

- Disordered and Biological Soft Matter (Sec. 14)
We produced various moulds for fins of zebra fish in order to optimally make use of the integrated swimming channel which was built for the group of Christof Aegerter in the previous year.
- Phase Transitions, Materials and Applications (Sec. 12)
As in previous years we've manufactured various sample holders to be used inside the cryostats for the group of Andreas Schilling . A lead coating was applied to protect against leakage of X-ray.
- Demonstration experiments for the lectures
In order to guarantee excellent demonstration experiments for the student lectures we designed and produced some new devices and revised and maintained several older parts.
- External orders
As in previous years many orders were placed from external institutions, universities and private companies (Fig. 15.9). Our workshop is well and widely known for its competence, high quality work and the highly motivated and competent workshop team.

70

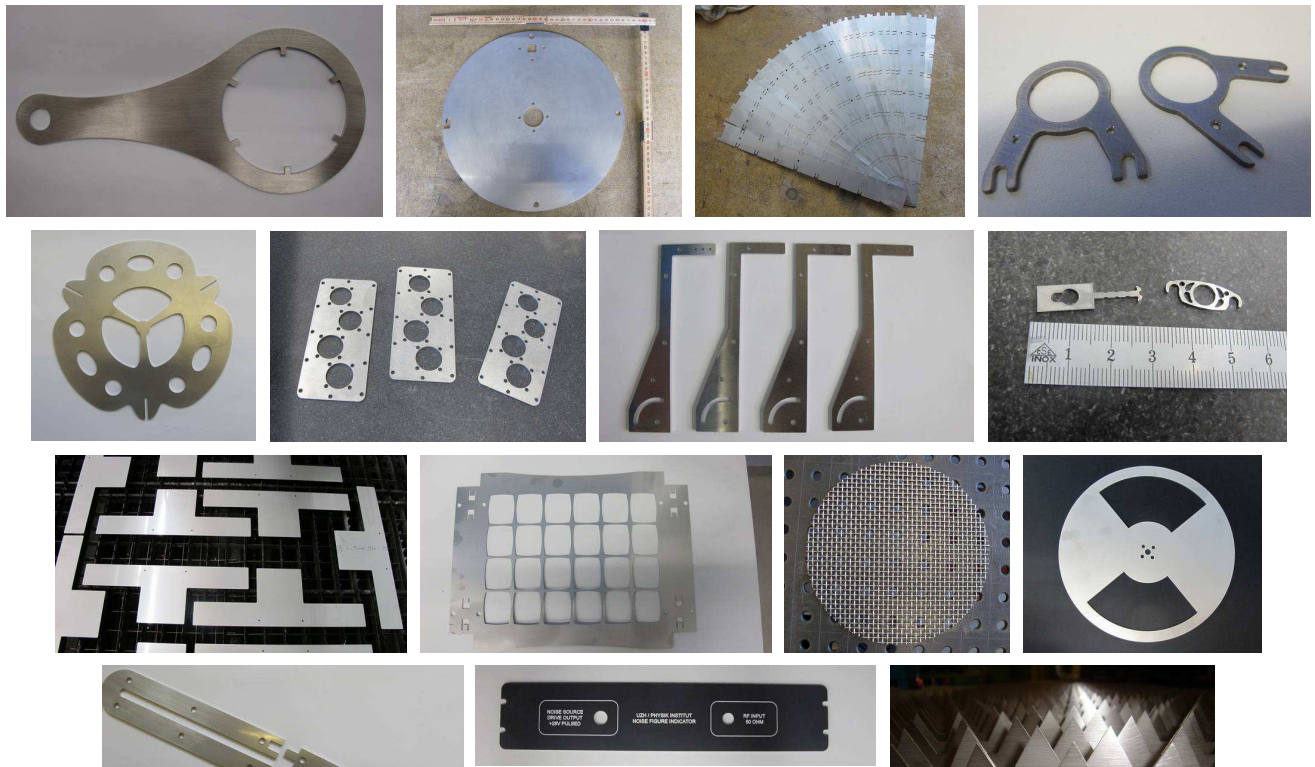


FIG. 15.9 – A selection of parts produced for external institutions, universities and private companies. All of them have been produced with the laser cutter.