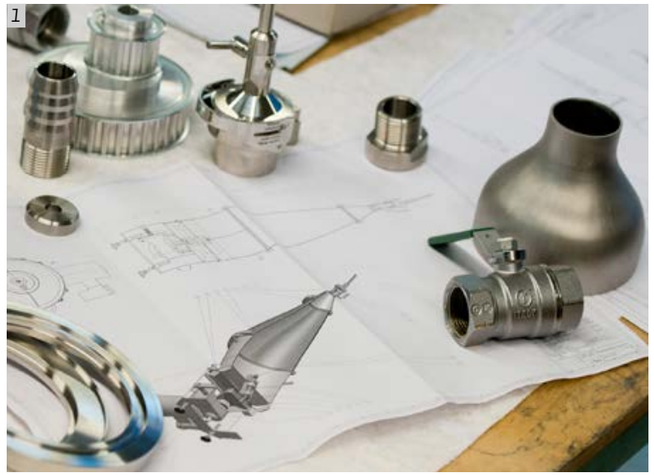
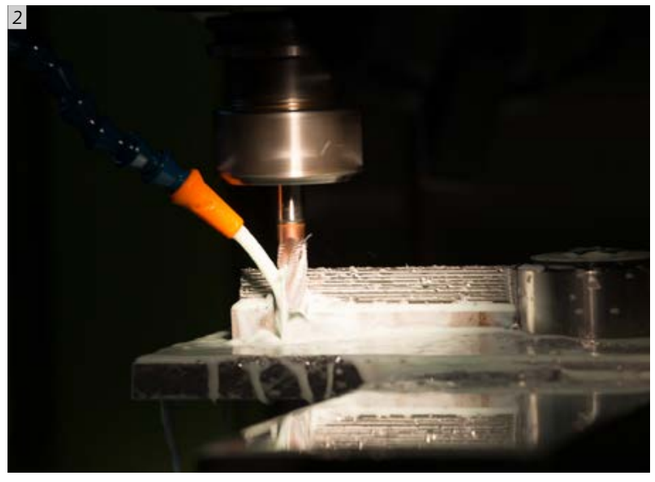
From the Workshop into the Laboratory

Custom-built products that are not available on the market – this is the area of expertise of Oldenburg University's "Betriebseinheit der Technisch-Wissenschaftlichen Infrastruktur" (Scientific Equipment Centre). In the workshops for mechanics, glass apparatus, electronics and wood ,73 employees produce prototypes that scientists need for their research, prototypes such as the Separator, which was developed to isolate microplastic particles from marine sediments. In the photograph a worker welds a steel bar to make the frame for the motor that drives the Separator. On the next pages you can see some of the steps in the construction of the device for microplastic isolation, and also how it is used.





1 *Prior to the Separator's assembly: construction drawings and individual components.*

2 *The Separator's stirring rod is formed by removing the excess metal with a high-speed milling machine.*

3 *The finished Separator is ready for collection.*

4 *Pouring the sediment into the Separator's stirring pot.*

5 *Example of a filtrate after the Separator has separated the sediment components according to density. The parts with low relative density – such as plastic particles – are concentrated in the head section.*

288 million tonnes of plastic were produced in 2012 alone. According to conservative estimates, around 10 percent of this plastic ends up in the ocean where it undergoes mechanical and photochemical fragmentation processes. The particles get smaller and smaller without changing their properties. The smaller the particles, the greater their impact on the environment. We need systematic, standardised studies to determine and track the extent of microplastics pollution in seas and oceans. This is what we are working to achieve with the Separator, a device that separates marine sediment components and microplastic particles on the basis of their density.

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