

## **WATERJET RESEARCH IS APPLIED RESEARCH**

The example of the production of a forex stand is prototypical for Waterjet's research and development in water jet cutting and shows how different areas of research interlock.



## **FOREX STANDS FOR CHILDREN'S ALARM CLOCKS**

An international watch manufacturer produced children's alarm clocks for the world market – a cheap, sturdy product. The majority of the materials used were plastic. Waterjet was assigned to produce from the material forex the stands on which the children's alarm clocks could stand firmly. By using water jet cutting, the watch manufacturer hoped to obtain lower production costs compared to conventional injection moulding processes. First of all, material tests were carried out in the Waterjet Laboratory. They proved: polyvinyl chloride foam (forex) could be precisely cut with a water jet.

For the manufacturer, the commercialisation of the production was crucial, which is why Waterjet had to develop a commercially viable production process. The following criteria were considered: a high degree of automation and dry and sand-free production – a major challenge for abrasive water jet cutting. The development process included a washing and drying process.

During the development process, Waterjet built a new dual head system for efficient, loss-free cutting and developed a completely new cutting machine. This was not an entirely unusual event: New machines (swivel heads, nozzles) are often an additional result of the development of a new production process.



The utmost precision was required so that the final step (design printing with a screen printer) could be performed serially and loss-free. To prevent the forex board from sagging, Waterjet developed a special toughening process, together with the screen printer, and optimised the production process.