



Controlling the Force

**Sheets of aluminium, stainless steel or titanium
are moulded in an open tool at 4000 bar**

Constantly rising demands in quality as well as the requirement for light and stable parts with complex geometries call for increasingly efficient and innovative forming techniques. FF Fluid forming GmbH, based in Lower Saxony, has taken up the task of closing this gap and deals with the production of hydroforming machines for moulding sheets with outer and inner high-pressure processes.

FF Fluid forming was faced with the special challenges of forming sheets with the highest pressures and the control of the required forming forces with hydraulic and electronic control systems, which were successfully applied to the Formbalancer FB 25.

With Formbalancer, sheets – whether aluminium, stainless steel or titanium – are pressed into an open tool with the help of working medium pressures of up to 4000 bar. With this method, only half of a tool is required. In comparison with conventional deep-drawing, most pre-drawing steps are eliminated; follow-on tooling is not needed.

FF Fluid forming does without conventional pressing techniques and relies on an inexpensive stand-arm design, which can be expanded modularly in length and breadth. This is where the core of the Formbalancer comes to the fore: A hydraulic pillow is responsible for the hydro-mechanical decoupling of the tool from the machine frame and guarantees the complete bleed-off of the demoulding forces. The tool stays plane-parallel and 100 % closed – a basic requirement for high precision and dimensional accuracy.

The advantages of Formbalancer lie above all in the excellent surface quality of the formed parts, the reproduction of complex geometries, the low investment costs and savings on tooling, which are up to 80 %.

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