

August 2010, Kottlingbrunn/Austria

PRESS RELEASE

New AQUAMOULD water injection line at IKV:

WITTMANN BATTENFELD provides new AQUAMOULD equipment for research

WITTMANN BATTENFELD recently provided the Institute for Plastics Processing (IKV) in Aachen with an AQUAMOULD line incorporating latest technology for its development projects in the field of water injection technology. This equipment replaces the older Aquamould line previously used by IKV.

With the water injection technology developed by the Institute for Plastics Processing (IKV) in Aachen, water is injected into the plastic melt after it has been injected into the mold. By this method, plastic parts with accurately positioned cavities such as media cable conduits can be produced. An additional benefit of this process is the cooling effect of the injected water, which shortens cooling times and consequently overall cycle times.

Thanks to its advantages, this process has found its way very quickly into innovative industrial applications. WITTMANN BATTENFELD has been closely cooperating with IKV in the field of fluid injection technology for many years.

The AQUAMOULD system for water injection applications developed by WITTMANN BATTENFELD originates from this long-term cooperation. The precise injection of water under controlled pressure ensures high process reliability and thus consistent, high product quality.

The water, compressed to 300 bar by the proven WE 100 compressor unit, is injected into the mold via a high-precision pressure control module, with the mobile Unilog B6 control unit taking care of controlling the entire injection process. This newly developed control unit operates with the same Unilog B6 control system that is incorporated in all WITTMANN BATTENFELD injection molding machines.

The modern B6 control system is equipped with a 15" touch screen for easy entry of all process parameters. The pressure curves for water injection are entered via up to

nine freely programmable coordinates for every pressure control module. All timing parameters are set and displayed with an accuracy down to 0.01 s.

The actual value graphics are a special advantage. Up to four pressure curves can be displayed simultaneously on the screen, with the option of adding envelope curves to the pressure curves for quality monitoring. The B6 is able to take care of all control functions for cores and valve gates that are necessary for molds and processes with this technology. It also contains diagnostics functions as well as all other functions expected from a modern machine control system, including quality tables and pressure integral monitoring. Moreover, the process parameters for many molds can be stored in the control system. The data can be transferred to a PC or other appliances with a USB stick.

The pressure control module is designed as a compact unit. It needs no hydraulic drive but operates exclusively with electric power. Thus it became possible to design the pressure control valve with extremely small dimensions, and to place it directly underneath the mold. Highly dynamic, leak-proof high-precision pressure control valves regulate the water pressure during the extremely short phase of water injection into the profile mold.

With the help of gas-assisted injection molding, low-warpage parts can be produced with narrow tolerances, with reduced weights and without sink marks. Thanks to the AIRMOULD system from WITTMANN BATTENFELD, users are now able to benefit from the advantages of this technology.

A special advantage of the new B6 control unit is its ability to operate with Aquamould as well as with Airmould, so that it can be used for both water and gas injection.

With the new, mobile Unilog B6 control unit, IKV can not only operate up to four pressure control modules for water, but also use the gas pressure control modules of the Airmould system belonging to IKV with this control unit. This has also made it easy to carry out tests with combinations of gas and water injection.

The advantage of easy programming of the B6 with its many possibilities and options for various process technologies, in conjunction with the reliable repeatability of the Aquamould system, offers IKV staff new opportunities for present and future development projects.



Fig. 1: Professor Walter Michaeli (left), who holds the Chair of Plastics Processing at RWTH Aachen, thanks Dipl.- Ing. Helmut Eckardt, Director of New Technologies at WITTMANN BATTENFELD

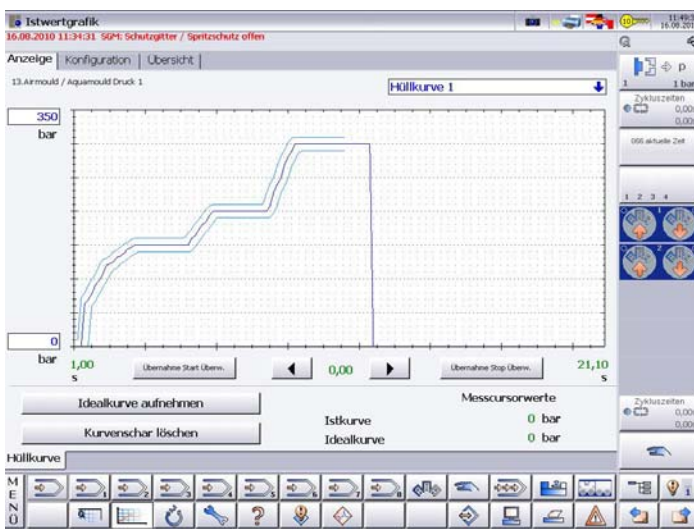


Fig. 2: Actual value graphics: pressure curve with envelope curve

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