

January 2009, Kottlingbrunn / Austria

PROCESSOR REPORT

The logo for wolfcraft, featuring the word "wolfcraft" in a white, lowercase, sans-serif font with a registered trademark symbol (®) to its upper right. The text is set against a teal background that is part of a larger graphic element consisting of a yellow and teal diagonal bar.

wolfcraft has the proper grip

wolfcraft GmbH, Germany's leading manufacturer of do-it-yourself tools, and the injection molding machine manufacturer Wittmann Battenfeld have maintained close business relations for many years. To manufacture its latest new product, a manual plasterboard sanding tool, wolfcraft recently added a multi-component injection molding machine to its equipment consisting exclusively of Wittmann Battenfeld machines. Wittmann Battenfeld assisted wolfcraft with the development of this new product from the idea and its implementation to the finished plastic component.

wolfcraft - swimming successfully against the current

Five years have now passed since wolfcraft GmbH, based in Kempenich/Eifel (Germany), decided to relocate its plastics processing sector from the "extended workbench" to in-house manufacturing. This has made it possible for the company to manufacture its extensive product range "all of a piece" in the true sense of the word. With insourcing instead of outsourcing, wolfcraft is swimming successfully against the current: it has been able to achieve substantial cost cuts through in-house plastics processing. Consequently, wolfcraft has become a cost leader in the highly competitive do-it-yourself market, in a position to offer its products to with an excellent price/performance ratio.

The company, established by Robert Wolff in 1949, has developed into a leading manufacturer of do-it-yourself tools over the years. More than 480 persons are employed at its two production plants in Germany and Slovakia and nine subsidiaries worldwide. "Our employees are our most important assets, we consider them as partners in our business. A policy of open communication and profit-sharing for our

staff are characteristics of wolcraft's corporate philosophy," explains Thorsten Bauseler, Head of Industrial Engineering of the Dunajska Stredá facility in Slovakia.

The company's annual turnover exceeds 100 million EUR.

A handyman's paradise

The wolcraft product portfolio is extensive. Everything that facilitates working with wood, metal, plastics, stone or glass is available. The range includes some 3,500 items, from sanding paper and wire brushes to complete workbenches. 18.5 million individual parts are manufactured on Wittmann Battenfeld machines alone. The proportion of plastics components is continuously on the increase. Customers demand easy-to-handle, attractive, light and low-cost hand tools, but don't want to compromise on quality and safety. Designers and product developers are constantly engaged in developing new, improved products. The outcome is attractive tools in characteristic wolcraft design with excellent ergonomics and functionality, tools that "lie comfortably in the worker's hand".

wolcraft relies on Wittmann Battenfeld

"We are absolutely certain of the high quality and precision of Wittmann Battenfeld machines. Their expert engineers have extensive know-how in process and mold technology as well as many years of experience in multi-component technology. Our decision to acquire yet another Wittmann Battenfeld machine was based on the excellent past experience we have had with this technology and this company", Bauseler emphasizes.

wolcraft currently has more than 12 machines with clamping forces ranging from 60 to 160 tons, all from Wittmann Battenfeld. The third multi-component machine was delivered recently, an HM MK 160/750H/130V with an integrated servo-electric rotary unit and Airmould equipment for gas injection technology.

The ergonomically designed two-component handles for the new manual sanding tool, which are manufactured on it, are suitable for all areas of application, making it possible to work fast and without fatigue. Especially this ergonomic requirement presents a considerable challenge in manufacturing the handle, which must also be light and have the desired soft-touch effect.

Therefore the manufacturing possibilities were already discussed at an early stage in the product development process by a team of experts consisting of mold makers, product developers, designers, injection molding operators and application engineers from wolcraft and Wittmann Battenfeld. After extensive tests carried out at Wittmann Battenfeld's technical lab, a combined process solution was chosen, integrating Wittmann Battenfeld's Combimould multi-component technology with the patented Airmould® gas injection technology, also developed by Wittmann Battenfeld.

Combimould plus Airmould® – the proper grip for the new sanding tool

The combination of Combimould with Airmould® is the process which makes it possible to form hollow parts and then mold on a soft component without any problems.

The multi-component handle is produced with the help of rotary technology, that is, at the first station of the rotary unit the basic body of the handle is injection-molded from PP. Via an Airmould injection unit incorporated in the mold, gas is then injected into the melt to form the cavity inside the part and keep the previously injected melt in close contact with the cavity wall of the mold. Components from the Airmould modular system are used for this purpose: a DE 12 compressor unit and a mono-module with a manual programming device.

After the hollow part has been formed, the mold is opened. A servo-electric rotary unit then turns the preform into the second injection molding position, and the mold is once again closed. Now the second component - a thermoplastic elastomer (TPE) - is injected onto the hollow part. Here, deformation of the hollow part in the course of injecting the soft component must be avoided. This is achieved by optimal positioning of the injection points and a special mold technology in combination with Airmould. The vast experience of Wittmann Battenfeld was utilized in determining the correct positions for the injection points.

The result of this special technology is a light, thin-walled handle with a soft component providing a pleasant surface feel.

Combimould – improved functionality, quality of design and performance

wolcraft's new production cell features all necessary equipment for multi-component and Airmould technology. For instance, the HM MK 160/750H/130V is equipped with

an adjustable, servo-electric rotary unit offering the advantages of fast, precise rotations and low height. This rotary unit, which can be adapted to match the size of the machine, is available in sizes from 460 to 1300 mm and for 2-, 3- and 4-station systems. The adjustable rotary unit can also be retrofitted on an HM MK at any time.

On the wolcraft machine, the second injection unit for the soft component is arranged in a vertical position next to the standard horizontal aggregate. This is the most frequently used configuration concept and allows injection of the second component into the mold parting line. With the use of hot runner systems, injection points in different positions are also possible. In order to target such injection points, the vertical unit can be freely moved along its linear guides and thus very easily and steplessly adjusted to the individual requirements of the mold. It can be completely moved back behind the fixed platen for unobstructed mold change.

Where parts removal by a robot is desired, a Wittmann robot can also be mounted above the moving platen.

Based on the standard HM series with its high-precision machine technology, the HM MK (available with clamping forces from 45 to 650 tons) with its extensive range of options and great variety of combination possibilities is the right package deal for any multi-component technology.

Multi-component technology plays a prominent part in the tooling sector, opening up a wide range of new design options. Thus wolcraft is also well prepared for additional, future projects with its new Combimould and Airmould equipment.



Fig. 1: Thorsten Bauseler, Head of Industrial Engineering at wolcraft (on the right), with Edmund Kirsch, Product Manager of Multi-Component Technology at Wittmann Battenfeld



Fig. 2: The wolcraft production plant at Dunajska Stredá (Slovakia) is equipped with 12 injection molding machines, all from Wittmann Battenfeld



Fig. 3: Do-it-yourself made easy with 2K manual sanding tools from wolcraft



Fig. 4: wolcraft developed the new manual sanding tool jointly with expert engineers from Wittmann Battenfeld



Fig. 5: 2-K handle with a cavity

Contact:

Wittmann Battenfeld GmbH

Wiener Neustädter Straße 81

A-2542 Kottlingbrunn

Tel: +43 2252 404-1400

Fax: +43 2252 404-1002

susanne.binner@wittmann-battenfeld.com

www.wittmann-battenfeld.com

Wolfcraft GmbH

Wolff-Straße

D-56746 Kempenich

Tel.: +49 2655 51-0

Fax: +49 2655 51-180

info@wolfcraft.com

www.wolfcraft.com