

USER REPORT / 客戶報導

January 2021, Kottlingbrunn/Austria

BILORA Kunststofftechnik GmbH, Germany

德國 BILORA Kunststofftechnik 技術公司

BILORA utilizes Insider solution with integrated auxiliaries from WITTMANN BATTENFELD

BILORA 公司採用威猛巴頓菲爾內部集成系統

Since March 2019, BILORA Kunststofftechnik GmbH in Germany has been operating two injection molding machines with Insider solution from WITTMANN BATTENFELD. These machines recommend themselves by their compactness, reliability and efficiency.

自 2019 年 3 月以來，德國 BILORA 公司一直在運營兩台來自威猛巴頓菲爾提供的內部集成系統(即”現場交貨”式生產單元)解決方案射出成型機。這些機器以其緊湊、可靠和高效率而引人注目。

The origins of BILORA now date back an impressive number of 111 years to 1909, when Metallwarenfabrik Kürbi & Niggeloh was founded in Barmen-Rittershausen. Then, this company manufactured tubular tripods, pendant luminaires, music stands and other metal goods. Today's corporate headquarters in Radevormwald were built and officially opened in 1911. In 1956, the company's production output exceeded 1 million cameras.

提到 BILORA 的起源就要追溯到 111 年前，也就是 1909 年前，在 Barmen-Rittershausen 設立 Metallwarenfabrik Kürbi & Niggeloh 時，生產管狀三腳架、吊燈、譜架……等。然而現在的總部已牽至 Radevormwald，在 1911 年開始營運。在 1956 時，公司的年產量超過一百萬台照相機。

The first plastics injection molding machine was purchased in 1961. The management had recognized the advantages of this new technology, and at this point the potential inherent in these materials originally frowned on as “cheap plastic” had already long been realized. Plastics were now able to compete with metals. Engaging in plastics injection molding resulted in numerous advantages, such as low-cost production of individual parts, virtually complete elimination of downstream finishing, perfect surfaces, light part weights and dispensing with numerous steps in assembly work. In 1994, the new company KÜRBI & NIGGELOH BILORA GmbH was founded, which now exclusively engaged in manufacturing plastic products. In 2016, this company was renamed BILORA Kunststofftechnik GmbH.

BILORA 在 1961 年購買了第一台塑料射出成型機。管理層已經察覺到這項新技術的優勢，並且意識到了這些一開始被稱為”廉價塑料”材料的內在潛力。塑料現在已可以與金屬競爭。塑料注射成型具有許多好處，例如低成本生產零件，幾乎完全消除了下游加工、產出完美的表面、輕巧的零件重量，並省去組裝工作中的許多步驟。1994 年，新的 KURBI 和 NIGGELOH BILORA

CmbH 正式成立，現在專門從事塑料產品的生產。2016 年，該公司更名為 BILORA Kunststofftechnik GmbH。

Today, BILORA produces a wide range of different parts made of engineering plastics by mono- and two-component injection molding in both small and large-production lots, using 40 injection molding machines with clamping forces from 150 to 2,000 kN. BILORA's product portfolio also includes metal/plastic composites, such as are used, for example, in the automotive industry.

如今，BILORA 使用 40 台鎖模力為 150 至 2,000kN 的射出機，通過單色和雙色注射成型，以小批量和大批量生產各種工程塑料製成的不同零件。BILORA 的產品組合包括金屬/塑料複合材料，像是用於汽車工業...等。

Many of the molded parts undergo further processing, including pad and screen printing, assembly of components (as well as functional tests if desired by customers) or shelf-ready sales packaging. Plastic parts for machine construction are frequently subjected to mechanical downstream finishing at BILORA, since the small numbers of units would not justify an investment in elaborate molds. The use of ERP and MES systems ensures complete traceability of every single batch.

許多模製零件都需經過進一步處理，包括移印和絲網印刷，組件組裝（以及客戶要求的功能測試）或可上架銷售的包裝。BILORA 用於機械製造的塑料零件經常在下游進行加工，因為透過特別訂製精緻模具生產少量的零件並不符合成本效益。另外，使用 ERP 和 MES 系統可確保每個批次的完整可追溯性。

For its in-house mold-making shop, the company has invested in a CNC machining center and a wire EDM machine. The company also operates its own design department supported by CAD/CAM applications.

公司為了內部的模具製造廠，投資了 CNC 加工中心和電火花線切割機。更設立了自己的設計部門，並由 CAD / CAM 應用程式輔助。

BILORA und WITTMANN BATTENFELD

BILORA 公司與威猛巴頓菲爾

The cooperation with WITTMANN BATTENFELD started several years ago with the installation of a special parts removal technology. BILORA invested in various WITTMANN robot systems from the W8 and W9 series, which were retrofitted to existing injection molding machines. BILORA produces its own parts removal grippers equipped with security query systems and some additional functionalities. Convenient facilities for easy integration and control of the removal grippers by the robot's control system ensure optimal utilization of the available options. The reliability of the equipment and the good support provided by WITTMANN BATTENFELD were the decisive factors prompting BILORA's subsequent decision to acquire WITTMANN single- and dual-circuit temperature controllers (for water with temperatures up to 160 °C), as well as DRYMAX dryers and DOSIMAX dosing systems.

幾年前與威猛巴頓菲爾合作機械手自動化技術時， BILORA 投資了 W8 和 W9 系列的各種威猛的機器手臂系統，這些系統已被改裝到現有的塑膠射出成型機上。 BILORA 不僅生產自己的零件拆卸夾具，並配備了安全查詢系統和一些其他功能。機器可通過控制系統輕鬆地集成和控制拆卸夾具，確保充分利用選用的配件。威猛巴頓菲爾設備的可靠性和總是提供最完善的服務讓 BILORA 決定購買威猛的單溫和雙溫溫度控制器（溫度高達 160°C 的水式溫度控制器）以及 DRYMAX 乾燥機和 DOSIMAX 計量機。

In March 2019, two servo-hydraulic *SmartPower* injection molding machines from WITTMANN BATTENFELD, with 600 kN and 900 kN clamping force respectively, were installed at BILORA – both models designed as Insider cells. An Insider cell comes with an integrated handling system for the molded parts, including a transfer conveyor belt, as well as a protective encasement firmly connected to the machine. Compared to conventional systems, these integrated fixtures reduce the work cell's footprint by up to 50 %. BILORA appreciates the machines from WITTMANN BATTENFELD for their integrated auxiliaries as well as their compact design, moreover, they have also proved extremely reliable and efficient. Michael Müller, Managing Director of BILORA, comments: "The Insider machines from WITTMANN BATTENFELD recommend themselves primarily by their space-saving design, the good balance between mold space, clamping force and injection units, as well as CE compliance without any need for additional protective devices outside the machine, full integration of the robots, and last, but not least, the excellent user-friendliness, which we have already come to know and appreciate from the previously installed robot systems. With these solutions, WITTMANN BATTENFELD is helping us to continue manufacturing our products efficiently and with a high quality standard "

2019 年 3 月，在 BILORA 安裝了兩台威猛巴頓菲爾伺服液壓 *SmartPower* 注塑機，分別具有 600 kN 和 900 kN 的鎖模力-兩種型號均設計為內部集成整合系統(Insider cell)。內部整合系統帶有用於模製生產的集成處理系統，包括輸送帶和牢固連接到機器的安全圍籬。與傳統的系統相比，這些集成式設計可將工作單元的佔地面積減少多達 50%。全歸功於威猛巴頓菲爾的機器集成輔助裝置以及精密的設計，此外，它們還被證明可靠性非常高和高效率的生產。BILORA 董事總經理 Michael Müller 表示：“威猛巴頓菲爾的整合式射出機，其節省空間的設計，在模具空間，鎖模力和注射單元之間的良好平衡以及 CE 符合性，而無需任何其他附加措施，實在令人滿意。威猛巴頓菲爾通過這些解決方案為機器外部的保護裝置，機器手的完全集成，最後，卓越的人性化功能，我們從以前安裝的機器手系統中了解，威猛巴頓菲爾將會繼續高效地替我們生產高品質的產品。



Fig. 1: SmartPower 60 and SmartPower 90, equipped as Insider cells.

(Photo: WITTMANN BATTENFELD)

圖 1: 裝設內部集成系統(Insider cells)的 SmartPower 60 以及 Smartpower 90。



Fig. 2: from the left: Jörg Schröer, WITTMANN BATTENFELD Sales, Michael Müller, Managing Director of BILORA

(Photo: WITTMANN BATTENFELD; please note: this picture was taken before the outbreak of the Corona pandemic)

圖 2: Jorg Schroer (威猛巴頓菲爾業務) 以及 Michael Muller (Bilora 總經理) 合照。



Fig. 3: WITTMANN TEMPRO plus D temperature controllers integrated in Insider cells
(Photo: WITTMANN BATTENFELD)

圖 3：裝設內部集成系統(Insider cells)的恆溫器 Plus D。

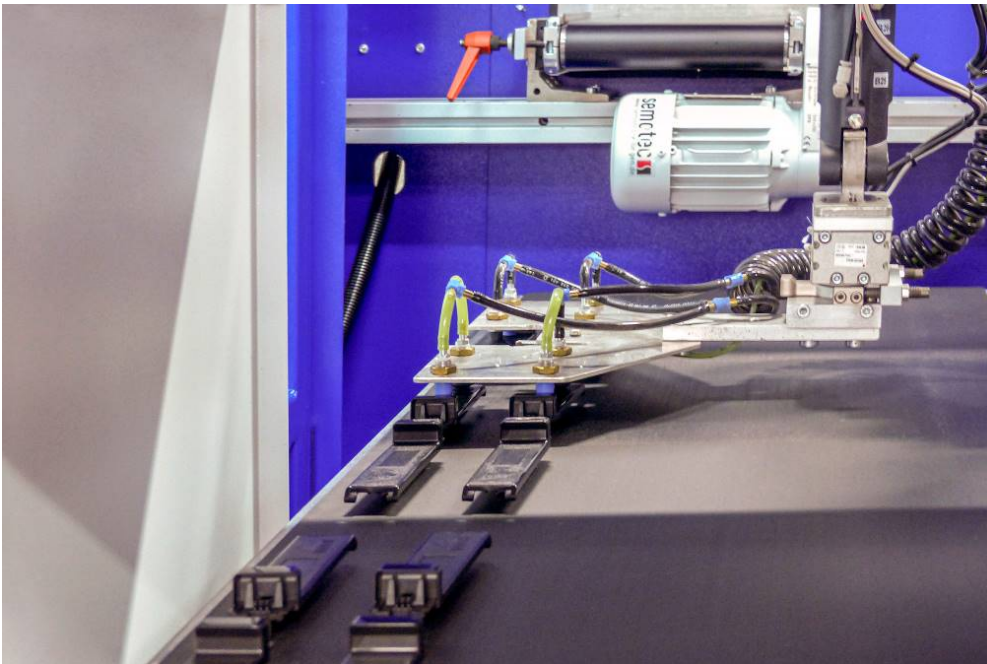


Fig. 4: Parts depositing by WITTMANN robot
(Photo: WITTMANN BATTENFELD)

圖 4：利用威猛的機械手臂取出產品。

The WITTMANN Group

The WITTMANN Group is a globally leading manufacturer of injection molding machines, robots and auxiliary equipment for processing a great variety of plasticizable materials – both plastic and non-plastic. The group of companies has its headquarters in Vienna, Austria and consists of two main divisions: WITTMANN BATTENFELD and WITTMANN. Following the principles of environmental protection, conservation of resources and circular economy, the WITTMANN Group engages in state-of-the-art process technology for maximum energy efficiency in injection molding, and in processing standard materials and materials with a high content of recyclates and renewable raw materials. The products of the WITTMANN Group are designed for horizontal and vertical integration into a Smart Factory and can be interlinked to form an intelligent production cell.

The companies of the group jointly operate eight production plants in five countries, and the additional sales companies at their 34 different locations are present in all major industrial markets around the world.

WITTMANN BATTENFELD pursues the continued strengthening of its market position as a manufacturer of injection molding machines and supplier of comprehensive modern machine technology in modular design. The product range of WITTMANN includes robots and automation systems, material handling systems, dryers, gravimetric and volumetric blenders, granulators, temperature controllers and chillers. The combination of the individual areas under the umbrella of the WITTMANN Group enables perfect integration – to the advantage of injection molding processors with an increasing demand for seamless interlocking of processing machines, automation and auxiliaries.

威猛集團是射出機、機械手和周邊輔助設備的全球領先製造商，用於加工各種可塑材料（包括塑料和非塑料）。威猛集團總部設在奧地利維也納，由兩個主要部門組成：威猛巴頓菲爾和威猛。威猛集團遵循環境保護、節約資源和循環經濟的原則，致力於最先進的工藝技術，以最大程度地提高注塑成型的能效，以及用於處理標準材料以及回收料和可再生原料含量高的材料。威猛集團的產品旨在將水平和垂直方向集成到智能工廠中，並且可以相互鏈接以形成智能生產單元。

威猛集團在全球 5 個國家設有 8 個生產工廠，其中 34 個直屬分公司銷售遍布全國所有主要工業市場。

威猛巴頓菲爾致力於不斷增強其作為注塑機製造商和模組化設計的綜合現代機械技術供應商的市場地位。威猛的產品系列包括機械手和自動化系統、中央供料系統、除濕乾燥機、秤重式和體積式的計量機、粉碎機、模具溫度控制器和冷卻器。威猛集團的結合已經使所有產品線連接為一體，提供塑料加工商在射出機、自動化和輔助設備的無縫接軌，成為尋求集成方面的所在優勢 - 所有這些都以漸進的速度發生。

威猛台灣分公司針對客戶需求提供系統方案為主力；以技術性整合、技術性提供之「整合」系統，從技術提供、技術諮詢，服務、訓練工程師到位、不間斷服務及教育訓練之售服，從觀念、技術及加工條件之支援，來自奧地利總公司之技術支援等，滿足全面性服務。

更多信息可參訪我們的網站 www.wittmann-group.tw LINE @: [@witw](https://www.facebook.com/WittmannBattenfeldTaiwan)

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