

WITTMANN presents innovations
at the Fakuma 2021
威猛在 Fakuma 2021 上展示創新成果

The WITTMANN Group is taking the opportunity to present its most recent product developments in a great variety of different areas at the Fakuma in Friedrichshafen. The company will showcase its latest innovations in automation and peripherals from 12 to 16 October at its booth No. 1204 in hall B1.

威猛集團將在腓特烈港的 Fakuma 展示其在不同領域的最新開發產品。威猛集團將於 10 月 12 日至 16 日在 B1 展廳的 1204 展位上展示其在自動化和周邊設備方面的最新創新。

Extension of SONIC robot series
SONIC 機器手臂系列的擴展

In 2019, the **SONIC** robot series was launched to replace the high-speed robots from the **UHS** series. **SONIC** robots come with a new design and are equipped with the ultra-modern R9 robot control system. The new **SONIC 108** for use on small injection molding machines with clamping forces from 50 t upwards now joins the appliances already on the market for clamping forces from 150 to 500 t.

在 2019 年，**SONIC** 機械手臂系列被推出並且取代 **UHS** 系列的高速機器手臂。**SONIC** 機械手臂採用了全新的設計，並配備了超現代的 R9 機械手臂控制系統。新的 **SONIC 108** 用於鎖模力為 50 噸以上的小型射出機，現在加入了已經在市場上的設備，鎖模力可從 150 噸到 500 噸。



WITTMANN SONIC 108

In contrast to the larger **SONIC** models, the **SONIC 108** has been fitted out with a fixed demolding axis, which has proved extremely advantageous for small injection molding machines. Short overhangs and a compact control cabinet simplify the CE-compliant housing of the automation cell. During the active demolding stroke movement above the mold space, no axis elements are pushed towards the injection unit, which substantially simplifies the enclosure especially in the area behind the fixed clamping plate of the machine.

與較大的 **SONIC** 型號相比，**SONIC 108** 配備了一個固定的脫模軸，這被證明對小型射出機非常有利。短暫的懸臂和緊湊的控制櫃簡化了符合 CE 標準的自動化單元外殼。在模具空間上方的主動脫

模行程運動中，沒有軸元件被推向射出單元，這大大簡化了外殼，特別是在機器的固定夾板後面的區域。

The **SONIC 108** has been optimized for high-speed parts removal in packaging and pick-and-place applications. It is designed for cycle times below 4 s, with IN/OUT times kept below 0.9 s. To facilitate this type of high-speed removal, the drive system concept has been completely revised, with **SONIC 108** still able to handle payloads up to 2 kg. The familiar WITTMANN functions, such as **iVac** vacuum control with blow-off function, axis activation, **SmartRemoval** and digital visualization of the axial movements are part of the appliance's standard equipment. Use as an insider is also possible (i. e. for parts depositing inside the IMM's protective housing). For the market launch at the FAKUMA 2021, where the **SONIC 108** will be presented for the first time, the appliance will be available with horizontal strokes of up to 1,500 mm and vertical strokes of up to 1,000 mm.

SONIC 108 已被用於包裝和取放應用中的高速零件拆卸。它的設計週期低於 4 秒，輸入/輸出時間保持在 0.9 秒以下。為了促進這種高速拆卸，驅動系統的概念已經完全被修改，**SONIC 108** 誠然能夠處理高達 2 公斤的有效載荷。熟悉的威猛功能：如帶吹氣功能的 **iVac** 真空控制、軸向激活、**SmartRemoval** 和軸向運動的數據可視化，都是該設備的標準設備的一部分。它也可以做為內部使用(即用於沉積在 IMM 保護殼內的零件)。在 2021 年的 FAKUMA 展會上，**SONIC 108** 將首次推出亮相，該設備的水平行程可達 1,500mm，垂直行程可達 1,000mm。

WX153 robot: new automation option for the medium clamping force range

WX153 機械手臂：中等鎖模力範圍的新自動化選擇

Available from now on: the upgraded **WX153** robot from WITTMANN – the ideal automation solution for injection molding applications on machines with clamping forces from 500 to 1,300 tons.

從現在開始：威猛的升級版 **WX153** 機械手臂——在鎖模力為 500 到 1,300 噸的機器上，是射出應用的理想自動化解決方案。



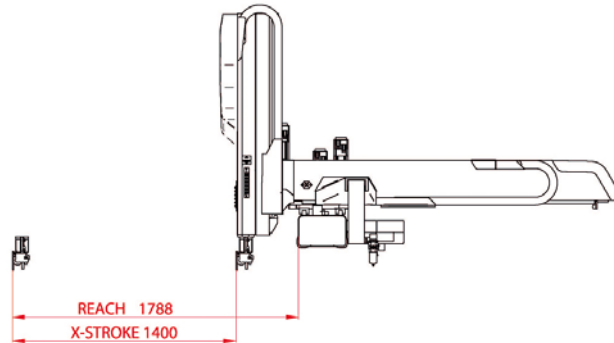
WX153 robot

The new automation solution for injection molding applications in the medium and higher clamping force range is based on the newly upgraded **WX153** robot from WITTMANN. The system consists of a cartesian axial structure with a mobile X-axis serving as demolding axis.

針對中等和較高鎖模力範圍內的射出應用的新自動化解決方案是基於威猛新升級的 **WX153** 機械手臂。該系統包括一個具有移動 X 軸作為脫模軸的笛卡兒軸結構組成。

A horizontal stroke of up to 18 m and a vertical stroke of up to 2,600 mm are possible. An X-stroke of up to 1,400 mm is available for parts removal. This 1,400 mm demolding stroke provides a maximum reach of about 1,790 mm. In this context, the term “reach” designates the maximum distance between the horizontal axis and the mounting plate of the swivel axis at the lower end of the vertical axis. The reach is an essential parameter for the layout of robot systems.

水平行程可達 18 米，垂行行程可達 2,600mm。X 軸行程可達 1,400mm，可用於拆卸零件。這個 1,400mm 的脫模行程提供了大約 1,790mm 的最大行程。在這種情況下，術語“伸長”指的是水平軸和垂直軸下端的旋轉軸安裝板之間的最大距離。伸長律是機械手臂系統布局的一個基本參數。



This diagram very clearly illustrates the difference between the reach and the X-stroke
 這張圖非常清楚地說明了距離和 X 行程之間的區別

Internal tubing and/or wiring in the vertical Y-tube, easily accessible lubrication points and the integrated control cabinet at the rear of the horizontal carrier are part of the **WX153** robot's standard equipment. The control cabinet has invariably its original dimensions regardless of the number of additional axes attached.

WX153 機械手臂標準設備包括垂直 Y 型管中的內部管道和/或布線、易於接近的潤滑點和水平載體後部的集成控制櫃。無論附加多少軸，控制櫃始終保持原來的尺寸。

Three additional axes can be mounted to each robot at the end of its vertical axis to drive the removal gripper. Moreover, WITTMANN is able to build tandem robot solutions as well, that is, two traversing units acting together on the main carrier. Even in such cases, an add-on control cabinet can be dispensed with; so the space provided for it beside the injection molding machine can be used for any necessary auxiliaries other than automation equipment.

在每個機械手臂的垂直軸末端可以安裝三個附加軸，以驅動拆卸夾具。此外，威猛也能建立串聯機械手臂解決方案，及兩個橫移單元一起作用於主載體。即使在這種情況下，也可以省去一個附加的控制櫃；因此，在射出機旁邊為其提供的空間可以用於自動化設備以外的任何必要的輔助設備。

Various optimizations still enable the **WX153** to operate with a gripper weighing more than 20 kg even when using three (!) additional axes. Compared to the previous device concept, this equals a possible increase in weight by more than 30 %.

各種優化措施仍然使 **WX153** 在使用三個附加軸的情況下，能夠與重力超過 20 公斤的夾具一起運行。與以前的設備概念相比，這相當於可能增加 30% 以上的重量。

TEMPRO basic Large 120: new and powerful temperature controller**TEMPRO basic Large 120: 新型強大的模溫機**

For efficiency in operation, injection molding production with large and heavy molds requires high heating capacity on the one hand, and correspondingly high flow rates in the cooling channels on the other hand. The new WITTMANN **TEMPRO basic Large 120** temperature controller is the perfect solution for such tasks.

為了提高操作效率，使用大型和重型模具的射出產生一方面需要較高的加熱能力，另一方面需要冷卻通道中相應的高流速。新型威猛 TEMPRO basic Large 120 模溫機是此類任務的完美解決方案。



*The new TEMPRO basic Large 120
temperature controller from WITTMANN
WITTMANN 新推出的 TEMPRO basic Large 120 模溫機*

First of all, this temperature controller offers a maximum heating capacity of 36 kW, a value which ensures an optimal heating time for the mold from both the technical and the economical point of view. This is of special importance whenever very fast heating is necessary, for example after a mold change.

首先，該模溫機的最大加熱能力為 36kW，這個數值從技術和經濟的角度來看，都能確保模具的最佳加熱時間。在需要快速加熱的情況下，例如換模後，這一點就顯得特別重要。

The heat accumulated in the hot steel of the mold plus the additional heat input from the melt caused by the injection molding process must be extracted again from the mold circuit as fast as possible via the cooling channels. This is the only way to establish a homogeneous heat transfer inside the mold, which benefits the entire process. To create ideal conditions in this respect, the **TEMPRO basic Large 120** is optionally equipped with a new frequency-controlled pump. This pump model, known as the **SpeedDrive** pump, comes with an output of 4 kW, can handle a maximum flow rate of 300 l/min and generates a maximum pressure of 5 bar. With the **SpeedDrive** pump, users are able to set the correct parameters for further process regulation – motor speed, flow rate, pump pressure and differential temperature. An approach which makes a vital contribution to process stability. Automatic adjustment of the parameter settings within a certain tolerance margin also optimizes the uptime of the equipment in production. Using a **SpeedDrive** pump can be seen as a synonym for energy-efficient pump operation, since it is generally sufficient to operate the pump under partial load to comply with the selected parameter settings.

在模具的熱鋼中積累的熱量加上射出成型過程中從熔體中輸入的額外熱量必須通過冷卻通道盡快從模具電路中再次提取出來。這是建立模具內均勻傳熱的唯一方法，這有利於整個過程。為了在這方面創造理想條件，**TEMPRO basic Large 120** 可以選擇配備一個新的頻率控制泵。這種泵的型號被稱為 **SpeedDrive** 泵，輸出功率為 4kW，可處理最大流量為 300 升/分鐘，產生最大壓力為 5bar。通過 **SpeedDrive** 泵，使用者能夠為進一步的過程調節設置正確的參數—電機轉速、流量、泵壓和溫差。這種方法對過程的穩定性做出了重要貢獻。在一定的公差範圍內自動調整參數設置也優化了生產中設備的正常運行時間。使用 **SpeedDrive** 泵可以被看作是節能泵運行的代名詞，因為一般來說，在部分負荷下運行泵就足以符合選定的參數設置。

The development of the new **TEMPRO basic Large 120** was prompted by increasing tendencies on the market towards the necessity for fast heating of large molds, while simultaneously providing the subsequently required high cooling performance. After all, such a solution must also contribute to optimizing the cycle time. Consequently, the cooling function of **TEMPRO basic Large 120** has taken the form of an extremely effective direct cooling system for the mold water.

新型 **TEMPRO basic Large 120** 的開發是由於市場上有越來越多的趨勢，即需要快速加熱大型模具，同時提供隨後所需的高冷卻性能。畢竟，這種解決方案也必須有助於優化週期時間。因此 **TEMPRO basic Large 120** 的冷卻功能採用了極為有效的模具水直接冷卻系統的形式。

One example for the phenomenal cooling performance of **TEMPRO basic Large 120**: a differential temperature of 60 °C between mold water and cooling water is the result of an extremely high cooling performance of 175 kW!

TEMPRO basic Large 120 驚人的冷卻性能的一個例子：模具水和冷卻水之間 60°C 的溫差是 175kW 的極高冷卻性能的結果！

As an option, a stainless steel vortex flow measurement device is available for the temperature controller, with a measurement range from 20 to 400 l/min to cover all conceivable applications. 作為一種選擇，不鏽鋼渦流測量裝置可用於模溫機，測量範圍從 20 到 400 升/分鐘，以涵蓋所有可想像的應用。

TEMPRO plus D200 for high-temperature applications 用於高溫應用的 **TEMPRO plus D200**

Numerous new applications require very special solutions for mold tempering. This is why the **TEMPRO plus D** range of temperature controllers from WITTMANN, well known and proven on the market worldwide, has now been extended by adding the new **TEMPRO plus D200** model – a water tempering device for temperatures up to 200 °C.

眾多的新應用需要非常特殊的模具回火解決方案。這就是為什麼威猛的 **TEMPRO plus D** 系列模溫機在全球市場上廣為人知並得到驗證，現在又增加了新的 **TEMPRO plus D200** 型號——一種溫度高達 200°C 的水回火裝置。



TEMPRO plus D200 temperature controller
for high-temperature applications
用於高溫應用的 **TEMPRO plus D200** 模溫機

With this appliance, WITTMANN has responded to the general market trend towards higher process temperatures, and also fulfilled the wish expressed by numerous customers for water temperature controllers to handle high-temperature applications.

有了這款設備，威猛順應了市場對更高工藝溫度的普遍趨勢，同時也滿足了眾多客戶對水溫控制器處理高溫應用的需求。

High water temperatures – and the resulting high pressure levels – place particularly heavy demands on the wear resistance of molds and mechanical components, a fact constantly kept in mind throughout the development of **TEMPRO plus D200**.

高水溫—以及由此產生的高壓水平—對模具和機械零件的耐磨性提出了特別高的要求，在 **TEMPRO plus D200** 的開發過程中，我們始終牢記這一事實。

CARD primus compressed air dryers with VacuJet loader

帶有 VacuJet 裝載機的 **CARD primus** 壓縮空氣乾燥機

The new compressed air dryers from the **CARD** series have been an integral part of the WITTMANN product portfolio since 2020.

自 2020 年以來，**CARD** 系列的新型壓縮空氣乾燥機已成為 WITTMANN 產品系列組成的一部分。

This successful series of appliances is being extended by two new additions, the **CARD primus 10** and the **CARD primus 20**. **CARD primus** appliances are offered as package solutions, each including a **VacuJet** material loader with delivery hose and suction lance as well as the actual compressed air dryer. They come with drying silos of either 10 or 20 l capacity and are suitable for temperatures of up to 200 °C. 這一成功的設備系列正通過兩款新產品—**CARD primus 10** 和 **CARD primus 20**—進行擴展。**CARD primus** 設備是作為一套式解決方案提供的，每台設備都包括一個帶有輸送軟管和吸槍的 **VacuJet** 材料裝載機，以及實際的壓縮空氣乾燥機。它們配有 10 或 20 升容量的乾燥倉，是用於高達 200°C 的溫度。

On these appliances, the desired drying temperature can be set via a touch screen operating panel, and at the end of the pre-drying phase a signal is issued to release an automatic production start-up. The material drying data can be exported via a USB port or via OPC UA.

在這些設備上，可以通過觸控螢幕操作面板設置所需的乾燥溫度，在預乾燥階段結束時，會發出訊號以釋放自動生產啟動。材料的乾燥數據可以通過 USB 端口或 OPC-UA 導出。



**CARD primus 20 compressed air dryer
with FIT control and VacuJet loader**
CARD primus 20 壓縮空氣乾燥機，帶 FIT 控制和 VacuJet 裝載機

With the integrated week timer, the use of the dryers can be ideally adapted to ongoing production planning, and they are ready to run immediately as soon as dried material is required. In the

CARD primus models, the compressed air consumption is very finely and precisely adjusted to the actual demand by an intelligent digital air volume control system.

通過內置的一周計時器，乾燥機的使用可以理想地適應正在進行的生產計劃，一旦需要乾燥的材料，它們就可以立即運行。在 **CARD primus** 型號中，壓縮空氣的消耗量可以通過一個智能數位風量控制系統非常精細和精確地調整到實際需求。

Loading the dryer via a **VacuJet** loader ensures a continuous material supply, and the dryer recognizes automatically when the drying temperature must be lowered.

通過 **VacuJet** 裝載機裝載乾燥機，確保了材料供應的持續性，並且乾燥機能自動識別何時必須降低乾燥溫度。

If the interval between two conveying cycles exceeds a certain period of time, this is interpreted as “no material consumption”, and the dryer then starts the necessary actions to protect the material and to reduce energy consumption.

如果兩個輸送周期之間的間隔超過一定時間，這將被解釋為“沒有材料消耗”，然後乾燥機開始採取必要的行動來保護材料和減少能源消耗。

CARD dryers can be mounted directly onto the machine feed. In combination with a claw flange, the appliances can be pushed into a parking or emptying position.

CARD 乾燥機可以直接安裝在機器的進料口上。結合爪形法蘭，設備可以被推到停放或清空的位置。

If quick-change adapters are used on **CARD** dryers, this will save time when transferring the dryers from one machine to another.

如果在 **CARD** 乾燥機上使用快速更換適配器，這將在將乾燥機從一台機器轉移到另一台機器時節省時間。

From typical small-quantity applications all the way to downstream drying directly on the consumer:

CARD dryers cover an extremely wide range of applications – and ultimately offer an unbeatable price-performance ratio, especially as **CARD primus** package solutions.

從典型的小批量應用一直到下游直接在消費者身上的乾燥：**CARD** 乾燥機涵蓋了極其廣泛的應用範圍——到最終提供了無與倫比的性價比，特別是作為 **CARD primus** 包裝解決方案。

Overworked G-Max 23 and G-Max 33 beside-the-press granulators

過度加工的 **G-Max 23** 和 **G-Max 33** 壓機旁粉碎機

The **G-Max** series of compact beside-the-press granulators is specifically designed for closed-loop material recycling of sprues/runners that are discharged from injection molding machines up to 500 tons clamping force. The WITTMANN **G-Max** series packs a lot of smart engineering into a very compact footprint in order to operate quietly and efficiently, grinding soft to medium-hard plastic sprues and defective parts made of PP, PE, ABS, and PU.

G-Max 系列緊湊型壓機旁粉碎機是專門為從鎖模力高達 500 噸的射出機中排出的澆口/流道的閉環材料回收而設計的。WITTMANN **G-Max** 系列在一個非常緊湊的機身中包含了大量的智能工程，以便安靜而有效地運行，研磨軟到中等硬度的塑膠澆口和由 PP、PE、ABS 和 PU 製成的缺陷零件。

The design of the **G-Max** series of granulators has been standardized, based on the design of **G-Max 13**. Accordingly, the models **G-Max 23** and **G-Max 33** now come with larger hopper openings, and customers are now given a choice between a fixed and a rotatable version of material outlets.

G-Max 系列粉碎機的設計在 **G-Max 13** 的基礎上實現了標準化。因此，**G-Max 23** 和 **G-Max 33** 型號現在有更大的料斗開口，客戶現在可以選擇固定式和可旋轉式的物料出口。

The granulators of the **G-Max** series are driven by a Poly-V belt transmission. And for small beside-the-press granulators, only WITTMANN is able to offer a belt drive with an automatic tensioning system.

G-Max 系列的粉碎機由 Poly-V 皮帶傳動裝置驅動。對於小型粉碎機，只有威猛能夠提供帶有自動張緊系統的皮帶傳送。



G-Max beside-the-press granulator
G-Max 壓機旁粉碎機

The material screens of the **G-Max** series are available with screen perforation in different sizes. This ensures suitability for varying materials and throughputs.

The tiltable material hopper simplifies cleaning and servicing of the appliance enormously. For instance, a screen change can be carried out without tools, and the time required for servicing is reduced to a minimum.

G-Max 系列的物料篩有不同尺寸的篩孔可供選擇。這確保了對不同材料和產量的適用性。

可傾斜的料斗極大地簡化了設備的清潔和維修。例如，更換篩網不需要工具，維修所需的時間也降到最低。

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

威猛集團是一家全球領先的射出機、機械手和周邊設備的製造商，用於加工各種可塑材料(包括塑膠和非塑膠)。威猛集團總部設在維也納/奧地利，由兩個主要部門，威猛巴頓和威猛組成。遵循環境保護、節約資源和循環經濟的原則，威猛集團從事最先進的工藝技術，以實現射出成型的最大能源效率，並加工標準材料和含有高含量回收物和可再生原材料的材料。威猛集團的產品是為橫向和縱向整合到智能工廠而設計的，並且可以互相連接，形成一個智能生產單元。

威猛集團在全球 5 個國家設有 8 個生產工廠，另外在 34 個直屬子公司在全球所有主要工業市場都有銷售。

威猛巴頓作為射出成型機製造商和模塊化設計的綜合現代機械技術供應商，追求持續加強其市場地位。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。威猛集團旗下各個領域的組合實現了完美的整合——這對於加工機械、自動化和輔助設備的無縫連鎖需求日益增長的射出加工企業來說是有利的。

更多信息可參訪我們的網站 www.wittmann-group.tw

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