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PRESS RELEASE

WITTMANN BATTENFELD at the Fakuma

IMD/IML technologies for producing decorated and functionalized surfaces

For WITTMANN BATTENFELD, in-mold decoration is an important technology for decorating surfaces of injection-molded plastic parts. Numerous market segments, such as the automotive, white goods, consumer goods and electronic industry, offer potential for these applications. In a cooperation partnership with SYNTECH PLASTICS and LEONHARD KURZ, WITTMANN BATTENFELD has developed a scalable IMD/IML manufacturing concept. The solution created by the two partners consists basically of machines and automation equipment from the product range of the WITTMANN Group and KURZ IMD technology.

IMD technology not only enables low-cost manufacturing of visually attractive plastic parts, but also offers additional advantages in the production process and has consequently been successful in establishing itself in various branches of industry over recent years. The highly efficient, energy-saving one-step manufacturing process contributes substantially to saving resources in production. Moreover, the processing of regrind to make decorated surface parts has great potential for the future.

The next innovative step in this technology is the integration of functions in decorated surfaces.

In a joint project with LEONHARD KURZ and SYNTECH PLASTICS, suppliers of IMD technology, WITTMANN BATTENFELD continues to drive the further advancement of this interesting and promising concept of decorated and functionalized surfaces for the automotive industry, as well as white goods and other segments, by supplying suitable injection molding technology, and also strengthening the proven partnership between LEONARD KURZ and WITTMANN BATTENFELD. The technology partner SYNTECH PLASTICS has recognized the benefits and potential of the IMD/IML process as well and invested into the future with this system. By contributing its know-how, this company has played a major part in the development of this equipment.

The equipment concept is laid out flexibly to accommodate IMD with a foil feed unit, IMD with foil pre-heating, and IMD Vario with pre-heating and thermoforming insert molding. In the application presented at the Fakuma, a combined process will be shown, consisting of single image IMD and insertion of a sensor foil by IML.

The system comprises a *SmartPower* 300 machine, a W846 robot and auxiliary components from WITTMANN BATTENFELD, as well as the IMD unit supplied by KURZ, and hardening and cleansing technology from Bayer. The machine is specially equipped with the EXPERT coining package, which permits parallel movements of the mold during the injection process. In addition, the automation from WITTMANN comes with a W846 robot fitted with a fixed demolding axis and the gripper technology specially developed for this type of application.

Easy operation, production reliability and effective quality monitoring are ensured by the possibility of having all important components integrated in the machine's UNILOG B8 control system via WITTMANN 4.0, and thus also regulate material loading and temperature control via the injection molding machine.

On this equipment, a close-to-series, fully functional conceptual component for an automotive roof liner element will be manufactured. The functional sensor foil is positioned on the fixed mold half, the carrier foil with the single image décor is formed in the cavity of the moving mold half, then the plastic material is injected, in this case PMMA. Finally, the finished part is cleaned and hardened.

Trade fair presentation and outlook

Via WITTMANN Interactive, the partners will present an interior lining with a functional surface for the automotive industry, produced in a *SmartPower* 300 production cell with automation and WITTMANN 4.0 integration at the WITTMANN BATTENFELD facility in Nuremberg. The fully functional, mass-producible overhead light controller (OHLC) will be shown to trade visitors on demonstrators at the booth of the WITTMANN Group (hall B1/booth 1204) as well as that of LEONHARD KURZ (hall A4/booth 4122).

The production equipment will subsequently be moved to the technology partner SYNTECH PLASTICS for clean-room production and demonstration startup.



Fig. 1: Production cell for manufacturing parts with a decorated and functionalized surface



Fig. 2: Overhead light controller (Photo: LEONHARD KURZ)



Figs. 3a+b: Overhead light controller – close-ups of details (Photos: LEONHARD KURZ)

LEONHARD KURZ Stiftung & Co. KG

The KURZ Group is a global leader in thin film technology. KURZ develops and manufactures decorative and functional layers applied on carrier film for a great variety of industries, ranging from packaging and printing and the automotive sector all the way to electronics, card production and textiles. KURZ offers a comprehensive product portfolio in the area of surface finishing, decoration, labeling and counterfeit protection, which is rounded off by a wide range of embossing machinery and tooling. The company also invests continuously in new technologies and develops innovative solutions for the integration of functionalities in surfaces. The KURZ Group is present with more than 5,500 staff members at more than 30 locations worldwide manufactures according to uniform quality and environmental standards at plants located in Europe, Asia and the USA. A global network of subsidiaries, agencies and sales offices ensures short distances and individual support on site.

SYNTECH PLASTICS

SYNTECH PLASTICS is a family-owned company based in Steinfeld (Oldenburg/Germany), established by Cüneyt Karaoglu in 2003. Since then, the company has developed into a successful full-service supplier in the field of injection molding with 130 staff members, specializing particularly in complex surface components. Together with its customers, SYNTECH PLASTICS develops plastic parts along the entire value chain. 43 injection molding machines with clamping forces ranging from 6 to 2,700 t (3C) produce components as well as complete assemblies for the automobile and furniture industries, for electrical engineering and

household appliances. The production includes special processes such as variothermic processes, in-mold decoration, in-mold labeling, AIRMOULD (internal gas pressure) and CELLMOULD (thermoplastic foam) injection molding.

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.

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