

KOREA ILLIES ENGINEERING helps bring new solution to life

Design advancement is generally considered a worthy and necessary achievement – however as products develop, often the processes or technology involved with such products needs to advance as well. This is the challenge that one of the world's largest display glass manufacturers presented to KOREA ILLIES ENGINEERING.

Designing challenges

In recent years, as design has shifted to meet market requirements, display glass has increased in diameter, while at the same time decreasing in thickness – with the latest generation (8.5) now as thin as 0.3 mms. This has presented a pressing issue for those in the industry – the handling, moving, and transportation of such display glasses requires greater care than ever before. At the current thickness, the client found that the traditional method of handling such glasses, using rubber belts and suction cups, resulted in contamination, visible at the end of the display-manufacturing step.

“The bigger and thinner the substrates become, the more flexible they get, which during transportation can lead to the glass panel being destroyed. Further, when using the traditional rubber components for transportation, trace materials from softeners, cleaning fluids and so on, were found to leave noticeable imprints in the finished displays. This was obviously not a state of affairs that could continue, especially in as competitive a market as Korea's,” describes Mr. Myung-Jae Park, Director at KOREA ILLIES ENGINEERING.

Knowing KOREA ILLIES ENGINEERING's experience in the display sector, which includes important connections in the industry and having provided customer solutions for display glass inspection since the late '90s, the client knew there was no better partner available who would not only find the best possible solution, but also ensure trustworthy cooperation.

Coming to the table

ILLIES suggested the answer lay in the technology being produced by ZS-Handling, a specialist in ultrasonic technology located in Regensburg. In their PhD thesis, the ZS-Handling founders had studied the phenomena of a compressed film of air on top of tables, vibrating at a high frequency.

“Sound is basically waves of compressed air waves. At a very high frequency, it creates a sound wave – a quasi fluid-like stadium – on top of the vibrating table, called a sonotrode. The static forces of the substrate cannot follow the fast movement of the table, and so a film of pressure builds up between the table and the substrate – allowing for contactless handling”, described Josef Zimmerman, Managing Director of ZS-Handling.

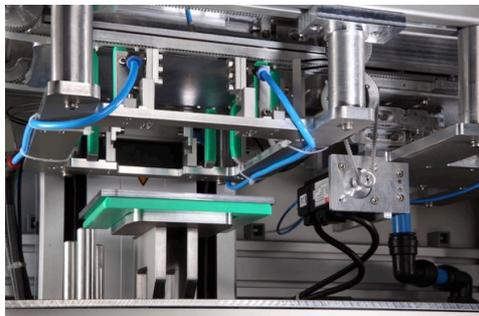
Beyond suggesting this solution, ILLIES also ensured IP protection, and took on a critical administrative role – ensuring fluid communication between all parties. ILLIES also helped to overcome cultural and language barriers to ensure that all evaluations and negotiations went off without a hitch and the first prototypes could be successfully implemented.

A sound solution

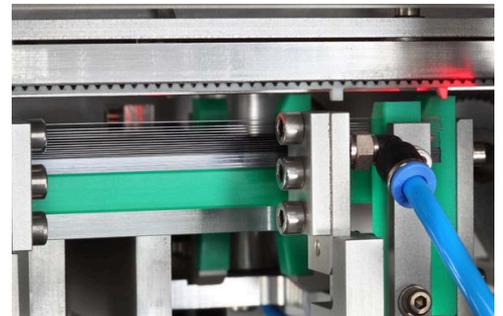
Initial tests of the prototype soon showed the multiple benefits of the system. As a result, within a very short time, KOREA ILLIES ENGINEERING created more than 20 references in the Korean market, including local machine suppliers in the display production chain. Considering that the

technology, which consumes up to 85 % less energy than conventional systems, is able to handle all foreseeable advancements in display glass in the future – the technology has proven itself a truly groundbreaking investment.

Josef Zimmerman, managing director of ZS-Handling, explained that one of the keys to success was identifying the right partner in South Korea – namely KOREA ILLIES ENGINEERING, and described ILLIES’ in-depth knowledge of the hi-tech sector there as “invaluable”. As a result of the project, this state-of-the-art technology has paved the way for future growth in the industry. “The current biggest display producers have adopted this technology and ILLIES has the potential to sell up to 20 installations in the incredibly short period of only two to three years. As the market continues to grow further globally, the required production methods will follow those of Korea,” said Mr. Myung-Jae Park.



KOREA ILLIES ENGINEERING and ZS-Handling established a new technology in the Korean market and created more than 20 references in short time.



ZS-Handling, a specialist in ultrasonic technology, found a way for contactless handling of huge and ultra-thin display glasses.

About ZS-Handling

ZS-Handling GmbH, headquartered in Regensburg (Germany) develops, manufactures and sells products and industrial automation solutions for non-contact handling of sensitive parts. The company was founded in 2006 by Dr.-Ing. Michael Schilp and Dr.-Ing. Josef Zimmermann. Today, ZS-Handling operates through agencies in Japan, Korea, Taiwan, China, and the USA. ZS-Handling has patented unique technology: ultrasonic suspension. It enables industrial customers to handle workpieces without mechanical contact. Utilizing ultrasonic suspension technology, ZS-Handling is providing ultra-pure and ultra-safe handling for a wide range of applications. Core competences of the company including process tool development are vibration analysis, structural dynamics, flow simulation in regard to air flow, especially at high frequencies as well as ultrasound generation and controls. This unique portfolio of competences enables ZS-Handling to provide complete industrial solutions to the customers.

About ILLIES

Founded in 1859 as the first German trading house operating in Japan, ILLIES is a pioneer in East Asian trade. In its 150 years' history, ILLIES has evolved from a general trading house to a specialist for top-end industrial machinery and technologies. Today the company is still family owned and managed – by the fifth generation of Illies – with a strong regional base consisting of 13 branches in 6 Asian countries.

ILLIES offers a comprehensive products and services portfolio for diverse industrial technologies: from project development and implementation of machinery projects up to complete turnkey solutions and after-sales support. As sales and project partner, ILLIES links world-leading technology providers with the manufacturing industry in Asian markets.

In 2016 around 300 employees work for the company. The executive board consists of C. Michael Illies (President/CEO/CFO), Gerd Knospe (CSO), and Jan Rundshagen (CSO). For more information, visit: www.illies.com

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