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Press Release

Successful Cooperation between Schmid Group and Maschinenfabrik Lauffer – Membrane-Free Laminator Passes Production Acceptance Test

All tests passed and ready for delivery – Schmid and Lauffer celebrate the product launch of a new, groundbreaking generation of laminator presses for the production of solar modules.

"PAT successfully completed" was the eagerly awaited pronouncement on 15 June 2011 at Maschinenfabrik Lauffer in Horb am Neckar, Germany. The Schmid Group and Lauffer had thus proven the efficiency of their new, membrane-free laminating process for the production of solar modules. In bringing its two-level stacking laminator successfully through the production acceptance test, Schmid has added yet another core process to its new generation of module lines for automatic module production.

This groundbreaking new lamination process was developed by Schmid and Lauffer in joint cooperation and optimally combines the knowhow of the two technology leaders. The innovative concept is based, on the one hand, on the membrane-free technology patented several times over by Schmid and, on the other, on the Lauffer Company's long-standing years of experience in press and lamination technology. Lauffer is the exclusive supplier of the custom-designed laminator systems. Membrane-less lamination of modules allows savings in operating and maintenance costs of several thousand euros a year. It also saves the time-consuming process of changing the membrane, which in turn significantly increases the uptime of the system.

The multi-level design of these new laminators allows temperature to be steadily introduced to glass-glass and glass-film solar modules from both sides with a +/- 1°C temperature homogeneity never before achieved by similar systems. This significantly shortens the process times in comparison to standard membrane laminators; as a result, process times of less than seven and a half minutes have become the new standard in glass-film module production with immediate effect. The new lamination process also opens up further potential for the significant reduction of process times using suitable, innovative film types.

The latest laminator, designed for a 60MW system, has been delivered to an Italian client. The next large-scale project – a four-level laminator designed for a 120MW module line – is already in the pipelines. It will be installed next fall at another client's premises in Canada.



Maschinenfabrik Lauffer GmbH & Co. KG:

Maschinenfabrik Lauffer manufactures machinery and systems for the electronics and metal-processing industries. Founded as a family business in 1872 and domiciled in Horb am Neckar, Germany, Lauffer has a workforce of over 200 employees. With its wide range of products, the company is considered one of the global machinery leaders and system production leaders in the areas of lamination, plastic processing, encapsulation, metal-forming and powder compacting technology. In the field of lamination technology, Lauffer produces systems and presses for the lamination of PCBs, smart cards, ID documents, technical laminates and composite materials. With an export rate of over 70%, LAUFFER products are used by clients all over the world.

For further information, please visit: www.lauffer.de

The Schmid Group

Schmid is the global market technology leader and provider of systems and process solutions for PCB technology, flat panel display production, photovoltaics in thin-film applications and also leading in the production of solar wafers, cells and modules. The company's product folio includes stand-alone equipment and turnkey production lines with guaranteed performance parameters such as production capacity and efficiency in the wafer, cell and module areas. The Schmid Group represents the entire solar value chain with a high percentage of in-company production. The group's tradition as a system provider is already in its fifth generation. The focus remains on client-oriented process solutions, cost-effective concepts and the ongoing development of new process technologies at the group's own research centers. As a corporate group, Schmid and its workforce of over 2400 employees operates production sites in Germany, USA, Taiwan, Japan and China and is represented globally by numerous service branches. In 2010, the Schmid Group had a total turnover of over €500m.

For further information, please visit: www.schmid-group.com

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<u>Picture caption:</u> SCHMID_LAUFFER_Laminator_01.jpg

Treble-stage process laminator with integrated active cooling



<u>Picture caption:</u> SCHMID_LAUFFER_Laminator_03.jpg Members of Lauffer staff during start-up





 $\underline{\underline{Picture\ caption:}\ SCHMID_LAUFFER_Laminator_02.jpg}$

Details of a single-level laminator



<u>Picture caption:</u> SCHMID_LAUFFER_Laminator_04.jpg

Details of a double-level laminator