



Manz launches SpeedPicker 3.0

Reutlingen, June 6th, 2018. As a high-tech equipment manufacturer, Manz AG realizes new product characteristics with its technological expertise and rapid implementation of innovations and contributes in significant ways to increasing the productivity of its customers. Today in focus: The SpeedPicker from the SAS series in its third generation. The fully redesigned automation solution was specially developed for handling crystalline silicon wafers in the manufacturing of solar cells.

Manz thus extends its product offensive to the market for crystalline silicon solar cells with flexibly configurable standard machines. SpeedPicker is the latest offering from the SAS series; an automation solution for almost contact-free handling of solar cells throughout their entire production process.

The Reutlingen-based high-tech equipment manufacturer, with 30 years of experience in the solar industry, has specialized in recent years primarily in production equipment for manufacturing CIGS thin-film solar modules. "We still consider CIGS technology the most promising in terms of potential efficiency increases and cost reduction," says Eckhard Hörner-Marass, CEO of Manz AG. "However, we see that also the established manufacturers of crystalline solar cells have a great need to upgrade and further develop their existing production lines worldwide and to build up new production capacities. We develop and produce the SpeedPicker at our China site in Suzhou. Like this we are as close as we can get to our customers and their requirements. Furthermore we can offer the high quality standard of Manz to locally competitive conditions."

Technological highlights: fast, precise, contact-free

Manz has equipped the SpeedPicker with various technological highlights, which make the handling system significantly faster, more precise, gentle on the workpiece and therefore more economical.



The Bernoulli gripper which is familiar thanks to the predecessor model introduced in 2010 has now been designed as a double gripper. Solar wafers are thus moved free of contact using the Bernoulli effect. A precision-directed flow of air onto the wafer lifts it in a hovering motion. The contact-free process is extremely gentle on the sensitive and brittle crystalline material, leaves no marks and thus increases the quality of the solar cells.

Lifting and setting down the wafers between the individual process steps is monitored with two cameras which are integrated into the system: one camera measures the position of the wafer, while the other measures the exact position of the carrier pallet so that the wafers can be placed with maximum precision. This results in an improvement of the coating quality in subsequent processes, among other things.

Another highlight of the SpeedPicker is a slider system which can be used either for unloading the wafers from the transport cassettes by vacuum or loading onto them. This prevents abrasion caused by micro-movements of the wafers on the tray, as was common when belts were used for transport.

The SpeedPicker 3.0 from the Manz SAS series offers a maximum throughput of 8,000 wafers per hour. The breakage rate is currently just 0.05 percent. "Our innovative system concept offers manufacturers of crystalline solar cells a significant leap in quality and thus measurably higher profitability," says Marijan Brcina, Vice President of Electronics / cSi Solar at Manz.

For efficient integration of the SpeedPicker in new and existing production lines, the system is built on a standardized machine base. In addition to cost advantages, this also offers a variety of configuration options. The SpeedPicker is thus available in a version for loading/unloading at one equipment side (SAS 421 & SAS 422), for loading/unloading at facing equipment sides (SAS 411 & SAS 412) and for loading/unloading a wet bench.

The SpeedPicker can also optionally be equipped with color inspection for quality control of solar cells and coated wafers. Simple connection to a customer-specific MES (Manufacturing Execution System) is also possible.

Five highlights of the SpeedPicker 3.0 from Manz:

- Double Bernoulli gripper for contact-free handling of crystalline solar cells: no marks on the sensitive and fragile material.
- Integrated measurement technology supports the high-precision lifting and setting down of solar cells between production steps: for minimal breakage rates and higher wafer quality.
- Slider system which retrieves the wafers from the transport cassettes by vacuum and then sets them down again: prevents micro-movements of the wafer on the tray and abrasion as in the case of transport with belts.
- Maximum throughput of up to 8,000 wafers per hour, breakage rate of just 0.05 percent.
- Standardized machine base and various configuration options for efficient integration in new and existing production lines.

Figures:

Image 1:



The SpeedPicker from the Manz SAS series has been fully redesigned and specially developed for handling crystalline silicon wafers in the production of solar cells.



Image 2:



Contact-free high-speed automation with the Bernoulli double gripper.

Image 3:



The innovative vacuum sliders gently load and unload the wafers.



A video about Manz's new SpeedPicker from the SAS series can be found here:

<https://www.manz.com/media/downloads/videos/sas-speedpicker-serie-106/> .

Print resolution photos can be found here

<https://www.manz.com/media/downloads/pictures/?category=60> or we are happy to send upon request.



Company profile:

Manz AG – passion for efficiency

As a globally leading high-tech equipment manufacturer, Manz AG, based in Reutlingen, Germany, is a pioneer of innovative products in fast-growing markets. Founded in 1987, the company has expertise in five technology sectors: automation, laser processing, and measurement technology, as well as wet chemical and roll-to-roll processes. These technologies are deployed and continuously developed by Manz in three strategic business segments: "Electronics," "Solar," and "Energy Storage."

The company has been listed on the stock exchange in Germany since 2006 and currently develops and manufactures in Germany, China, Taiwan, Slovakia, Hungary, and Italy. It also has sales and service branches in the USA and India. Manz AG currently has around 1,700 employees, about half of which are located in Asia. With its claim "passion for efficiency", Manz makes the following service promise to its customers active in dynamic future-oriented industries: offering production equipment with the highest degree of efficiency and innovation. With Manz AG's comprehensive expertise in the development of new production technologies along with the equipment required for this, the company makes a significant contribution to reducing the production costs for end products and making these accessible to a broad range of buyers around the world.

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