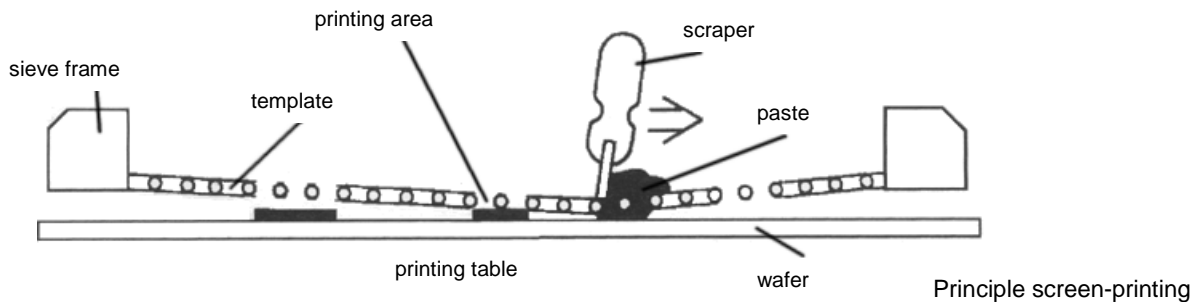


Application report

Project: Dosing aluminum-/ silver-paste at screen-printing for solar wafers
Customer / Branch: Screen-printing-machine builders / solar and photovoltaic industry

Description

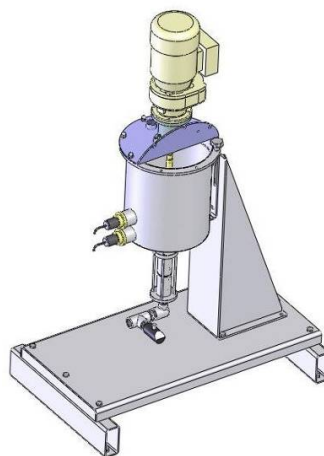
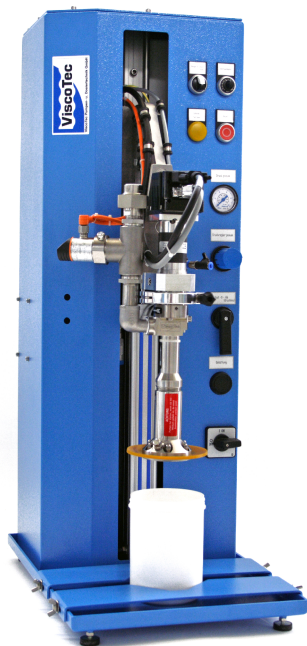
In the production process of solar wafers/panels a basic step is the fixing of the electrical connection lines with the help of screen-printing machines and Al-/Ag-pastes. Until now, the pastes have been dosed often manual and not very accurate. So the paste was distributed over the screen printer by hand.



ViscoTec Solution

With the help of ViscoTec- equipment this process could be designed more process-safe and accurate: An emptying-system (ViscoMT) for bins (size approx. 100 ml until 5l) is responsible for the product supply with Al- and Ag-pastes. These pastes are emptied out of the bins and are then dosed with the help of a ViscoTec RD dispenser onto the screen printing unit (and onto the silicium wafer). After that the screen printing process itself is done. The complete ViscoTec unit consists of the emptying-unit ViscoMT (including a ViscoTec RD dispenser for the emptying process, a follower plate with wiping ring and some hoses and brackets), a hose to the dispenser and the dispenser itself. The dispenser is combined with a ViscoPro-drive. The hose is special designed for flexible and a very large scale of movements.

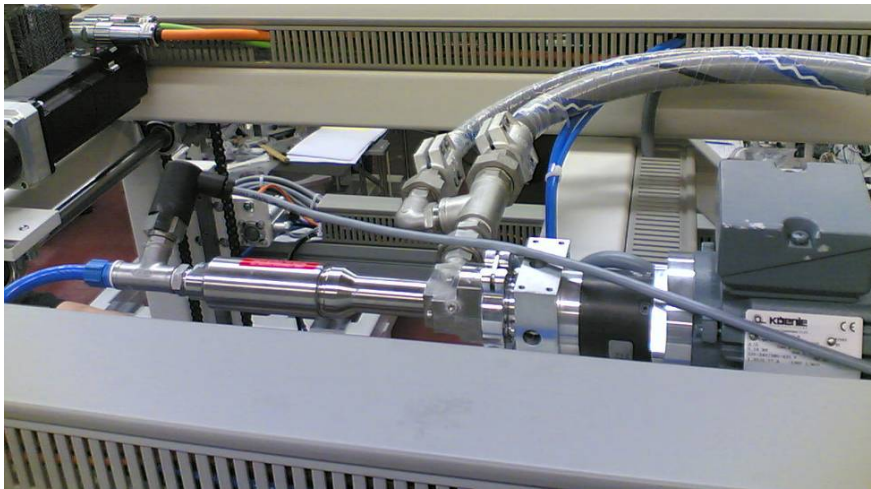
Optionally pastes which are strongly separating could be prepared, agitated and constantly fed to the dosing unit with the help of the ViscoTreat.



Left: ViscoMT - bin emptying-system;
 Middle: ViscoTreat- system for stirring and feeding
 Right: ViscoTec-Dispenser with ViscoPro-drive

ViscoTec Advantages

The big advantage of the ViscoTec unit is that the process of dosing the Al- and Ag-pastes is more process safe and easier for the customer. With an accuracy of +/- 1% an exact defined amount of paste is dosed. Also the repeatability of the dosing is excellent. Another big advantage of ViscoTec systems at this application is that the Al- and Ag-pastes are very abrasive and have a very high solid content (up to 95%). Compared with the life-time of other dosing-technologies the ViscoTec solution provides a very good life-time and a handsome dosing of high viscous and high abrasive fluids. The combination of the dispenser with a ViscoPro-drive makes the whole application very flexible. So the customer gets an improvement in his process regarding process-reliability, repeatability and accuracy. He could trust on ViscoTec equipment, that the pastes are exactly dosed on the wafers. There will be no dripping or threading at the nozzle, because of the possibility of a suck-back of the paste. So through a gentle pumping the customer gets a perfectly dosed solution!



Example of mounted ViscoTec- dispenser

Customer potential

Solar industry: manufacturer of screen printing machines for photovoltaic industry.