

Dispensing cell with automatic component recognition

At the Fakuma 2012, the Sonderhoff group presented for the first time the new dispensing cell Smart – DM 402, developed by Sonderhoff Engineering from Hörbranz, Austria. As an option, it can be equipped with an image recognition system which automatically recognises different component sizes and positions on the transfer conveyor. Due to this, precise foam gasket or potting application of varying part contours and shapes are possible. Customers can save on investment costs for parts' holding fixtures on the mixing and dosing system and no installation times occur.

Due to the optionally equipped automatic part recognition in the dispensing cell **Smart – DM 402**, the fully automatic sealing process with foam gasket and potting products from the **Sonderhoff Chemicals** product range is also possible in the case of a chaotic parts feed. The intelligent image recognition system verifies the arbitrary position of the compo-

The new dispensing cell Smart – DM 402 is optionally equipped with optics for automatic part recognition.



nents on the transfer conveyor and automatically recognises the different component sizes and shapes. In order to capture the image data, the conveyor belt stops for a short period of time and sends the component-specific image data to the three-axis linear robot control. The dosing contour programme for the different component shapes to be processed is adjusted accordingly and the contouring control of the three-axis linear robot is corrected in such a way that the foaming or potting is always carried out precisely at the right place on the component.

The three-axis linear robot can scan components with a traversing range of up to 500x500 mm (width x depth) and up to a parts height of 200 mm at the most. In doing so, the mixing head of the Smart dispensing cell is positioned with a repeat accuracy of ± 0.05 mm above the component so that the sealing material can be precisely applied directly onto the component or in a groove by the mixing head dosing nozzle. A maximum acceleration of 5 m/s² in component radii is possible with the linear robot. The material

used for a polyurethane- or silicone-based foam gasket or potting is processed by the dispensing cell with a consistently high production quality, with a stable material consistency and constant seal dimensions. The dispensing cell can be equipped with the mixing heads **MK 600**, **MK 625** or **MK 650** for micro-seals (up to 2 mm). The discharge performance of the mixing head is between 0.05 and 100.0 g/s. The system can process viscosities of the sealing material between 300 and 2 million mPas and the mixing ratio can be set continuously from 100:1 to 1:100.

Due to its compact design and small size, the dispensing cell can be easily integrated into existing production concepts. With overall dimension of 1,200x1,200x2,300 mm (width x depth x height) only minimal space is required. Sonderhoff says the dosing cell should be interesting for customers from the electronics, telecommunications and IT industry as well as for medical devices manufacturers who need to seal especially small components. In the model of the dispensing cell, equipped with the mixing head MK 650, very small foam gaskets can be applied with a discharge performance of up to 0.1 g/s. In the case of the potting of electronics components, micro-potting with a discharge amount even as low as 0.05 g/s can be realised.

For many plastics processing companies, production orders with small batch sizes but a high variety of components become more and more of a challenge. In this case, fully automatic manufacturing processes often make no sense as the constant change of materials and the frequent replacement and installation of the parts holding fixtures lead to high machine set-up times which increase the costs per unit. Companies have to react to this in a flexible way in order to remain competitive. However, a high variety and constantly changing component sizes are no problem for the dispensing cell with its optical component recognition, says Sonderhoff. On the contrary, with the Smart – DM 402 system no machine set-up times occur for a high variety of components in one production order and thus the costs per unit decrease.



The optics in the new dispensing cell automatically recognises different component sizes and shapes despite arbitrary position on the transfer conveyor.