Even More Precise, Even More Efficient

Swiss manufacturer Posalux presents new models and an expanded series as world premiere at productronica 2015

Swiss Posalux has an outstanding reputation among production machines that stand for the highest precision in PCB production on the market. An unprecedented machine was put on the market in 2012 with the ULTRASPEED MONO: it offers drilling and milling in one station, on a small "footprint", and at great precision. This machine has already been a first sign of the expanded alignment of the system supplier, intended for companies working in small to medium series and prototype production. Now, three years later, the company is marketing a further-developed, newly designed and optically revised version of the ULTRASPEED MONO, expanding the new model series with the ULTRASPEED TRIO for even more efficient and precise work at 3 stations in one machine. It will be ready in time for the trade fair. The ULTRASPEED DUO is to follow in 2016. Posalux is presenting its novelties in the new "look" at its own stand at the productronica 2015 in Munich for the first time from 10 to 13 November.

With the ULTRASPEED MONO, the Swiss company had developed a machine optimized for small series and prototype development in 2012. In the years before that, its developers mostly focused on machines for large-series production. Their efforts were now increasingly also aligned with the European and American markets, with the many operations for the production of small series, prototypes to medium-sized series, and the further development of the MONO. A high own standard was clearly formed in this. Now, Posalux found that it was time to take its own standard and range another step.

Posalux produces precise and fast drilling and milling machines. Decades of experience with the Swiss clockmaking industry and the manufacturer of highly precise micro-mechanics have supported and characterized the development. In addition to the speed of the work processes, they always worked to improve precision and adjust to the continually changing market requirements. Some time ago, the systems already managed an acceptably high frequency at 900 strokes/minute. The newer drilling units increased the frequency by approximately 33% to 1,200 strokes/minute. The tolerance in precision was reduced down to ±15 µm in the last few years.

Duplication of the working head numbers is one of the great novelties in the new series. This "combined" equipment gives every station two different highly precise spindles. The division of the spindle types among the drilling heads can be chosen freely – twice drilling (micro-drilling of <0.1 mm and large holes up to 6.35 mm), two times milling (for FR4 and IMS) or a combination with drilling and milling. This way, both options are available: quickly with a low torque or slowly with a higher torque. The machines can be optimally adjusted to the needs of production. Drilling and milling at one station – now offered by MONO and TRIO.

A new generation of pressure pads has been developed to safely process the PCB boards. The IPF (Interchangeable Pressure Foot) further increased the stability and reliability of the system. A new IPF version for drilling and milling on the same
spindle has been developed. Switching from the drilling insert to the milling blank insert is possible with this novelty, naturally enormously increasing the system's flexibility. This is unique in the industry at this time. Specifically in the combo machines, i.e. with drilling and milling options in one of the drilling heads, this version is already in high demand. It is available for MONO, DUO and TRIO. High-speed drilling of micro-vias can be perfectly combined with more powerful milling or large holes. At the same time, a new drilling-milling spindle has been developed that will work in the revolutions range of 10,000 to 140,000 turns per minute.

A special version of the TRIO is offered: a three-spindle machine with three individually driven stations. Each station has its own spindle axis and its own table axis. This is needed for highly accurate drilling and milling. Differences in offset (twisting/ expansion) from panel to panel are no longer relevant thanks to the visual measurement with a camera. Every single panel can be corrected on mutually independent stations.

Individual panels in an order usually still have some differences. The new system presents a workable solution for the new market requirements in the sense of accuracy. Until now, only one panel had been milled per station, while the others were standing still to precisely get the adjustment of the single panel. The machines were run in mono operation and their capacities were not utilized. Now, all spindles can run at the same time, with tolerances being complied with consistently. It means an immense increase of productiveness.

Further developments are provided for larger systems (5 or 6 stations). The drilling head newly developed for the mono is adapted now as compared to the predecessor version. The new compact build dispenses with air-bearing spindles. Spindle and Z-drive are now placed on top of each other. The machine basis has been redeveloped accordingly for improved stiffness, stability, higher accuracy and higher productivity.

In the new systems, a new generation of axis supports are used as well. Paired with the software control developed by Posalux in-house, the tools can be guided on the x-, y- and z-axes noticeably more accurately.

The ULTRASPEED family also offers larger-volume machines for large-series production. However, the MONO, TRIO and the DUO series, available from 2016, strengthen Posalux’ market position in prototype, small-series and medium-series production. The company will present this global novelty at productronica in Munich from 10 to 13 November. The Swiss engineer will present its products in hall B1, stand 250. The impression is much stronger when experienced first-hand.

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