

Indispensable: Use of lasers for depaneling

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Due to the continuing trend towards miniaturization and ever greater packing densities in the PCB sector, precision laser technology has become the standard technology for depaneling in recent years. At SMT in Nuremberg, LPKF Laser & Electronics will be demonstrating why many companies now rely exclusively on laser systems such as LPKF MicroLine - and thus save resources and improve yields.

Compared to the beginnings of laser technology in depaneling, modern laser systems nowadays operate at a very high speed. Especially the new LPKF MicroLine 2127 system with the most powerful laser source in the series reduces the pure cutting time by up to 50% and thus also supports very high cycle times of SMT lines.

There are many other aspects in favour of laser technology for PCB manufacturers. Especially for high-quality printed circuit boards with high quality requirements, many OEMs now prescribe laser technology for depaneling. Because where mechanical systems reach their limits - i.e. with high packing densities, the finest conductor paths even in the edge areas and flexible materials - the laser demonstrates its technological inherent advantages and thus ensures the highest quality, efficient use of materials and minimal handling time.

The laser operates contact-free, without wear. It does not generate any heat or mechanical stress except at the desired location. Since the forces affecting the material are thus reduced to a minimum with laser technology, the good part rate rises to almost 100%.

PCB manufacturers achieve a large net benefit area, for example, when using machines from the LPKF MicroLine series. The powerful laser separates and cuts unassembled as well as single or double-sided SMD-assembled printed circuit boards precisely and gently. The laser creates any - and sometimes very complex - structures with a cut of only a minimum width. LPKF MicroLine systems work with virtually no dust generation - and much more precisely than conventional tools such as saws, milling or punching. The dielectric properties of the material are not affected.

The systems of the MicroLine series ensure clean, burr-free cuts in FR4,

FR5, CEM materials, ceramics, polyimides, RF materials and other printed circuit board substrates. MicroLine systems integrate seamlessly into existing Manufacturing Execution Systems (MES) through suitable interfaces and enable tracking & tracing for production runs. Reliable traceability is a particularly important point for safety-relevant applications.

Figures:

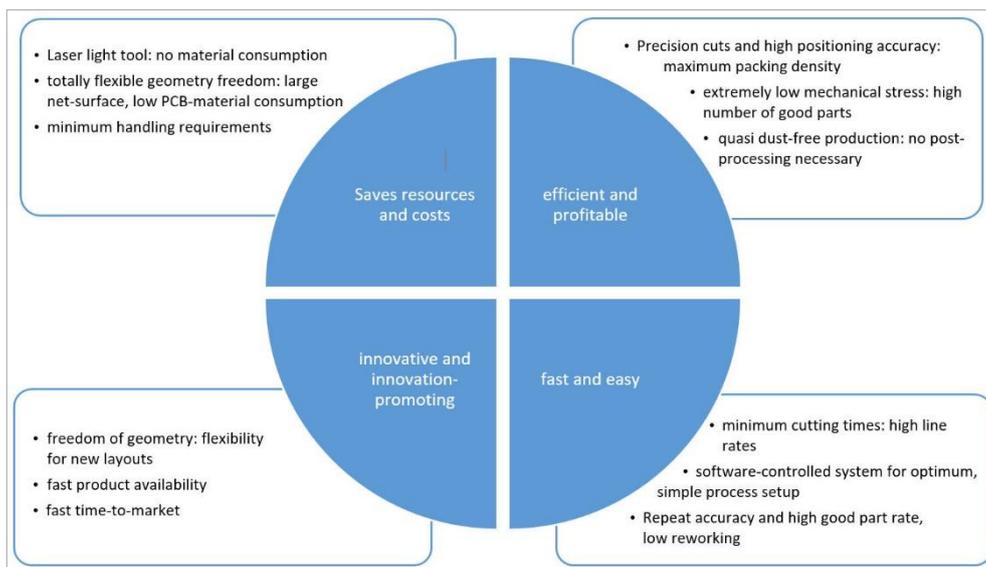


Fig. 1: In a nutshell: The advantages of the laser depaneling process



Fig. 2: A new powerful laser in the LPKF MicroLine 2000 Ci laser system ensures short cutting times and particularly effective separation of printed circuit boards.

About LPKF

LPKF Laser & Electronics AG manufactures machines and laser systems used in electronics fabrication, medical technology, the automotive sector, and the production of solar cells. Around 20 percent of the workforce is engaged in research and development.