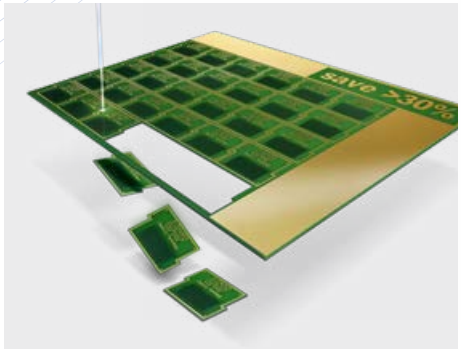
Redefining the Economics of Laser Depaneling

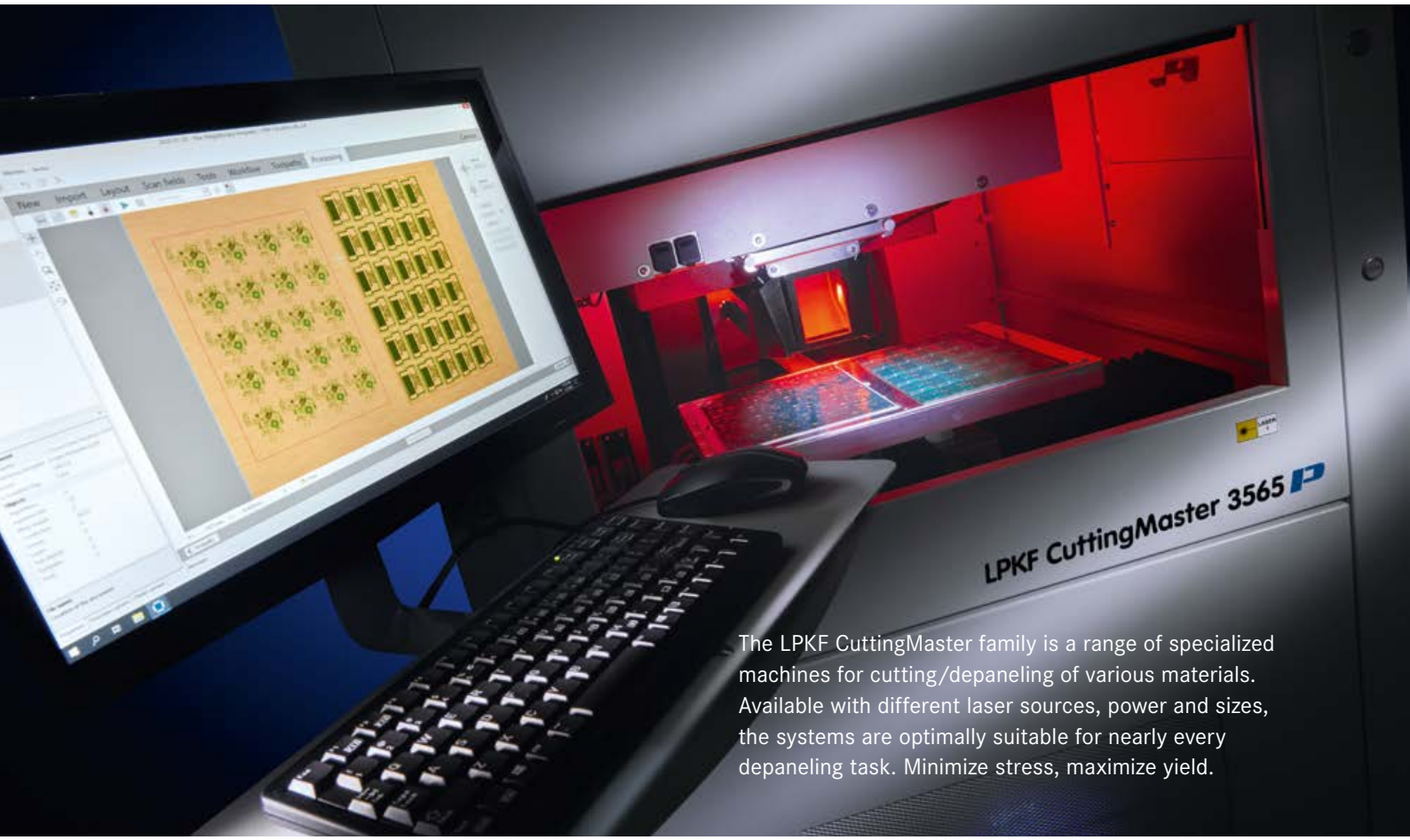
LPKF CuttingMaster



LPKF
Laser & Electronics

Benefits for Depaneling

Outstanding Precision, High Performance, Best Cutting Quality



The LPKF CuttingMaster family is a range of specialized machines for cutting/depaneling of various materials. Available with different laser sources, power and sizes, the systems are optimally suitable for nearly every depaneling task. Minimize stress, maximize yield.

Accurate: The synergy of high-quality hardware and specially developed, technically perfected software ensures precision and high production throughput.

Cost-efficient: By using CuttingMaster, you will get highest CleanCut quality laser cutting in the price range of conventional depaneling processes.

Clean: Throughout the entire process: Application-specific configuration of the laser process guarantees clean cutting edges; and the effective exhaust unit ensures that the surfaces will stay contamination free.

Reliable: The LPKF technologies in the CuttingMaster Systems are proven for highly-demanding industrial sectors like automotive, medical technology, and consumer electronics, and they are suitable for 24/7 production.

Versatile: Materials ranging from rigid to flexible may be processed; different handling versions with fixture or vacuum table solutions are available – whether as a standalone or inline solution.

Fast: Continuous process optimization and a high level of machine performance ensure fast processing.

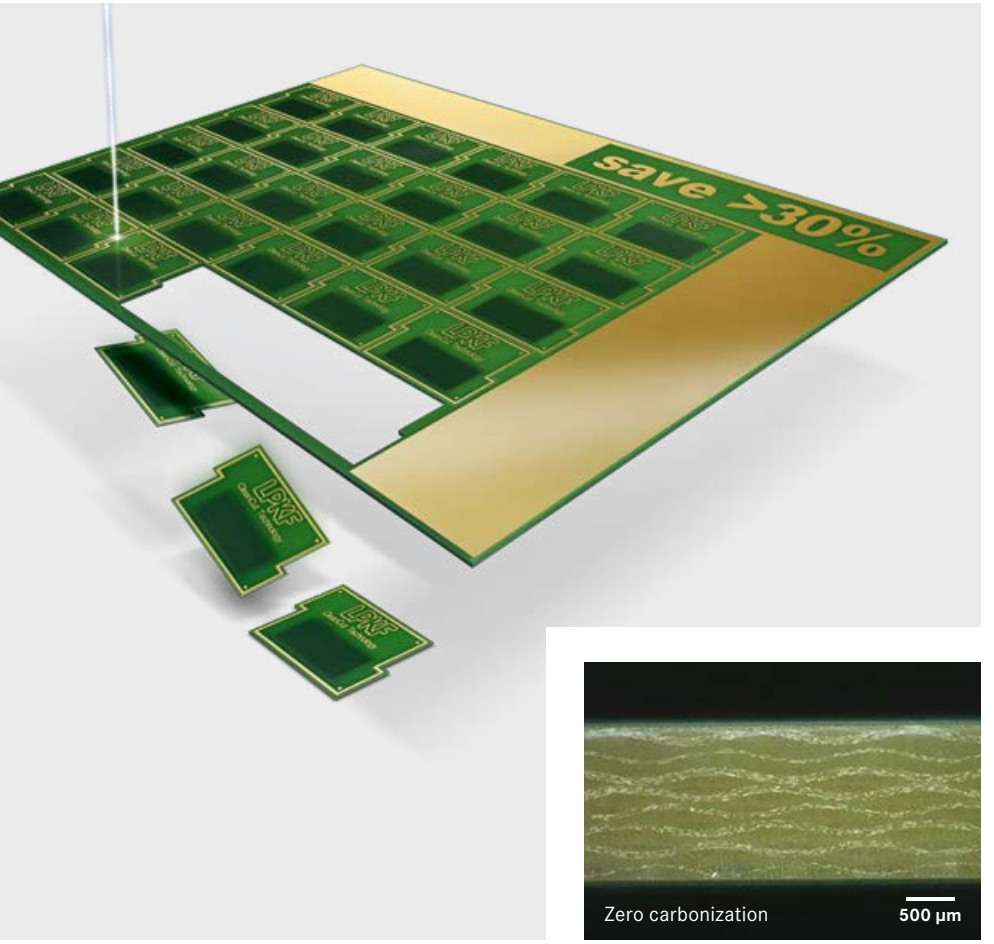
Automated: The grade of automation of the manufacturing process may be chosen by request.

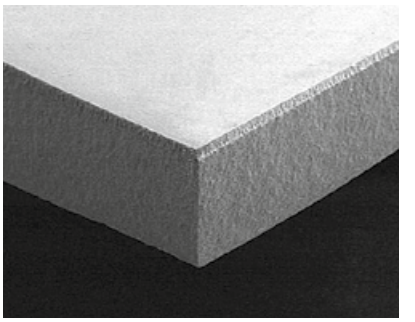
Material Saving: Stress-free, non-contact material processing and cutting channels with only few µm enable a more efficient use of materials.

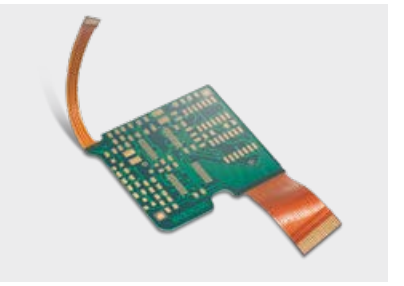
Optimum Service: Worldwide premium customer support.

LPKF CleanCut Laser Technology

Stress-Free, Clean Cutting of Rigid and Flexible PCBs







Why Laser Depaneling?
Laser depaneling has numerous advantages compared to conventional depaneling processes: Thanks to contactless processing, it is a stress-free method for the workpiece. The surrounding material is not affected, and cutting edges can be made directly next to components. This increases the packing density and saves material, especially in the case of full cuts.

The laser produces very narrow cutting channels – with extreme precision. It can process a wide variety of flexible and rigid materials. The digital, software-based and laser-beam-guided process allows for a largely free geometry of the cuts.

Furthermore, the laser – a tool that uses light – has no wear. This saves on costs for consumables and conversion times. LPKF laser systems are designed for 24/7 production. They are perfectly suited to sensitive applications such as those in medical technology, the automotive sector, and consumer electronics.

The cuts produced using the LPKF CleanCut method are impressive because of their outstanding precision and technical cleanliness. Milling dust, carbonization or other contamination is a thing of the past. The result: maximum reliability of the PCBs produced.

LPKF CuttingMaster Systems

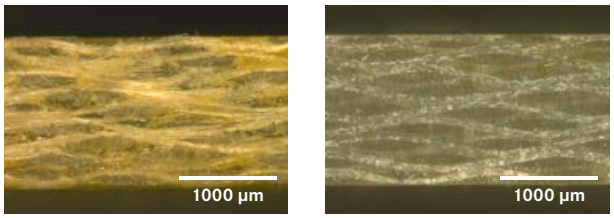
The Optimum Machine for Every Depaneling Application

LPKF CuttingMaster 2000 – The Most Cost-Effective Laser Depaneling System

The CuttingMaster Series 2000 is characterized by a very compact footprint to save space on the production floor. Available with CleanCut Technology, which guarantees technically clean cutting edges.

The CuttingMaster 2000 series is considered to be a high-throughput workhorse at a very reasonable price. LPKF CuttingMaster levels-out the former cost advantage that mechanical routers used to have. Using these LPKF Systems for depaneling tasks, the result is superior quality at a comparable investment to mechanical methods.

- Optimized price-performance ratio
- CleanCut Technology
- Compact system



Cut edges of milled (left) and laser-cut (right) FR4 material. Clearly visible: After the milling process, the edge shows open structures with chipping; laser cutting produces a closed surface.

LPKF CuttingMaster	2000 P	2000 Ci
Max. working area (X x Y x Z)	350 mm x 350 mm x 11 mm	350 mm x 250 mm x 11 mm
Positioning accuracy	± 25 µm	
Diameter of focused laser beam	< 20 µm	
System dimensions (W x H x D)	875 mm x 1510 mm x 1125 mm*	
Weight	450 kg	
Optional features	PinTable, production fixture, MES connection, SMEMA interface	

* Height incl. status light: 2070 mm

Laser power	Wavelength	Pulse duration	2000 series	CleanCut
15 W	355 nm (UV)	nano second	2115	–
27 W	355 nm (UV)	nano second	2127	•
32 W	532 nm (green)	nano second	2232	•

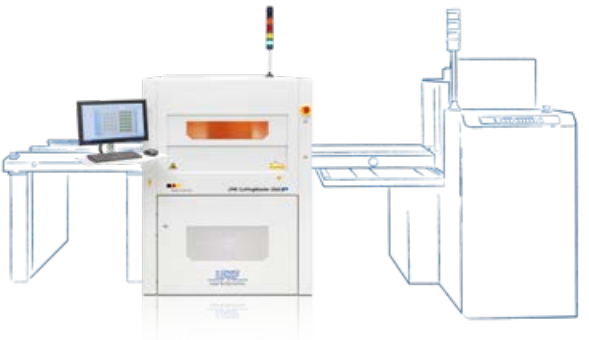
LPKF CuttingMaster 3000 – The Most Precise Laser Depaneling System

The CuttingMaster 3000 series systems are equipped with linear drives. This ensures very high positioning accuracy and thus better performance. The working range is larger compared to the 2000 series.

The ability to integrate a wide range of different laser sources with different wavelengths and pulse durations in the nano and picosecond range allows systems for very different applications and materials to be used.

The CuttingMaster 3000 can also be used for drilling applications. The sturdy granite table of this series guarantees dependable precision.

- Larger working area
- Highest accuracy
- CleanCut Technology
- Flexible system



Integration into production lines: CuttingMaster Ci versions

LPKF CuttingMaster	3000 P	3000 Ci
Max. working area (X x Y x Z)	500 mm x 350 mm x 11 mm	460 mm x 305 mm x 11 mm
Positioning accuracy	± 20 µm	
Diameter of focused laser beam	< 20 µm	
System dimensions (W x H x D)	1050 mm x 1500 mm x 2000 mm*	
Weight	1300 kg	
Optional features	PinTable, production fixture, MES connection, SMEMA interface	

* Height incl. status light: 2120 mm

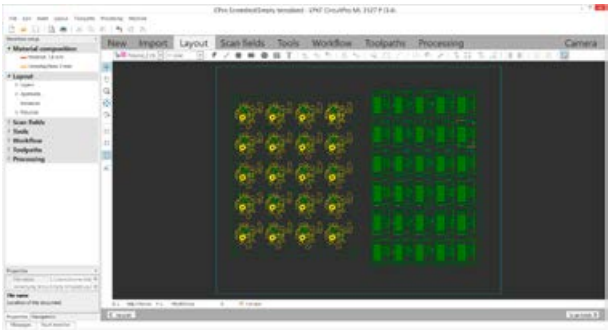
Laser power	Wavelength	Pulse duration	3000 series	CleanCut
27 W	355 nm (UV)	nano second	3127	•
36 W	532 nm (green)	nano second	3236	•
65 W	532 nm (green)	pico second	3565	•

Increase the Value of your Products by Working with LPKF Systems

We are committed to ensuring that our laser systems produce the best possible results for you. Therefore, we do everything we can to make the machines as ideal and easy-to-operate as possible. Our engineers develop optimum machine software with all the features you will need for a smooth production operation in your factory. You can reach us anytime if you require training, maintenance, or other service options. Process your depaneling tasks with LPKF hardware, software, and services: This will guarantee that your products are as perfect and reliable as possible.

LPKF Software

All CuttingMaster systems come with powerful system software. It is designed to be simple to use, perfectly matched to the hardware, and compatible with all standard programs used in PCB production. It precisely processes the data required by circuit board manufacturers and guides the user through each step of the manufacturing process.



Benefits of CircuitPro Software:

- Individualized MES connection
- Multi-fiducial detection
- (Bad) board recognition
- HERMES standard and SMEMA interfaces
- Traceability (laser marking)
- Code reading and writing

LPKF Service

LPKF is renowned for its worldwide leadership in designing easy-to-use, world-class laser products specifically tailored to customer needs. From this leadership vantage point, LPKF is uniquely able to provide you with worldwide premium customer support.

We offer technical customer service, installation, and training if requested and support you when optimizing your processes.

You can always rely on our support, which will continue to serve you for years to come. We therefore offer special service packages – Basic, Classic, Premium – designed to meet your requirements.

LPKF Service & Support

LPKF provides worldwide premium customer support. Learn more:
www.lpkf.com/support

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LPKF AG, 10102565-200720-EN