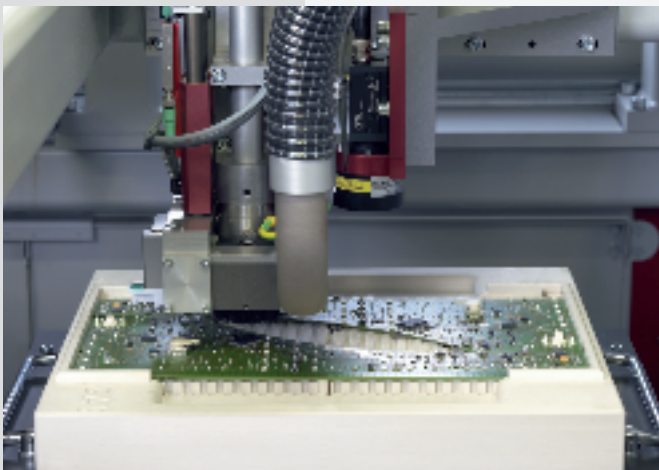


GAS Laser Depanelling Technology



Intelligence in Motion  
– fast and precise

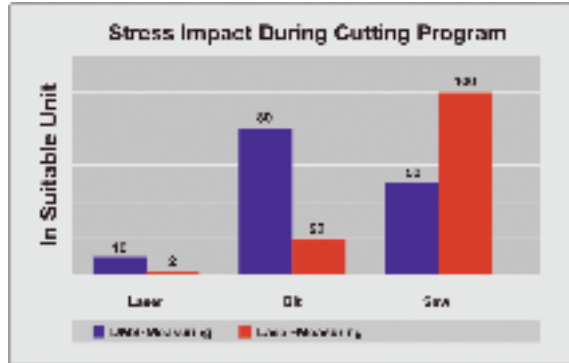
# GAS – SAR-1400-L Depanelling System

## Stress-free cutting with state-of-the-art laser technology

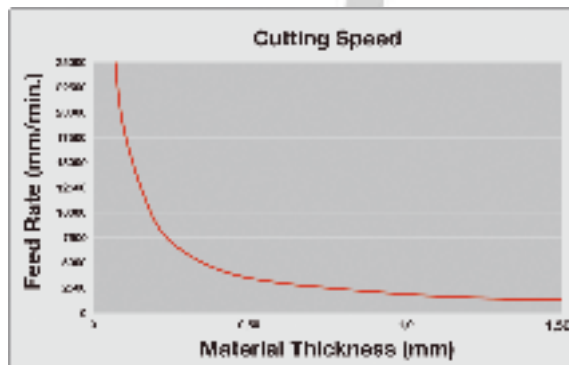
As a result of rising miniaturization and the use of supersensitive components, a growing demand for dust- and stress-free detachment of the PCBs out of the multi panels can be observed. With the new laser depanelling method, GAS offers an ideal solution for this problem.

### Advantages of laser depanelling:

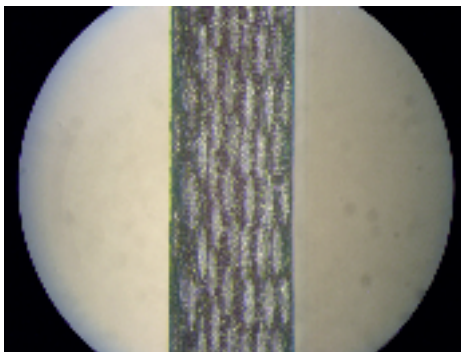
- Stress-free detachment by means of a contactless cutting process
- Dust-free environment
- Clean and smooth cutting edges, as no fiber glass remains are produced
- High contour accuracy
- High availability due to short set-up times
- Low cost for production equipment
- Low material waste



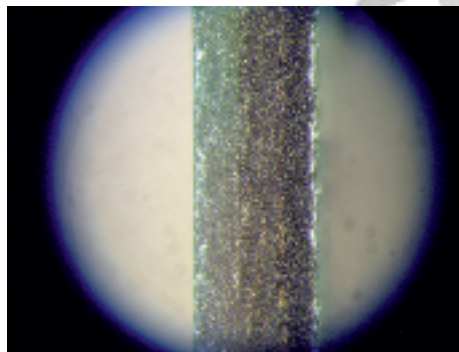
Two different stress measuring methods are done: The conventional DMS measurement (measuring the bending of the PCB) and the laser measurement (measuring the movement). In both procedures, laser depanelling scores very well.



Especially with thin material, high speeds are achieved.



Separation surface, cut by milling bit: The remains of fiber glass are clearly visible.



Separation surface (V-cut), cut by laser: Very clean and smooth cutting edge.



Detachment by laser.

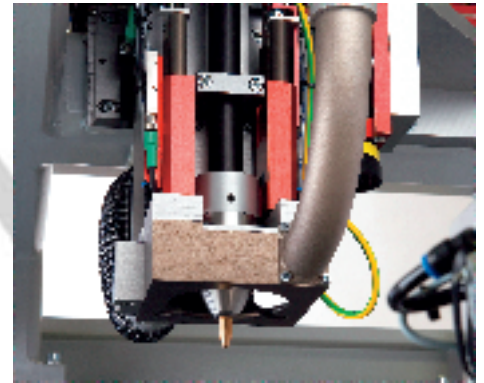
## Laser cutting by GAS – A round process

Additionally to the known advantages of the laser technology, the GAS SAR-1400-L system is characterised by the following features:

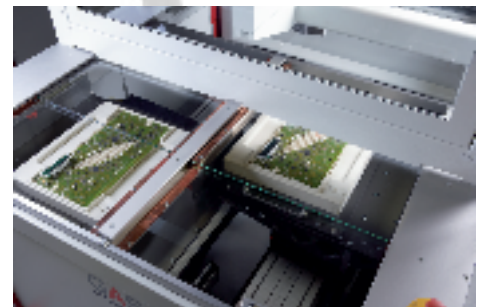
- Low cost through simple production of the individual workpiece holder
- High productivity using through:
  - Low cycle times thanks to linear motor actuators
  - Cycle time for change of panel < 2s
  - Twin shuttle infeed
- Optimal dust exhaust technology
- Large work space



*Excellent cutting accuracy thanks to high-precision linear motor actuators for panel infeed and panel positioning.*



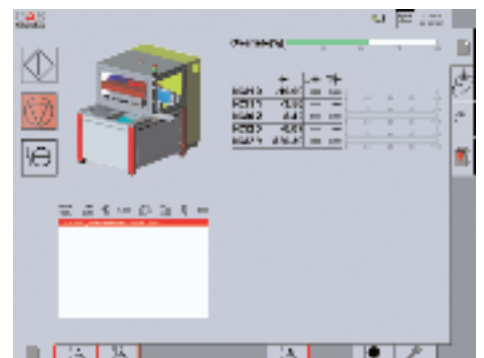
*The stationary laser guarantees a cut which is consistently accurate.*



*The newly developed workpiece holder offers to the user the following benefits:*

- Low cost
- Optimal absorption of gas and debris thanks to the special structure of the workpiece holder designed by GAS.

*The SAR-1400-Laser system is equipped with an intelligent control center having a standard user interface and can be easily operated via symbols in accordance with DIN standard.*



# GAS – SAR-1400-Laser Depanelling System

## Standard Machine Description

- Rigid, low-vibration machine frame with metal sheeting
- Compact system with integrated, closed electric switch cabinet
- Dual panel handling by means of linear motor technology
- Vertical linear motor axis for positioning of the cutting head
- Twin shuttle PCB infeed and outfeed
- Water cooled laser system for cutting process
- PC controller with Windows XP operating system, continuous path control, programming of milling steps in accordance with DIN, as well as swivel-mounted touch screen 15"
- Signal indication

## Technical Data

### Machine dimensions

- Length 1440 mm
- Width 2152 mm
- Height 1850 mm + appr. 400 mm (exhaust)
- Operation height 900 mm
- Weight 2000 kg

### Speed

- X, Y: linear motor axes 2000 mm/s
- Z: linear motor axis 1000 mm/s

### Accuracy

- Repeat accuracy  $\pm 0.02$  mm
- Positioning accuracy  $\pm 0.02$  mm
- Cutting accuracy  $\pm 0.05$  mm with vision system  
 $\pm 0.10$  mm without vision syst.

### Work space and PCB characteristics

- Max. work space X, Y 342 mm x 395 mm
- Max. panel size X, Y 350 mm x 400 mm
- PCB thickness 0.5 to 2 mm
- Component height max. top side: 20 mm  
max. bottom side: 50 mm  
or customized

### Availability and CE standard

- Technical availability  $\geq 98$  %
- Machine capability study
- CE type

### Noise level

- Measured at a distance of 1.2 m from the machine  $\leq 72$  db (A)

### Exhaust system

- External
- Reservoir filter system
- Vacuum indicator

### Panel infeed

- Change cycle  $< 2$  sec.
- Standard size per workpiece holder 405 mm x 510 mm

### System control

- IPC control unit with DIN-programming, continuous path control
- Windows XP operating system
- 15" TFT swivel-mounted touch screen

### Power supply

- Voltage 400 V / 50 Hz / 63 A
- Compressed air 0.6 mPa (6 bar), oil-free, filtered and dry
- Ambient temperature  $+ 18^{\circ}$  C to  $+ 30^{\circ}$  C
- Relative air humidity 15 % – 80 %

### Laser source

- Type of laser CO<sub>2</sub>-Laser
- Laser protection class 1

## Options

- External dust exhaust
- Water cooling system
- Vision system for position recognition of PCB, teach-in operation and barcode reading system
- Manual scanner
- Basic untreated or complete customized worktables
- ESD protective casing
- Remote servicing
- CAD data processing
- GAS standard detection of good or bad parts
- Production data processing system with traceability functions

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