



THE NEW

CONCEPT

OF MAPE

DRILLING &

ROUTING

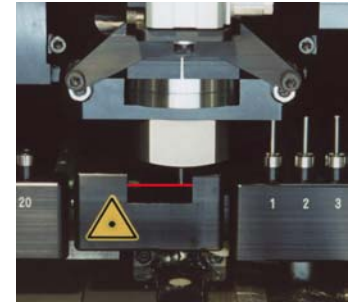
MACHINES

Production speed:

The new Mape machine is, even by world standards, simply the most productive 2-spindle drilling machine on the market. Production output exceeds 100.000 holes per hour for a typical drilling job. Compare this performance with the **true** output of a conventional 4- or 5-spindle machine, and you will realize, why the new Mape range of high-speed machines have become one of the most popular driller/routers among modern PCB-manufacturers.

The design:

The technologies used in the new Mape design are advanced, but with a sound, no-nonsense approach. The machines have an ultra stable 3-foot design, based on a unique granite/steel composite construction, that does not demand precision levelling or alignment. Due to the incredible mechanical rigidity of the machine, it can be moved around on a conventional pallet-truck and placed exactly where required, without having to worry about changes in the machine's accuracy. User-friendliness and simplicity in operation are still the corner-stones of a perfect Mape design.



The new LASER measuring system.

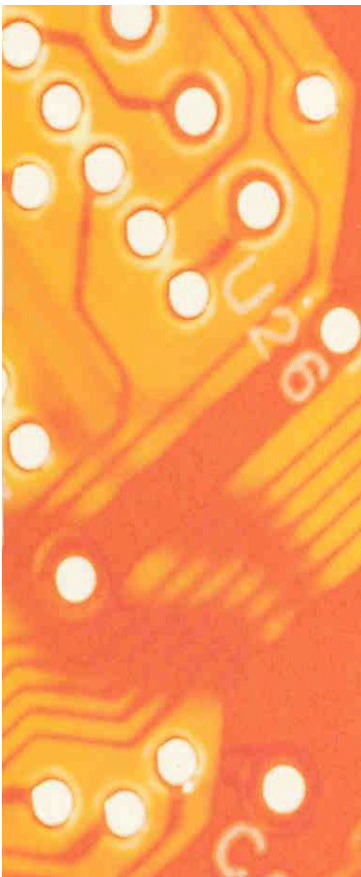
Laser system:

The new laser monitoring system measures the dimensions of each tool as it is changed, thereby preventing costly operator errors. This is vital for ISO9000 quality assured production. The system also gives indication of broken tools and excessive run out errors.

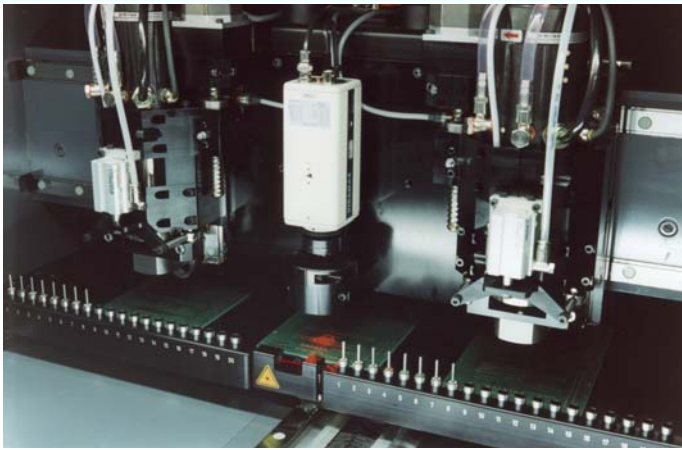
Value for money:

Bottom line is, that the new Mape machine produces quality holes at the lowest costs per hole in the industry. We shall be happy to prove this.

In addition, history has shown that Mape machines have the lowest cost of ownership in the worldmarket.



MAPE CNC-2000XL



SPECIFICATIONS, CNC 2000 XL :

WORKTABLE SIZE: 675x960mm.
 WORKING AREA: 2x630x460mm.
 MAX PANEL HEIGHT: 20mm.
 X-TRAVEL: 650mm.
 Y-TRAVEL: 470mm.
 Z-TRAVEL: 45mm.
 HIT-RATE, TYP. (1): 100000 holes/hour
 AXIS SPEED: UP TO 24 M/min.
 ACCELERATION: UP TO 20 M/S².
 DECELERATION: 30 M/S².
 SPINDLE SPEED (2): 0-180.000 RPM.
 SPINDLE DRIVE: 2.2 KVA.
 SPINDLE COOLING: 450KCal.
 LASER RESOLUTION: +/-0.001mm
 POS. ACCURACY: +/-0.010mm.
 HOLE ACCURACY: +/-0.015mm.

TOOLING SYSTEM (3): Ø3.0mm.
 CLAMPING FOOT, ADJ: 1-8KG.
 COLLET DIAMETER: Ø1/8" OR 3mm.

DATA ENTRY: SERIAL RS-232.
 DUST EXTRACTION: software contr.
 DRILL-RANGE: (2) Ø 0.1-6.40mm.
 ROUTER-RANGE (2) Ø 0.8-3.0mm.

TOOL-MAGAZINES: 2x20 TOOLS.
 MONITOR: B/W 9".
 CAMERA: Hi-Res CCD.
 OPTICS MAGNIFIC.: 20X.
 MEMORY CAPACITY: 10.000 blocks.
 BACK UP RETENTION: 10 YEARS.

SHIPPING WEIGHT ca: 3.000 KGS.
 FOOTPRINT W,D,H: 150x150x140cm.

SERVICES: 230VAC SINGLE PHASE,
 16AMPS 50-60Hz.
 AIR: 3L/min @ 6bar.
 TEMP.RANGE: 20°C +/-2°C.

- 1) Real-life value for panels with 5000 holes and 10 tools per job, including panel swop. Max. Hit-rate exceeds 1000H/min.
- 2) Depending on spindle choise.
Air- or ball bearing-spindles and dedicated routing-spindles on request.
- 3) 1/8" or Ø4-6mm on request.

Specification subject to change without notice.

THE NEW DESIGN:

Mape's entirely new axis design and base construction has resulted in a huge increase in torsional stiffness.

Coupled with the compact design and high axis speed, this makes Mape machines outstanding in the fields of high yield drilling and micro-drilling.

The new design offers all the well - known Mape features of simple programming, low maintenance cost and superior engineering:

- * *State-of-the-art laser technology.*
- * *Individual Z-axis controls.*
- * *Adjustable clamping-foot pressure.*
- * *"APSS" speed selection system.*
- * *Detachable clamping foot.*
- * *Software controlled clamping foot.*
- * *Tool magazines w/detectors.*
- * *Ultra Large panel-size capacity.*
- * *On-Board programming facility.*
- * *Industry leading routing software.*
- * *Cool-light CCD-video system.*
- * *Increased memory capacity.*
- * *High speed design: +150% output.*
- * *High speed serial communication.*
- * *"Machine Doctor" diagnostics.*
- * *Best value for money in industry.*
- * *High productivity.*
- * *Versatility and flexibility.*
- * *Lasting accuracy.*
- * *Lasting performance.*
- * *High speed Microhole production.*
- * *Minimum tool change time.*
- * *No-nonsens design, so easy to use.*
- * *Ultra low energy consumption.*

LASER MEASURING SYSTEM.

The integration of a completely new laser measuring system effectively prevents the use of incorrect or defective tools in production.

The laser-system automatically measures the tool-diameter and spindle run-out errors within user-defined limits.

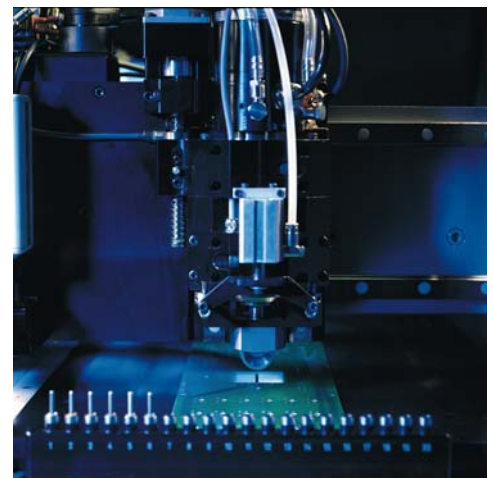
The tool-length is also measured in order to prevent damage to the machine's worktable and to ensure proper drilling results.

The laser system can also be manually operated. It is capable of displaying the tool-diameters in microns and the tool-length in increments of 0.01mm.

The laser system incorporates state-of-the-art laser technology with Mape's unique "Auto-Tracking" laserbeam as well as a laser-diagnosis system.

BROKEN TOOL DETECTION:

The laser system also incorporates a broken tool detection feature that supervises the tools during the production sequence.



Spindle mounted on rigid, linear movement system.

The new tool-magazines makes it possible to nominate a number of tool-pods for standard drill-sizes, to form a user-defined tool-management system. The remaining pods are then available for job-specific tools, such as micro-drills, routers or large drills. The result is, that the turn-around time for new jobs is drastically reduced.



Flexibility: Mape machines can be run in parallel for mass-production or individually for low volume, flexible production.

Micronix-Mape PCB Equipment, Bjodstrupvej 28, DK-8270 Hojbjerg, DENMARK. TEL.: ++45 8737 0110 FAX: ++45 87370210.
E-mail: sales@mapemachines.com

MAPE UK Ltd., #12 Union Bridge Mills, Roker Lane, Pudsey, Leeds LS28 9LE, England. TEL: ++44 1132 360 966. FAX: ++44 1132 360 955.