

LENZ
PRECISION TO MOVE

***Automatically Spindle switch over
Perfect drilling and routing***



DRILLING MACHINE
DLG 1+1

DLG 1+1 SERIES

The ideal machine for Microdrilling and routing of PCB's

Hole diameters are getting smaller and smaller, necessitating the need for a dedicated drill spindle – but routing can also be required within the same PCB. All PCB manufacturers recognise this problem.

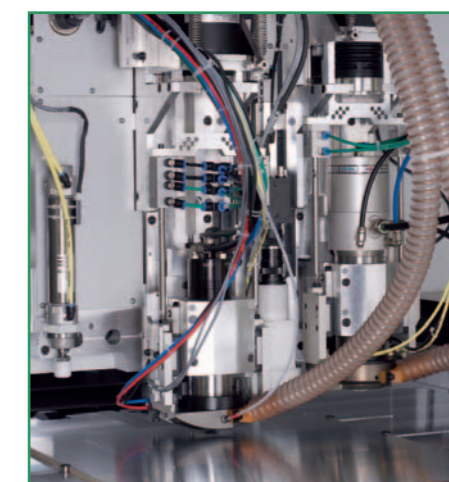
LENZ has the solution – the DLG 1+1. This machine has separate drill and rout spindles, which are selected automatically. This machine is equipped with 2 different spindles. Both spindles work on the PCB; they are switched over automatically from tool requirements in the programme.

The drill spindle is a high-speed air bearing type for drilling micro and medium hole sizes only. The other spindle is a dedicated routing spindle for drilling large holes and routing. Various drilling spindles are available with up to 300.000 rpm. This machine concept is perfectly suited for the optional LENZ multilayer system.



Laser Drill check System

The LENZ Laser measuring system checks each drill bit for diameter, run out and length. These measurements are checked against pre-programmed tolerances. If any of the measurements lay outside the tolerance band, the drill is replaced and a new one selected.

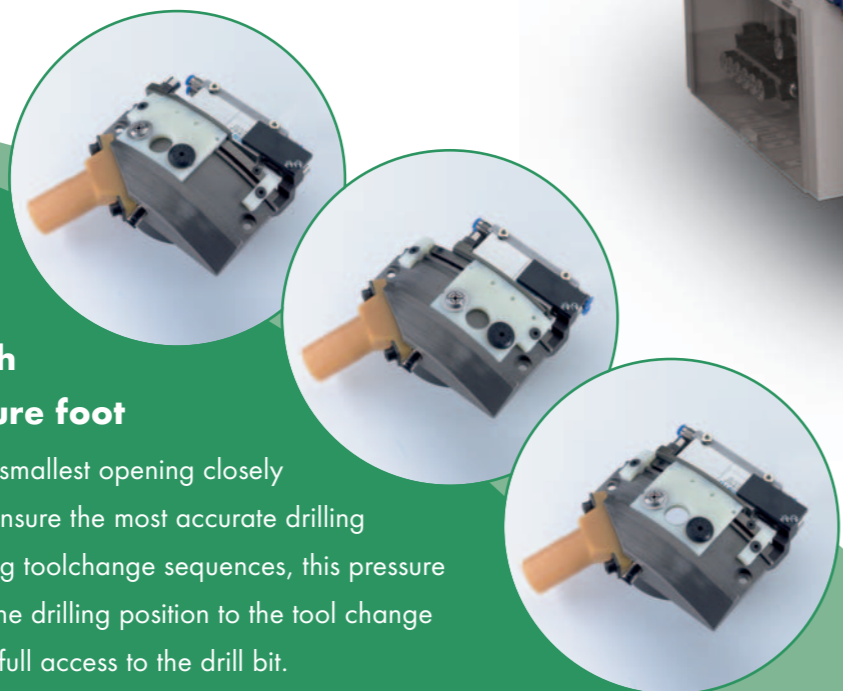


Constant drill breakage monitoring

The drill bit is constantly monitored during the drilling cycle. As soon as the drill bit monitor detects a broken drill the programme is interrupted and the breakage is recorded. The drill is replaced and the drill programme restarts – automatically, without operator intervention.

Microdrilling with swivelling pressure foot

A pressure foot with the smallest opening closely encircles the drill bit to ensure the most accurate drilling of microfine holes. During toolchange sequences, this pressure foot swings away from the drilling position to the tool change position, thus permitting full access to the drill bit.



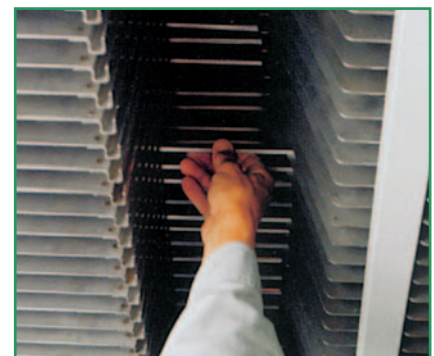
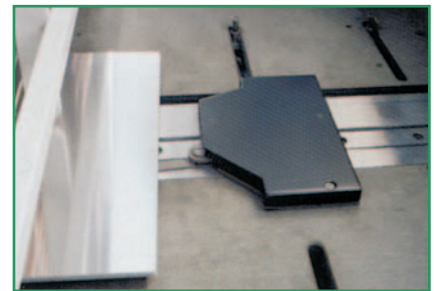
Depth controlled drilling and routing

The need for blind holes is getting higher and higher. For certain applications routed pockets are also needed. To combine this, the drilling spindle can be equipped with contact depth controlled drilling, while the routing spindle has a 2nd measurement system on the pressure foot.



The fully automatic drilling machine with an integrated load and unload system

Optimum machine utilisation with exceptional reliability of operation and improved quality – fully automatic Model DLG from LENZ points the way. The space saving machine loading system operates as a combined unit.



The loading Shuttle...

draws the PCB stack forward into the drilling machine and replaces it back in the magazine upon completion of the programme. Of particular benefit is the fact the LENZ automatic load and unload system can handle stacks of various sizes without adjustment. The system can be used for long production, or series of short runs. The magazine can be loaded and emptied easily, without interrupting the machine operation. The loading shuttle draws the PCB to the drilling machine. Pneumatic clamps centre and lock the tooling pins, while vertical board clamps grip the edges of the stack and hold them firmly to the table.

The magazine holds up to 20 PCB stacks, and is attached to the back of the drilling machine whilst remaining freely accessible.

ERNST LENZ

Maschinenbau GmbH

Wetzlarer Strasse 21
D-35764 Sinn
Germany

Phone (+49) 27 72/94 24-0
Fax (+49) 27 72/94 24 44
Web www.lenz-gmbh.de
Mail lenz@lenz-gmbh.de