

Moisture Drilling System[®]

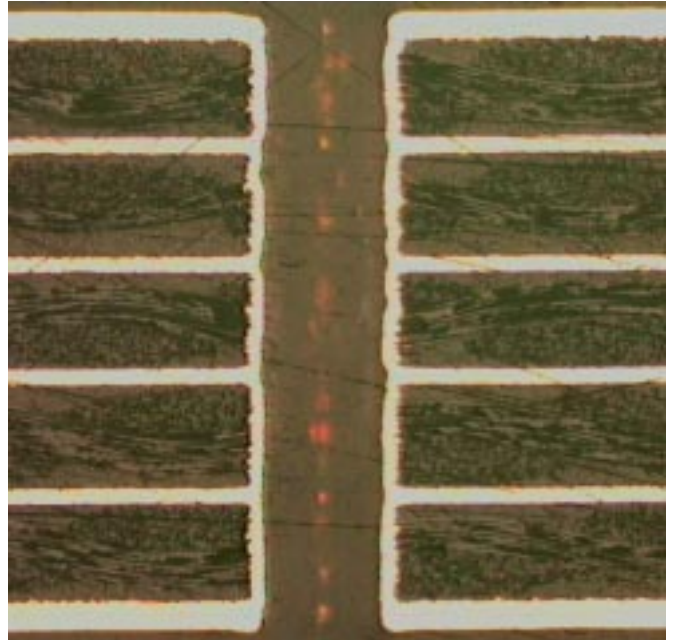
FOR MATERIALS USED AT PCB PRODUCTION

The theory behind moisture machining of solid materials is a long and established principle. By the lowering of stress-frictional forces with the Moisture Drilling System[®], the drilling process of PCB production can run now the way it was intended.

The Moisture Drilling System[®] (MDS) solution principally acts as a coolant and lubricant of the drill bit and surrounding machined area of all PCB base materials, including exotic varieties.

The benefits of reduced drill bit wear is significant improvements in registration and hole wall quality. The solution (*Desmear 9106*) used together with the Moisture Drilling System[®], is water based, i.e. totally rinseable, and will not carry over into the remainder of the PCB manufacturing processes.

Moisture Drilling System[®] may be installed on your existing drilling machines at a very low cost with minimal alteration required. A precise delivery of the 9106 solution to the drill bit is provided only when drilling and managed by the *control box*. Swarf and excess 9106 solution are separated by the in line Cyclone Receiver and clean air is expelled to your existing vacuum system.



Cross section of moisture drilled hole.
6L ML 2 panels in stack, bottom panel.
0,35mm standard drill bit. 8000 hits.



Control box for Moisture Drilling System[®]

DRILLING IN FIBRE GLASS-EPOXY BASED LAMINATES

Following advantages may be achieved by using Moisture Drilling System® in drilling of the fibre glass-epoxy based laminates.

1. Hole wall quality

The "lubricating" chemistry effect gives smooth hole walls and significant reduce nail heading.

2. Drill bit consumption

Consumption of drill bits may be reduced at least to 1/3 of present value by using Moisture Drilling System®.

3. Drill bit wander

Moisture Drilling System® reduce registration deviation to +/- 1 mil.

4. Higher productivity

With moisture drilling the stack height may be increased by up to 100%

5. Entry and back-up material

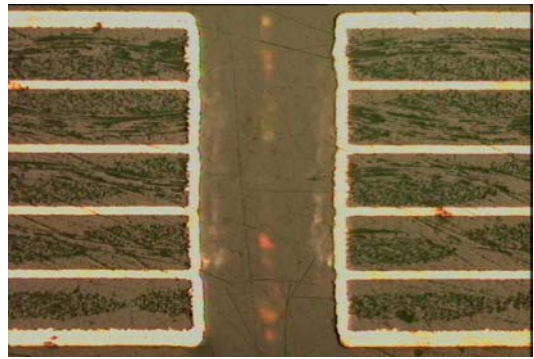
As the consequence of the increased stack height, the consumption of entry and back-up material will be reduced.

6. Dust & environment

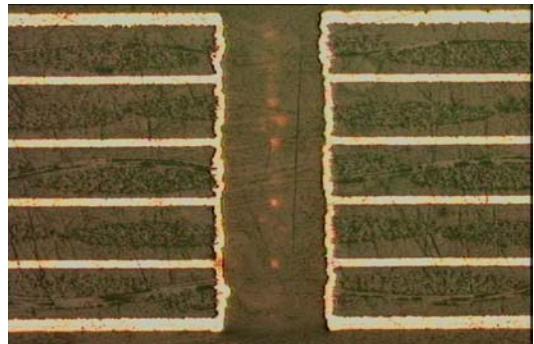
Moisture Drilling System® gives a dust free environment around the drilling machine.

7. Exotic materials

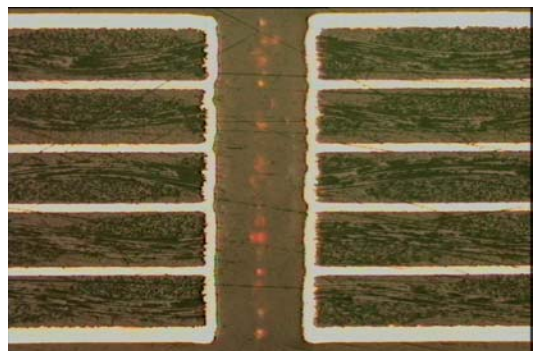
Materials like Teflon, metal core, thermal clad, plexiglass, Lexan, back planes become easier to drill.



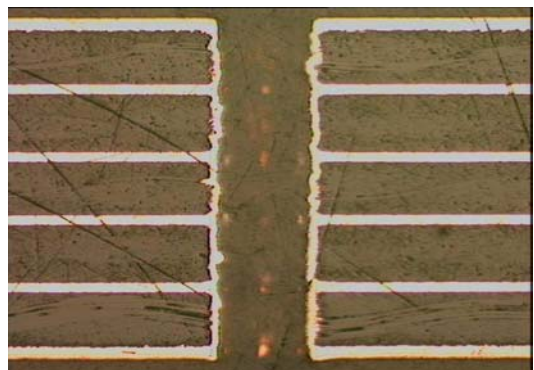
MDS 6L ML 0.35 mm 2000 hits 2 panels in stack, bottom panel



DRY 6L ML 0.35mm 2000 hits 2 panels in stack, bottom panel



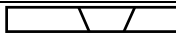
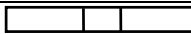
MDS 6L 0.35mm 8000 hits 2 panels in stack, bottom panel



DRY 6L 0.35mm 8000 hits 2 panel in stack, bottom panel

DRILLING IN PLEXIGLASS OR POLYCARBONATES

The following comparisons can be made regarding drilling of electrical test fixtures made of plexiglas or polycarbonates (Lexan).

	Dry drilling	Moisture Drilling System®
Drilling speed/ Infeed	2-4m/min	5-10m/min
Needs for entry material	yes	no
Needs for "peck" drilling of thick plexiglass or polycarbonates	yes	no
Appearance of drilled hole		
Dimension stability affected by heat	yes	no
Wall quality of small holes	poor	very good
Prolonged life of drill bit	no	yes

All the above advantages are field improved.

Reference:

Viking Test Services Ltd
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LIST OF REFERENCES FOR MOISTURE DRILLING SYSTEM®

Company name	Country	Installation year	Use MDS for drilling in	Other
Elektrotryck AB	Sweden	1997	Plexi glass	
Pri-Dana	Denmark	1994	Plexi glass	
Printech Laboratories	UK	1995 1999	Copper/Teflon	Even routing of it
Viking Test Services	UK	1995 1996	Plexi glass	0.3 mm in 5mm plexi
GSPK	UK	1996 1997	FR4	
Lone Star	USA	1996	Plexi glass	
Lone Star	USA	1998	FR4	
Peak Ltd	UK	1997	Plexi glass	
Photomechanical	UK	1997	FR4	
Marlin Lighting	UK	1997	Exotic mater.	
Milton Keynes	UK	1997	FR4, ML	
I.T.E.	UK	1998	FR4	
LABTECH	UK	1998	FR4	
CPL	UK	1998	FR4	
N&R	UK	1998	FR4	
Viasystems	Sweden	1998	Plexi glass, Lexan	
Viasystems	UK	2000	Plexi glass	
LABTECH	UK	2000	FR4	
Coutant Lambda UK	UK	2001	FR4	
Tecpro	UK	2001	FR4	
ITR	Poland	2001	FR4, ML	

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