

Printed circuit board (assembled)

Recommended machines and additional consumables (not included)

CUTTING	Equipment ATM Brillant	Consumables Cut-off wheel: diamond Anti-corrosion coolant
MOUNTING	Equipment Pressure unit	Consumables Cold mounting: KEM 20 KEM 90
GRINDING/ POLISHING	Sample size Ø 40 mm	

Pressure parameters and specimen size

Specimen diameter [mm]	25	30	40	50	60
Divergence in pressure used in the preparation methods	-(5 N...10 N)	-5 N	0	+5 N	+(5 N...10 N)

Notes:

STEP	MEDIUM	H ₂ O	rpm		Single Pressure N	min
Planar grinding	SiC-paper/foil P320 (180) GALAXY green*	H ₂ O	250-300	▶▶ Synchronous Rotation	30	Until plane (slightly before point of interest)
Grinding	SiC-paper/foil P600 (400) GALAXY blue*	H ₂ O	250-300	▶▶ Synchronous Rotation	25	1:00 (until point of interest)
Grinding	SiC-paper/foil P1200 (600) GALAXY yellow*	H ₂ O	250-300	▶▶ Synchronous Rotation	25	1:00 (until point of interest)
Pre-Polishing	BETA	Dia-Complete Poly, 9 µm	120-150	◀▶ Counter Rotation	25	4:00
Polishing	GAMMA	Dia-Complete Poly, 3 µm	120-150	▶▶ Synchronous Rotation	30	4:00
Final polishing	OMEGA	Eposal, 0.06 µm	120-150	◀▶ Counter Rotation	25	1:30 (H ₂ O during final 0:30)

* For printed circuit board with ceramic components

BEGINNERS GUIDE

CUTTING	<ul style="list-style-type: none"> Use suitable cut-off wheels (e.g. diamond wheels) Constant cutting speed max. 0.25 mm/s
MOUNTING	<ul style="list-style-type: none"> Use mounting material with high edge retention Cold mounting with pressure unit/vacuum
GRINDING	<ul style="list-style-type: none"> Start grinding with SiC-paper/foil P320 (GALAXY green) Continue with P600 (GALAXY blue) and P1200 (GALAXY yellow) Thoroughly wash samples and holder under running water after each grinding step
POLISHING	<ul style="list-style-type: none"> Rinse the polishing discs with water and spin dry after use Do not stack discs with different diamond sizes Clean samples, holders and hands under running water before each polishing step Use ethanol and blow dryer to avoid water stains Check after each step under the microscope if polishing marks are of equal size and randomly oriented Rinse the OMEGA disc with water and spin dry after use Use the consumables only for printed circuit boards and not for other materials Rinse the cap of the Eposal bottle after use, put cap back on Use cosmetic tissues to clean possible traces of Eposal after the last polishing step

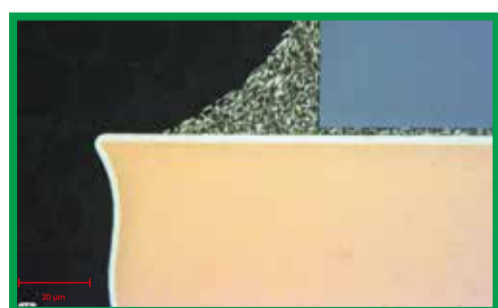
Notes:

SAMPLE MICROGRAPHS

OK Sample polished

20x micrograph of printed circuit board (assembled) after OMEGA polishing

- No traces of scratches
- Clear structure/contour of the different phases



NOK Sample polished

20x micrograph of printed circuit board (assembled) after OMEGA polishing

- Sparse scratches from 0.06 µm Eposal after OMEGA
 - Clean all polishing discs with clean brush under running water
 - Clean sample and sample holder
 - Repeat OMEGA step



Notes: