

NelsonZimmer® 2000 & 3000

Printed Circuit Board Copper Through Hole
Preparation Systems

- Cross-Sectioning Systems for the Printed Wiring Board (PWB) Industry
- Precise Cross-Sectioning of Copper Plated Through-Holes and Via
- High Volume Capacity
- Coupons are Cast Directly in the Accessory
- Touch Pad Controls
- Ability to Interface with Modular Dispensing Systems



BUEHLER

Excellent Results. Easily Repeatable.™

Accuracy & Productivity In One System



Buehler continues to meet requirements of the electronics industry with its NelsonZimmer® System. This system is a complete preparation package for cross-sectioning printed wiring board plated through holes, which incorporates the EcoMet® 300 and AutoMet® 300 grinder-polisher with two different precision accessories.

The NelsonZimmer® 2000 features a PC Met® Precision High Volume Printed Wiring Board Accessory with reproducible accuracy for cross-sectioning of through holes down to 0.008" (200µm) in diameter. This fixture will prepare up to 36 coupons at one time, 1" (25.4mm) long in 6 separate cavities. Six stops, three for grinding and three for polishing, eliminate undercutting which ensures viewing of the through hole center line.

For cross-sectioning microvia through holes down to 0.004" (100µm) in diameter, Buehler offers the NelsonZimmer® 3000 System which includes the EcoMet® 300 and AutoMet® 300 grinder-polisher with a PWB Met™ Small Hole Accessory. This accessory will prepare up to 18 coupons at one time, 1" (25.4mm) long in 6 cavities. Each coupon is pinned separately eliminating any stress caused by pins and proper alignment is ensured for cross-sectioning microvia through holes. Six polycrystalline diamond stops prevent grinding or polishing beyond the target plane.

Both NelsonZimmer® Systems offer high volume preparation while maintaining accuracy required for targeting the center line of a through hole. Calibration is maintained with a dial indicator. Each system comes with the appropri-

ate pin loader and pins. Mounted coupons can be viewed at any time without effecting its alignment. The PWB Met® Sample Extractor is included for removing polished mounts from the PWB Met® Small Hole Accessory without inducing scratches to your finished sample.

Adding one or more PriMet® Modular Dispensing Satellites increases your productivity, provides sample consistency, and maximizes consumable usage.



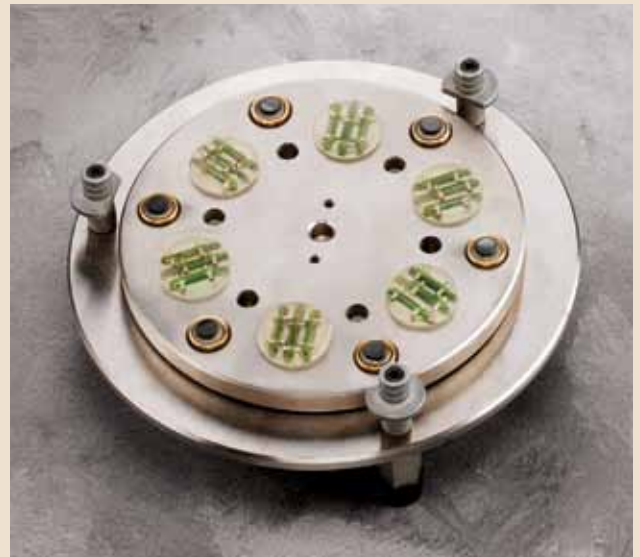
PWB Met™ Router routs out a coupon from a printed wiring board without damaging the plated through-hole.



The precision components of the NelsonZimmer® System are protected by a custom-made wood case.



PWB Met™ Digital Alignment Drill aligns and drills holes for mounting pins.



Mounted samples in the PWB Met™ Small Hole Accessory.



PWB Met™ Extractor (60-5185) removes polished samples from the PWB Met™ Small Hole Accessory.



Printed wiring board coupons ready for molding compound in the PWB Met™ Small Hole Accessory.

Specifications

60-9095 NelsonZimmer® 2000 System is for precise, high volume cross-sectioning of printed wiring board through-holes to $\geq 0.008''$ (200 μ m) in diameter. It includes the EcoMet® 300 Grinder-Polisher which features a 12" (305mm) platen, variable speed base from 10-500 rpm in 10 rpm increments, digital LED speed, time and force display, touch-pad controls including illuminated power on/off switch, platen and head speed, motor run/stop switch with built in memory, water on/off switch, cover, removable splash ring and bowl liner. The AutoMet® 300 Power Head features controlled application of force from 10 to 120 pounds in 1 pound increments. The PC Met® Precision High Volume Printed Wiring Board Accessory (60-5090) offered only with the NelsonZimmer® 2000 system contains 6 cavities each capable of holding 6 printed wiring board coupons. It comes complete with top mold plate, magnetic mold base, 6 quick-set stops, coupon loader, silicon mold spray, 1000 indexing pins, dial indicator calibration gauge, gauge blocks and operating instructions. CE marked.

60-9096 NelsonZimmer® 3000 System is the same as above for the EcoMet® 300 and AutoMet® 300 but includes the PWB Met™ Small Hole Accessory (60-5175) for cross-sectioning through-holes to $\geq 0.004''$ (100 μ m) in diameter. This accessory will prepare up to 18 coupons at one time. It comes complete with top mold plate, magnetic mold base, 6 quick-set polycrystalline diamond stops, coupon loader, PWB sample extractor, silicon mold spray, 3000 indexing pins, dial indicator calibration gauge, gauge blocks and operating instructions. CE marked.

Accessories

- 60-9000 AutoMet® Power Head Drive Adapter** (Required)
- 60-5061 Cup for Upper Plate**, quantity 6
- 60-5062 Bottom Pad for Lower Plate**, quantity 6
- 20-3046 Silicon Mold Release Spray**, 6 oz. (0.17kg)
- 60-5069 Alignment Hole Drill Fixture**,

PC Met® Accessories:

- 60-5091 PC Met® Tungsten Carbide Grinding Stops**, quantity 3 (without brass holder)
- 60-5092 PC Met® Diamond Polishing Stops**, quantity 3 (without brass holder)
- 60-5095 PC Met® Precision Holder Only with 6 Stops**
- 60-5053 PC Met® Coupon Pins 1" (25.4mm) long**, 1000 per jar

PWB Met™ Accessories:

- 60-5185 PWB Met™ Sample Extractor for the PWB Met™ Small Hole Accessory**
- 60-5173 PWB Met™ Polycrystalline Diamond Stop**
- 60-5093 PWB Met™ Polycrystalline Diamond Long Stop Assembly with Brass Knob**
- 60-5094 PWB Met™ Polycrystalline Diamond Short Stop Assembly with Brass Knob**
- 60-5184 PWB Met™ Coupon Pins 3/8" (9.5mm) long**, 3000 per jar

Related Equipment:

- 60-5180-115 PWB Met™ Router (220V Available)**
- 60-5215 PWB Met™ Digital Alignment Drill w/Color Monitor**

Preparation Procedure

Grinding Steps	Time	Pressure	Base Speed
1. 240 Grit CarbiMet® 2 Paper	Until Course Stops Touch ≈ 120 sec.	30 lbs	240 rpm
Polishing Steps	Time	Pressure	Base Speed
2. 600 Grit CarbiMet® 2 Paper	Until Fine Stops Touch	30 lbs.	120 rpm
3. 3 μ m MetaDi® on TexMet®	60-120 sec.	30 lbs.	120 rpm
4. 0.05 μ m MasterPrep® on MicroCloth®	40-60 sec.	30 lbs.	120 rpm

Note: Procedure will vary based on board thickness, composition and good laboratory practice.

For a complete listing of consumables, please refer to our Consumables Buyer's Guide. Buehler continuously makes product improvements; therefore technical specifications are subject to change without notice.

BUEHLER ANALYST® SECTION 4



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