

## LP UNALON CONDITIONING PROCEDURE



*This procedural guideline improves polishing accuracy for precision applications ranging from simple optical glass to exotic electro-optical substrates. It is recommended for all LP UNALON to condition the surface of the LP pad fused for high radius curves to multi-lens/wafer polishing in gang carriers and for single or double-sided polishing of small to large surfaces.*

*For questions regarding your application or to discuss a unique polishing process, please call UPI's technical team. We will help you choose the right LP material and polishing agent, and review processing details like the optimum pressure, feeds, speeds, etc. to use on a specific substrate.*

The following steps are recommended to improve curve control, flatness and parallelism accuracy:

### SELECT YOUR LP

If you are not using LP prepared with pressure sensitive adhesive (PSA) backing, choose a high performance contact adhesive like Universal X-19 or X-14 to securely attach the LP. A precut LP pad with appropriate relief holes and slots cut into it is preferred since the pad surface should not be disturbed after truing.

When possible, an exact opposite (mirror image) of the tool on which the LP is mounted, should be used as a pressing tool during the attaching operation to ensure firm, no voids adhesion.

### BRING THE PAD "ON THE CURVE"

Truing is accomplished with a diamond-conditioning, mirror image tool of the exact curve wanted.

- ✓ Diamond-conditioning tools, available through UPI, should be used.
- ✓ Water is recommended for flushing; however, any grinding coolant compatible with the workpiece substrate that will also not deteriorate the PSA, can be used.

With the pad/tool mounted on the spindle and the diamond-conditioning, mirror image, truing tool in place and flowing freely, turn machine on for a ten second pulse and then check the pad for curve accuracy. Usually, thirty seconds in ten second pulses will bring the pad "on curve".

### SCRUB, RINSE, SCRUB

Scrubbing is required to remove any diamond particles that may have come loose during the truing process. Using a mild soap and a UPI bristle brush, gently, but vigorously scrub the LP pad surface with a circular motion in the opposite direction of the truing cut. Rinse, using the same scrubbing action, under full flow of water. A second scrubbing and rinse is recommended (in some cases a third may be warranted.) After scrubbing and rinsing, blow dry the pad surface with a high pressure air nozzle by directing the air flow in the same direction as the truing action. The pad is now ready for "test" polishing on "test" substrates. "Testing" is recommended to check for "on curve" accuracy and for remaining diamond particles.

### ABOVE ALL, ACCURACY

The diamond-conditioning tools used in the truing procedure control the accuracy of the truing operation. This makes accurate plating CRITICAL. Plating depth, size range of the diamond grit, and the cut and compensation of the mirror-image tool's surface are all contributing factors to producing the desired "on curve" pad surface. To insure top performance, diamond-conditioning tools should be periodically "reconditioned." To retrieve diamond particles in the conditioning tool we recommend using a mixture of our UNILAP C60 and MICROGRIT (with a micron size 3x larger than the diamond particles of the conditioning tool) and a small amount of water.