

## Chip Cracker Kit

NanoInk's Dip Pen Nanolithography® (DPN®) Pens are available as separated dies or in bulk as entire 4" wafers, or parts thereof. These wafers consist of rows of dies, each with pens on both sides. To use the pens, you need a way to separate these dies, which are still loosely connected to each other after fabrication. They can easily separate using the Chip Cracker Kit, a tool specifically designed with the geometry of the wafer and die in mind. The Chip Cracker is a 10 cm<sup>2</sup> anodized block of aluminum with two terraces cut into it that are 150 microns high (see Figure 1).



**Figure 1:** The Chip Cracker and its diamond scribe. (Rows of dies are shown for example only.)

### Using the Chip Cracker

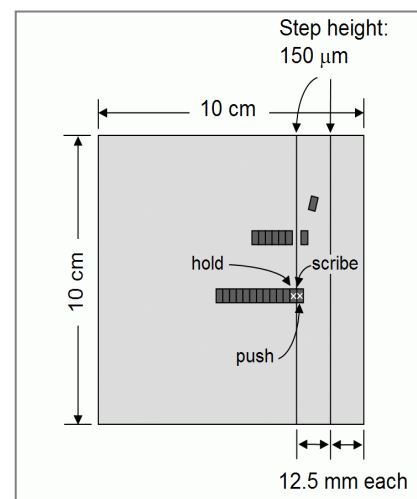
Position the row of dies over the first step so that the separation line between two dies exactly coincides with the step (see Figure 2). Then, as shown in the figure, push down lightly on the center of the second die from the left using, for example, tweezers. [Do not clamp the die from the sides, as this would damage or destroy the probes.] While holding, push down *gently* on the rightmost die using the included diamond scribe. Do not push hard. The dies should separate easily. If they do not, use the scribe to *very gently* create a line along the separation line of the two dies. Finally, try to push again on the outermost die. The two dies should come apart without effort.

Item Name: Kit, Chip Cracker

Part #: PEN-2002-01

Compatible with the NLP 2000 System, DPN 5000 System, and NSCRIPTOR™ DPN System

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**Figure 2:** The dimensions of the Chip Cracker block. The illustration also depicts the best technique for using the device.