

FlipScribe™

Benefits

- Enables accurate cleaving through frontside targets with a scribe made on the backside of the substrate
- Scribe does not damage the frontside of the sample
- Accuracy of scribe $\pm 200 \mu\text{m}$ (achievable)
- Flexible with respect to sample size and shape
- Capable of scribing bonded crystalline and amorphous wafers and chips for subsequent cleaving
- No maintenance required

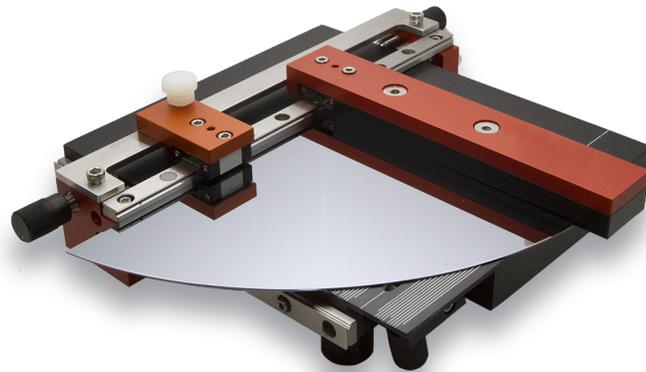
Features

- Accurate positioning of the scribe relative to features on the front side (the front side being observed either by eye or with a stereoscope).
- The length of the scribe can be varied from 1 mm to 100 mm
- Prealigned diamond scribe in user replaceable cartridge; height and angle adjustable
- Ruler embedded in platform enables precise and repeatable sample alignment and sizing
- The tool is purely mechanical; no power required

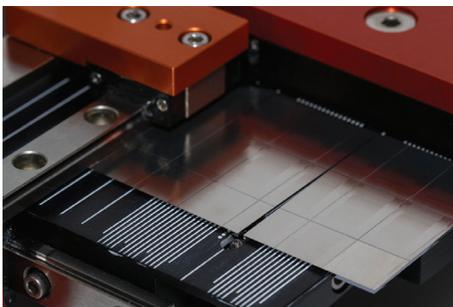
FlipScribe takes scribing to a new performance level, making clean, straight scribe lines on the back side to accurately cleave front side targets, bonded wafers and other substrates. This method eliminates contamination of sensitive front side devices during the scribing processes and is valuable for both crystalline and amorphous samples.

Scribing Reinvented

FlipScribe is a compact, stable, accurate, fast and low cost scribing and cleaving solution suitable for any lab; no utilities required. It provides a more accurate method for scribing than can be achieved with hand held tools, by integrating a robust diamond scribe into a sample platform with a fence guide design. Time required to align and scribe is about a minute. It allows users to accurately position the scribe mark relative to features on the front side, visualized either by eye or with a user-supplied high magnification microscope. FlipScribe also offers a quick method for cleanly downsizing large samples, with a "scribe stop" to allow the operator to define the length of the scribe.



FlipScribe with one-quarter of a 12"/300 mm wafer.



Silicon device after scribing and cleaving.

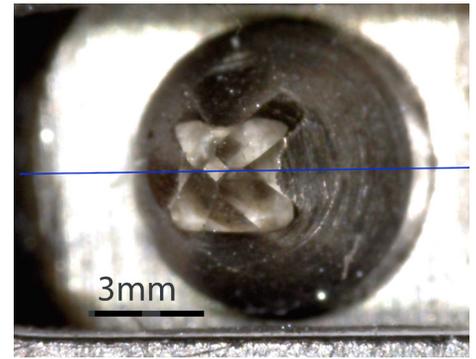
Specifications

Cleaving accuracy	$\pm 200 \mu\text{m}$
Cleaving cycle time	1-2 minutes
Minimum sample size	$\frac{3}{8}$ " / 9.5 mm (L) \times $\frac{1}{4}$ " / 6.3 mm (W) \times .01" / 300 μm (H)
Maximum sample size	4" (100 mm) wafer; $\frac{1}{4}$ of 12" (300 mm) wafer; Non-wafer: $\frac{3}{8}$ " / 9.5 mm (L) \times $\frac{1}{4}$ " / 6.3 mm (W) \times .01" / 300 μm (H)



Configuration

Rail and guide system	Maintains sample orthogonality and method to push the sample when scribing.
Sample platform	7" (178 mm) × 6" (152 mm); ruled to facilitate sample sizing
Scribe stop	Sets the length of the scribe; continuously variable >1 mm - 4" (102 mm)
Diamond scribe	Pre-installed diamond scriber with an eight (8) point diamond tip tool and 4 facets at 45° angle.



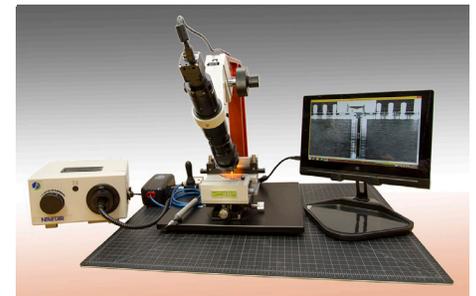
Faceted diamond scribe; blue line across cutting edge

Installation Requirements

Flat work surface	No power required. Stereo microscope with parfocal zoom recommended
No assembly required	

Options

LatticeAx™ (LGAX-420LG)	LatticeAx cleaving machine for analysis-ready samples with accuracy to ±10 microns
Small sample cleaver (MC-SSC-100)	Cleaver for small samples, includes sample holders and cleaving apparatus
Wafer cleaving kit (WCSK-102LG)	Wafer cleaving kit including pliers and scribes



Pair the FlipScribe with a LatticeAx cleaving machine to fully support a complete, high accuracy scribe and cleave workflow. Shown here: LatticeAx 420.



FlipScribe has a small footprint, allowing it to be placed on any work surface.

About LatticeGear, LLC.

Company founders Janet and Efrat, two women with extensive applications experience in the semiconductor industry, believe that scribing and cleaving can be accurate, repeatable, easy and fast.

They started LatticeGear in 2012 to provide solutions and resources that help technicians, engineers and researchers increase throughput and productivity for their sample preparation workflows.

From kits that take the guesswork out of selecting supplies for a specific use case, to compact desktop scribing and cleaving machines designed for speed, ease of use and high quality results, LatticeGear solutions are helping to alleviate sample preparation challenges in materials research and failure analysis labs around the world.

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