

## Opto System Diamond Scriber OSM-100TS



Opto System Diamond Scriber OSM-100TS utilize a diamond tool to perform die or bar singulation as part of the scribe and break process. This fully-automatic high precision equipment is a standard for laser diode manufacturing.

The design includes a vision system that automatically recognize pattern structure and accurately move the wafer to the cut position. In addition, there is an auto tool angle function that controls the applied force and angle of the diamond tip. The combination of these and other features ensures high quality facets, high yields, reliable machine performance and overall low cost of ownership.

This machine can be used for a number of materials including Indium Phosphide and Gallium Arsenide substrates.

## FEATURES

- Vision System using multiple cameras to ensure accurate auto alignment
- Perform scribes by applying pressure on the sharp edge of a diamond tip tool.
- Remote access with TeamViewer and Windows PC
- Dry process eliminates potential damage from liquid and coolants.
- Auto tool angle function controls the applied force and angle of the diamond tip.
- Reproducible, repeatable and adjustable diamond pressure and speed
- Virtually zero kerf allowing maximum die density.
- Touch-down position and pressure adjustment function from first to last scribe
- Original technology
- Damage free mirror like surface resulting from micro cracks propagated by scribing.

## SPECIFICATION

1. Wafer Table	<ul style="list-style-type: none"> <li>• Table <math>\phi</math>170 mm (For maximum 4 inches wafer)</li> <li>• Parallel <math>\pm</math>0.010 mm/100mm Travel</li> <li>• Wafer Set 6-Inch Frame 2-6-1 (Disco Standard)</li> </ul>
2. X-Y Table	<ul style="list-style-type: none"> <li>• X (Index Direction) 110 mm Ball Screw, Servo Motor</li> <li>• Y (Scribing Direction) 110 mm Linear Motor Table</li> <li>• Resolution x : 0.1<math>\mu</math>m y : 0.1<math>\mu</math>m</li> <li>• Precision (100mm Travel) x : <math>\pm</math>2<math>\mu</math>m y : <math>\pm</math>5<math>\mu</math>m</li> </ul>
3. $\theta$ 110° Stepping Motor	<ul style="list-style-type: none"> <li>• Resolution 0.00035°</li> <li>• Precision <math>\pm</math>20 Seconds</li> </ul>
4. Z(Cutter Movement) 45mm Pulse Motor	<ul style="list-style-type: none"> <li>• Resolution 0.1<math>\mu</math>m</li> <li>• Cutter Angle 55°<math>\pm</math>5°</li> <li>• Force 5 ~ 40g</li> </ul>
5. Optical System	<ul style="list-style-type: none"> <li>• Microscope 4 Times</li> <li>• CCD Camera 1</li> <li>• Monitor 15" 1</li> <li>• Vision Unit (KEYENCE) 1</li> <li>• Scan Camera 1</li> </ul> <p>Each bar can be aligned automatically with the vision unit.</p>
6. Cut Depth	<ul style="list-style-type: none"> <li>• 0 ~ 999<math>\mu</math>m</li> </ul> <p>The tool is lowered in <math>\mu</math>m from the wafer zero level</p>
7. Cutter Force Indicator	<ul style="list-style-type: none"> <li>• On Touch Screen</li> </ul>
8. Utilities	<ul style="list-style-type: none"> <li>• Power Supply AC120V 500VA</li> <li>• Vacuum Factory Line</li> <li>• Air Supply 4Kg/cm<sup>2</sup> <math>\Phi</math>6mm 2L/m</li> </ul>
9. Size	<ul style="list-style-type: none"> <li>• 710(W) <math>\times</math> 870(D) <math>\times</math> 1415(H) mm</li> </ul> <p>Excluding a Signal Tower</p>
10. Weight	<ul style="list-style-type: none"> <li>• Approx. 350 Kg</li> </ul>
11.Signal Tower	<ul style="list-style-type: none"> <li>• 3 Color status signal tour</li> </ul>