



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

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Technical Specification for a Precision diamond scriber for different wafers :

The tool configuration :

- Maximum scribe length (Y-translation): at least 200 mm
- Maximum displacement transverse to the diamond scribe (X-translation): at least 100 mm with a resolution equal to or better than 20 μm .
- Wafers that may be scribed: Si, III-V, Ga_2O_3 , Sapphire, glass and ceramic with diameters of up to 150 mm and thickness up to 5 mm.
- Minimum size of chip that may be scribed: 10 mm x 10 mm
- Must be provided with a microscope with an objective with 25X to 40X magnification, X-Y cross-hair and illumination.
- The angle of the scribe must be easily changeable.
- The vacuum chuck for holding the wafer (pieces) to be scribed must be able to hold the largest wafer and the smallest chip mentioned above.
- The vacuum pump for the chuck must be provided with the scriber.
- The scribing force must be adjustable between 0 and 500 gm
- The position of the scribe above the vacuum chuck must be easily adjustable
- Precise turning of the wafers/chips on the vacuum chuck by 90 ° should be possible.
- Fine rotation of the wafers/chips must be easily controllable with a resolution equal to or better than 0.01°.
- After scribing, the scribe should disengage automatically. Additionally, provision for manual disengagement (lifting) of the scribe should be provided.
- Provision for manual disengagement of the vacuum pump should be provided.
- X-position indicator should be digital, with possibility of resetting the zero-position.
- The offer should include at least two spare diamond scribes.

Other requirements :

- A minimum warranty of 1 year
- Availability of local (within India) technical support for preventative maintenance and troubleshooting is required.
- Strong record of providing the quoted tool in leading facilities across academia and industry will be considered.
- Video demonstration of the use of the tool will be considered favourably.