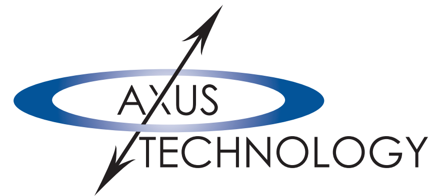
Strasbaugh 7AF Wafer Grinder



Your source for leading-edge surface processing solutions

The Strasbaugh 7AF wafer grinder is an advanced wafer grinding solution for semiconductor, data storage, SOI, LED, and a variety of R&D applications. The 7AF delivers high volume throughput with superior finish and thickness control. The force sensitive mechanics and advanced control system allows adaptive grinding that is determined by grinding wheel dynamics resulting in reduced sub-surface damage and increased product yield.

The unique mechanical design of the 7AF includes two air bearing grind spindles and two air bearing work holding spindles to allow simultaneious course and fine grind steps. Each wafer remains on the same work spindle for both grind steps thus reducing wafer handling and increasing wafer throughput.

FEATURES

- Force-Sensitive infeed mechanics to allow the grinding wheel dynamics to determine the stock removal rate to reduce sub-surface damage. Especially important for materials such as silicon, GaAs, InP, etc.

- Ultra-stiff air bearings and submicron feed rates - Increases wafer strength, improves total yield, improves surface finish to minimize follow-on polishing times, if required.

- In-situ digital measurement probes to provide real-time thickness measurements to the grinder's control system for consistent wafer-to-wafer and lot-to-lot thickness control

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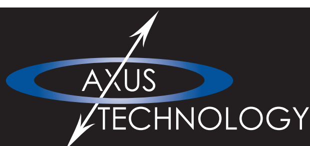
Strasbaugh 7AF Wafer Grinder

MACHINE SPECIFICATIONS	
Wafer Diameter	3″ to 200mm
Control Systems	IBM® Industrial PC
Operator Interface	19″ VGA monitor with IBM® Touchselect screen
Pre-Aligner Station	Centers the wafer and locates the flat or the notch
Wafer Transport	Four cassettes accessible by a central robotic wafer handling system utilizing a single flipping end effector. Accepts SEMI standard H-Bar cassettes
Thickness Gauge	Two in-situ contact-type gauges. 0-25,000-micron measurement range
Grinding Coolant System	D.I. or municipal water compatible coolant system for single pass flow
Grinding Wheels	Two, 11″ diameter (280mm) cup-style diamond grinding wheels ±0.5″
Work Holding Chucks	Vacuum chucks; 3″ to 200mm diameter porous ceramic. Includes D.I. water and air backflush
Infeed System	Maximum Travel: 25mm Minimum Movement: 0.1 μm Maximum Speed: 1700 μm/sec Minimum Speed: 0.1 μm/sec
Traversing Spindles	Maximum Travel: 30″ (762mm) Maximum Speed: 10″/sec (254mm)
Lubrication	Automatic lubricating system with low level alarm

TECHNICAL FEATURES	
Grind Spindles	Two 3 HP (2.2 kW) servo controlled variable speed, 500-4500 rpm direct drive air bearings
Rough Grind Feed Rate	3-step, programmable 0.1-30 μm/sec. Programmable dwell of 1-200 revolutions
Fine Grind Feed Rate	3-step, programmable 0.1-20 μm/sec. Programmable dwell of 1-200 revolutions
Force Controlled Grinding	Grinding wheel will grind at feed rate until grinding force exceeds programmed force, then the grinding force establishes removal rate
Work Spindles	Two brushless DC servo controlled variable speed 1-500 rpm, direct drive air bearing spindles
Rinse/Spin Station	D.I. water rinse. Programmable 100 to 4000 rpm spin dry

FACILITIES	
Electrical	230V/208V, 3 ph, 60 Hz, 45 FLA
Compressed Air	25 SCFM at 90 psi minimum (6.2 Bar)
Exhaust	750 cfm at ½″ water static pressure
Grinding Coolant	D.I. water, 6 gpm (22.7 liters) at 30 psi minimum, 50 psi maximum
Spindle Coolant	Municipal or chilled water - 1 gpm (3.78 liters) at 30 psi minimum, 80 psi maximum
Drain	2″ (50.8mm) diameter
Vacuum	5 cfm at 25″ Hg

DIMENSIONS		
Metric	1676W x 2133D x 1930H	
Inches	66W x 84D x 76H	
Weight	~3402 kg	7500 lbs



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