MP Ultra Upgrade for Tool P5000

MP Ultra Upgrade

- Replacement of legacy robots with a field proven, magnetically driven direct drive replacement robot.

Value Proposition:

- This upgrade is for customers who have increased pressure to improve reliability and improve throughput, while reducing particles and improving wafer to wafer uniformity.

MP Ultra Upgrade for Tool P5000

Features

- Two blade options (150mm & 200mm)
- For temp <= 350C: elastomeric pads w/ increased coefficient of friction
- For temp > 350C: Ceramic blade (lower speed)
- Continuous 360 degrees rotation
- Wafer on Blade (WOB) feature
- Compatible with existing Centerfinding, wafer Position Sensor (WPS), and Orienter hardware
- No belts, cables or pulleys

Benefits

- 4x MTBF improvements over Phase III robot
- Direct-drive reliability >2.5 Million MCBF
- Increased Throughput over the Phase III robot (process dependent)
- 5x wafer handling repeatability improvement
- Reduced PM and downtime
- Improved particle performance
- Increase reliability, particle performance and throughput on P5000 CVD & Etch tools

P5000 Upgrade- MP Ultra
AMAT Technology, Brooks Engineering

Robot Comparison - Benefits

Criteria	Phase III	MC Robot	MP Robot
Wafer Handling Reliability (MCBF)	625,000	> 1,400,000	> 2,500,000
Mean Time Between Failures (MTBF)	>1,000 hrs	>4,000 hrs	>5,000 hrs
Wafer Handling Repeatability (end of travel +/- .01 inch)	100k cycles	2X Improvement 200K cycles	5X Improvement 500K cycles
Throughput Improvement (Process Dependant)	Baseline	< 7%	Up to 24% with Low Temp Blade Up to 7% with High Temp Blade
PM Requirements (save pad replacement on low-temp blades)	< 1 yr	< 1 yr	> 1 yr
Mean time to repair/replace (MTTR)	> 12 hrs	> 8 hrs	< 6 hrs
Particle Adders	>0.02p/cm² for 0.21 um particles	<0.02p/cm² for 0.21 um particles	<0.01p/cm² for 0.21 um particles
Time to Install Robot	> 8 hrs	> 8 hrs	< 8 hrs
Annual Repair Cost (save consumable pads)	$30,000	< $10,000	~ $0
Robot List Price	na	$$$	$