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New Single-Wafer Cleaning System for 300mm Wafers Supports Various System LSI

Dainippon Screen Mfg. Co., Ltd., (Headquarters: Kyoto; Japan/President: Akira Ishida) has developed single-wafer cleaning system for 300mm wafers, AQUASPIN MP-3000 Spin Processor, optimal for various next-generation devices. The AQUASPIN MP-3000 will be used for 0.13 μm and even precise cleaning processes, supporting the finer design rules of advanced device technology.

Due to finer design rules, semiconductor manufacturers are demanding cleaners which ensure precise and reliable processing, while requiring efficient use of clean room space. The MP-3000 answers to those demands by offering advantages such as the single chamber processing system and a cost-saving smaller footprint. Wafer cleaning with several chemicals, rinsing and drying can be accomplished in a single chamber, facilitating dry-in/dry-out processing.

The standard specifications of the MP-3000 include four single chambers, which will increase productivity significantly.

AQUASPIN Concept:

Demand for single-wafer cleaning systems increases as requirements for improved process performance and quick turn-around time becomes critical for semiconductor wafer manufacturing. In addition, semiconductor manufacturers are under increasing pressure to minimize the environmental impact of cleaning solutions by using aqueous chemistries such as dilute acids, ozonated water, or ionized water. Supporting the environmental conservation effort this new wafer cleaning equipment also reduces chemical consumption and allows for chemical recirculation or recycling.

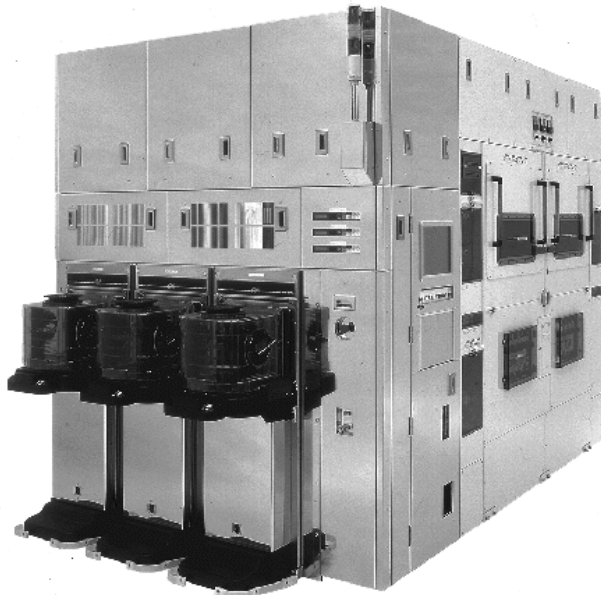
AQUASPIN represents the brand of single-wafer spin cleaning systems optimized to utilize environmentally friendly aqueous solutions with superb process results.

The series' lineup of products includes scrubbers, SS-80BW-AR and SS-3000, the SR-2000 polymer removal system, the AS-2000 post-CMP cleaner, the MP-2000 Spin Processor, and this MP-3000 Spin Processor.

Price : 220 to 250 million yen (differ from various specifications)

Features :

1. High productivity The standard specifications include four chambers, ensuring greatly increased productivity. Each chamber is capable of a series of processes, pre-process cleaning, oxide etching, post-process cleaning, and drying. In addition, although being 300mm applicable, the ability is equivalent to that of 200mm wafer cleaner.



2. Single chamber processing

A new cup design enables a series of processes, including chemical cleaning, DI water rinsing and wafer drying, to be performed within a single chamber. As a result, the risk of wafer contamination from atmospheres is eliminated.

3. Enhanced process performance

Optimized airflow inside the chamber effectively prevents mists from adhering to wafer surfaces. In addition, N₂ purging from both sides of a wafer enables smooth local atmosphere replacement, resulting in greatly reduced drying time and increased processing capacity.

4. Reduced chemical and total exhaust

A new chemical supply and collection system with an optimized chemical dispensing mechanism greatly reduce chemical and DI water use. Moreover, strict airflow control inside the chamber and cup prevents mist and vapor turbulence, while a newly designed exhaust system eliminates the escape of chemical atmospheres, reducing the total exhaust.

Specifications :

Wafer Size: 300mm

Process: Single-wafer process by spin spray

Spin Speed: A maximum of 3,000rpm

Acceleration: A maximum of 1,000rpm/sec

Chemical collection System: 1 system/chamber

<Product Information>

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