PHT

Link To The World

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Silicon Wafer Automatic Batch-type Cleaning Device

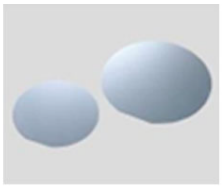
SiC requires a separatespec meeting

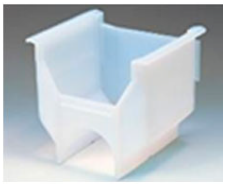
Device Introduction

Silicon Wafer Batch-type Automatic Cleaning Device

Introduction of silicon wafer cleaning device

1. Post-lapping cleaning equipment: Lapping abrasive grain removal (alkali + interface-based cleaning mainly).
2. Alkali etching and cleaning device: Cleaning equipment designed to remove process distortions after grinding.
3. Pre-heat treatment cleaning device: Based on RCA cleaning, but depends on the user's line configuration.
4. Post-heat treatment cleaning device: Based on RCA cleaning, but depends on the user's line configuration.
5. Post-polishing cleaning device: RCA cleaning is the basic process. (DHF · SC-1 · SC-2 · O_3 treatment)
6. FINAL cleaning: RCA cleaning is fundamental. (DHF · SC-1 · SC-2 · O_3 treatment)





Batch-type device for optimum customisation with a wide range of fields of application.

Device Introduction

Silicon Wafer Batch-type Automatic Cleaning Device

Silicon wafer (8" · 12") Introduction of batch-type automatic cleaning device

No. of sheets processed	2 types of 25sheets and 50sheets
Transport Method	Select from carrier type and carrierless type.
Cleaning Method	The configuration of the cleaning tank depends on the process used.
Robot	The number of units depends on the process. Equipped with up/down, travel and chuck drive.
LD&ULD	Compatible with PFA, OPEN, FOSB and FOUP cassettes. The wafer pitch for 8" is 6.35 mm. The wafer pitch for 12" is 10 mm. Specifications to be determined according to application and layout.
Pitch Conversion	For 12" wafer cleaning, to reduce the volume of the cleaning tank convert the wafer pitch to 10mm~7mm or 5mm.
Drying Method	Select from hot water withdrawal drying - IR drying - Spin dryer.
Device in General	Frame - Trestle Steel welded structure with corrosion-resistant coating and wrapped with Envi-wrapping. An FFU (clean unit) is installed on the top.
Processing Time	1 batch (25 or 50sheets) 5min (300sec) ~ 6min (360sec).

Process Performance Specs

Number of Adherent Particles	10pcs/wafer (0.15um or larger size) or less, but subject to user facility.
Metal Contamination	not guaranteed
Etching Uniformity	not guaranteed

Device Introduction

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Device Specs

Wafer Size	φ200mm · φ300mm
Wafer Material	Silicon (SiC and other compound semiconductors require separate specification discussions)
Processing tank and configuration	Separate specification discussion depending on line config
HEPA or ULPA	Quantity determined by configuration
Robot	Made by PHT or PHOENIX ENGINEERING Vertical axis (AC servo driven) + Traveling axis (AC servo driven) + Chuck mechanism (air driven)
Chemical Solution	O_3 · HF · NCW · KOH · NH_4OH · H_2O_2 · HCL · EDTA · HCL · Citric Acid · DIW
Temperature of Chemical Solution	Up to 100°C available for use
Chemical Tank	Pendulum oscillation · Rotation · Ultrasonic
Rinse Tank	Bubbling, QDR, resistivity meter installed
LD&ULD	Ioniser (option)
Dryness	Hot water pulling · IR · Spin dryer · Marangoni
Power	Pure water, nitrogen (for air sensor), clean air, power supply, vacuum (for transport)
Optional Equipment	Ozone generator

Device Introduction

Silicon Wafer Batch-type Automatic Cleaning Device

Competitiveness of PHT semiconductor cleaning device.

Each unit of the cleaning system is modular.
Processes include post-wire saw cleaning, post-wrap washers, alkaline etching cleaning, DSP cleaning and final cleaning. The company specialises in post-wire saw cleaning, DSP cleaning and FINAL cleaning.
Generally, wafer cleaning (for final cleaning) is NG (defective) if there are no more than10 particles on the surface of a 300mm diameter wafer. Particle size is 0.1μm or greater.

Strong Point

High Process Performance	Simple treatment tank construction for optimum process.
High Throughput	The transfer between vessels is controlled by a control system that transfers the shortest distance in the shortest possible time.
Improved Maintainability	Component layout for ease of maintenance.
Device Design	Can be designed for process optimisation based on extensive experimental data.
Extensive Track Record	Can be provided you with the best customised equipment to suit your needs

Support Process

Cleaning after wire sawing · Cleaning after lapping · Alkaline etching cleaning · Cleaning before heat treatment · Cleaning after heat treatment · Cleaning after polishing · Supports FINAL cleaning.