Model 220
S/N 01220105

Technics

220 SERIES MICRO SYSTEM

OPERATION AND MAINTENANCE MANUAL

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Specifications

7.1 STANDARD COMPONENTS

Technics' *MICRO STRIPPER 220* low temperature plasma system is designed for production use in photoresist stripping of high resolution integrated circuits on silicon device wafers or other substrates such as gallium arsenate, ceramic, metals, plastic and glass, organic ashing, surface cleaning and treatment, and trace elements studies.

The supplied unit includes the vacuum system, dual gas introduction system, stainless steel reactor chamber, 500-watt, 13.56 MHz RF generator, process timer, digital readout on all process parameters and functions and a stainless steel wafer boat that will accommodate 3-6 inch wafers.

7.1.1 PROCESS CHAMBER

The system is supplied with a stainless steel chamber, 10 inches in diameter and 12 inches in length, equipped with a full swing-away door for easy loading of samples. The all-metal construction of the chamber eliminates breakage and costly downtime associated with quartz chamber.

The chamber door is provided with a three-inch diameter wide-angle quartz viewpoint equipped with ultraviolet filter and implosion guard for maximum operator comfort and safety. The systems unique gas flow reactor design optimizes gas mixing and uniformity by precisely controlling the gas entry through a series of inlets in the top electrode rod and exhausting the spent species through strategically located outlets on the bottom electrode rod. This design produces uniform gas flow throughout the entire chamber.

7.1.2 ELECTRODES

The electrode system is supplied with radial designed electrode rods of stainless steel construction. This produces a modern upstream plasma system with exceptional uniformity unattainable in any other system. When used with the optional Faraday Cage the substrates are totally protected from ionic bombardment.

7.1.3 GAS INLET CONTROL

Two MFC's channels of process gases is provided, an additional two channels of process gas are available as an optional. Each channel has an inlet-filter and is isolated from the injection manifold by means of an air operated bellows valve. The process gases are automated controlled by the process controller. All internal gas lines are stainless steel and employ VCR vacuum fittings.

7.1.4 VACUUM INSTRUMENTATION SENSOR/DISPLAY

A Corrosion-resistant capacitance manometer (absolute pressure) is supplied, mounted to the underside of the baseplate. The system pressure is displayed digitally from 1-mTorr to 1,999-mTorr.

7.1.5 VACUUM PUMP/VACUUM INTERCONNECT

A 16 CFM two stage, corrosive series pump charged with Fomblin oil, direct drive rotary vane pump is supplied. A 25 mm electropneumatic chamber isolation valve is supplied, mounted to the chamber exhaust port and connected to the pump through the rear cabinet wall. The connection between the chamber exhaust and the pump inlet is made by a forty-inch stainless steel convoluted bellows, terminated with KF-25 flanges.

7.2 OPTIONAL COMPONENTS

7.2.1 ETCHING POWER SUPPLIES

The following unit is available as an option Consult the factory for specific specifications.

- 600 watt 13.56 MHz with Automatic Matching Network

7.2.2 GAS SYSTEM

Two additional MFC's can be added raising the total capability to 4 process gases.

7.2.3 EXTERNAL OIL FILTRATION

An external oil filtration system is available, pre-charged with Fomblin® oil.

7.2.4 EXTERNAL WATER RECIRCULATOR

The external water recirculator is a 5-liter, closed-loop system capable of sustaining a 15 L.P.M. (Liters Per Minute) flow at zero head pressure. It has a temperature control range of -15^0 to 100^0 C. The unit is self contained and operates on 115/230 VAC

7.3 UTILITY SPECIFICATIONS

7.3.1 COOLING WATER

- Temperature: -18^0 to 55^0 C.
- Inlet Pressure: 40 PSI max.
- Delta Pressure: 25-PSI min.
- Resistivity: >50K-ohm /cm2

7.3.2 ELECTRICAL

- Main Console: 115/230 VAC 50/60 Hz

Note: Current requirements vary with configuration and options. System current requirements are listed on the Model/Serial label on the console frame.

Accessories/Options

- Mechanical Pump: 115/230 VAC, 6.5/13 amp, 50/60 Hz single phase
- Ext.Oil Filtration: 115/230 VAC, 6.5/13 amp, 50/60 Hz single phase
- Ext. Water Recirculator: 115/230 VAC, 6.5/13 amp, 50/60 Hz single phase

Note: Standard system configuration is 115/230 VAC for the console and 115 VAC for mechanical pump and all accessories external to the main console.

7.3.3 PROCESS GAS AND NITROGEN VENT GAS

- Inlet Pressure: 12 PSI. Max..
- Purity: Process dependent