

Proven Qualified



- **Wafer Size: 6", 8"**
- **Asher, Descum**

All specification and information here are subject to change without notice and cannot be used for purchase and facility plan. All legacy equipment trademarks belong to O.E.M.. The photos are only for your reference. © 2021 Allwin21 Corp. All Rights Reserved.

AW-10R Plasma Asher Descum Clean Equipment



Proven Qualified

**Originated From
The Dominant
Plasma Asher Descum Clean
Matrix 10 Series**

AW-10R Plasma Asher Descum Clean Equipment



Proven Qualified



AW-10R Plasma Asher Descum Clean Equipment



Advanced Technologies

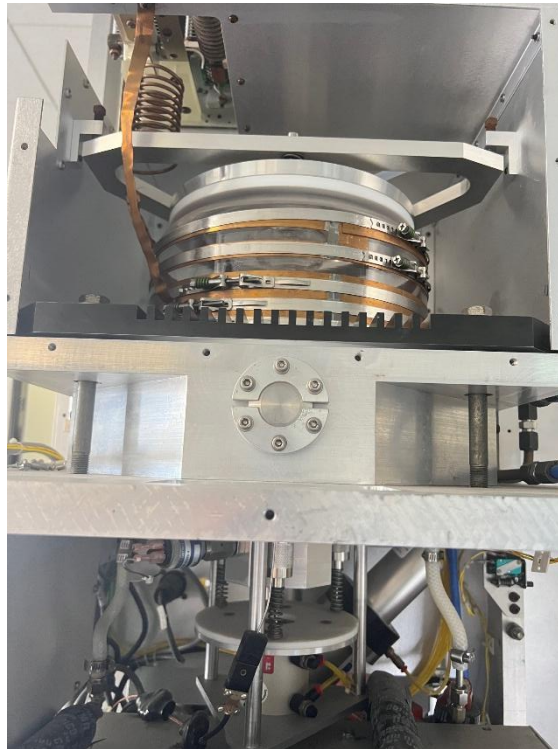
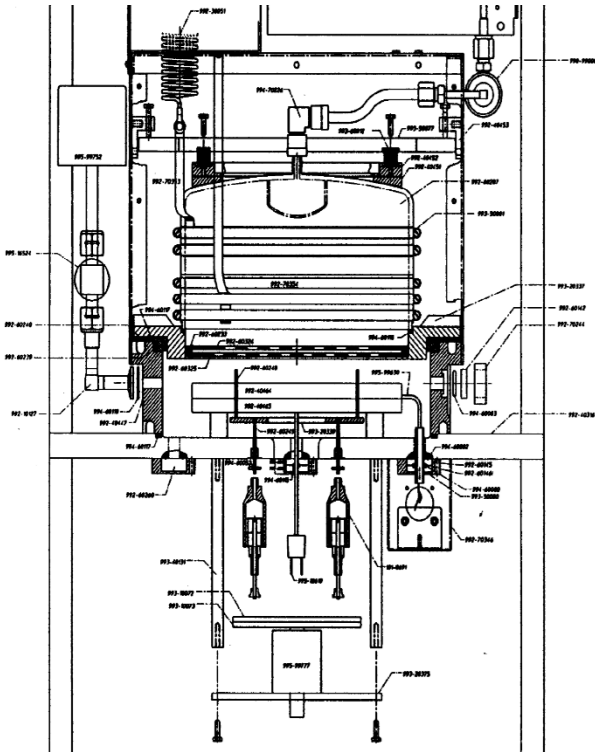
**Designed with
III-V Production
in mind**



AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

Downstream Single Wafer Process Design



Damage Indicators:

Capacitance-Voltage (CV): < 0.1V from the control

Mobile Ions: < $1-2 \times 10^{10}$ (Typically with the unit of ions/cm², subject to confirmation based on specific test scenarios)

Threshold Voltage (Vt): 98% of the test points exhibit a total offset of 0%, and no test point has an offset exceeding 5%

AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

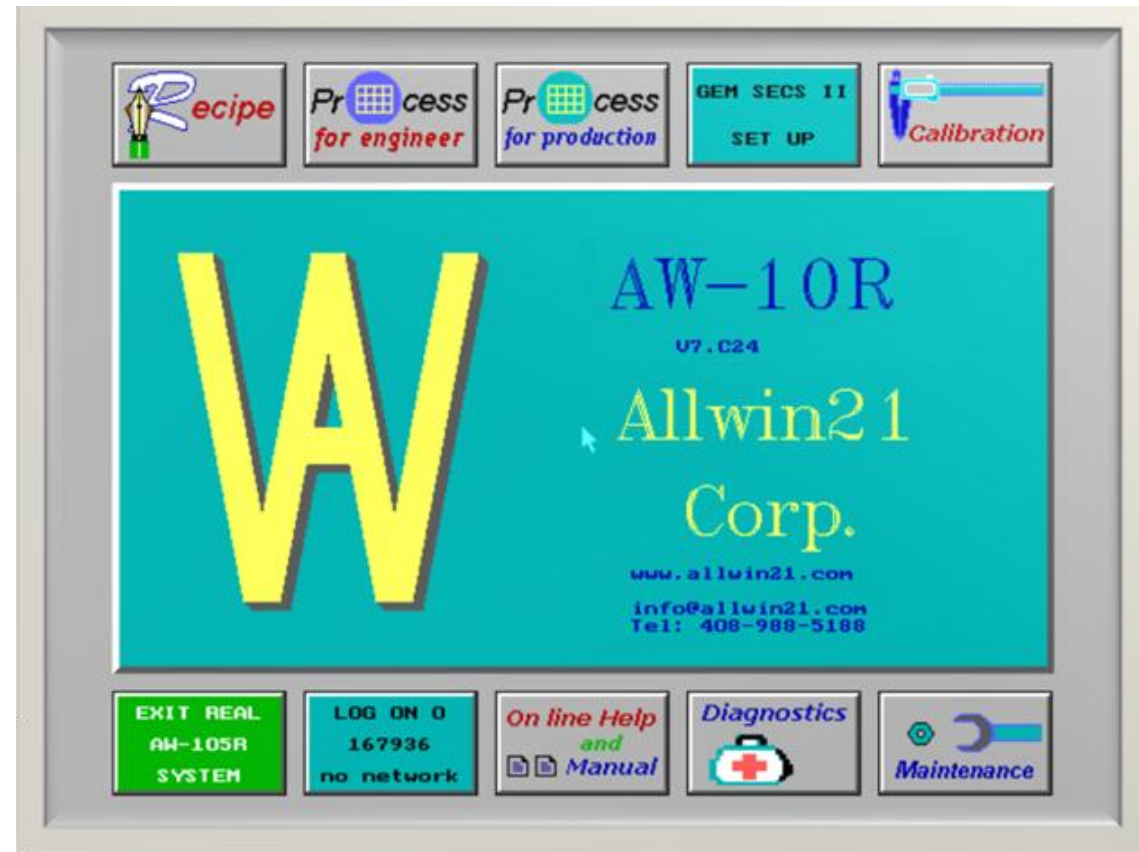
3-axis Integrated Solid Robotic Wafer Transfer



AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

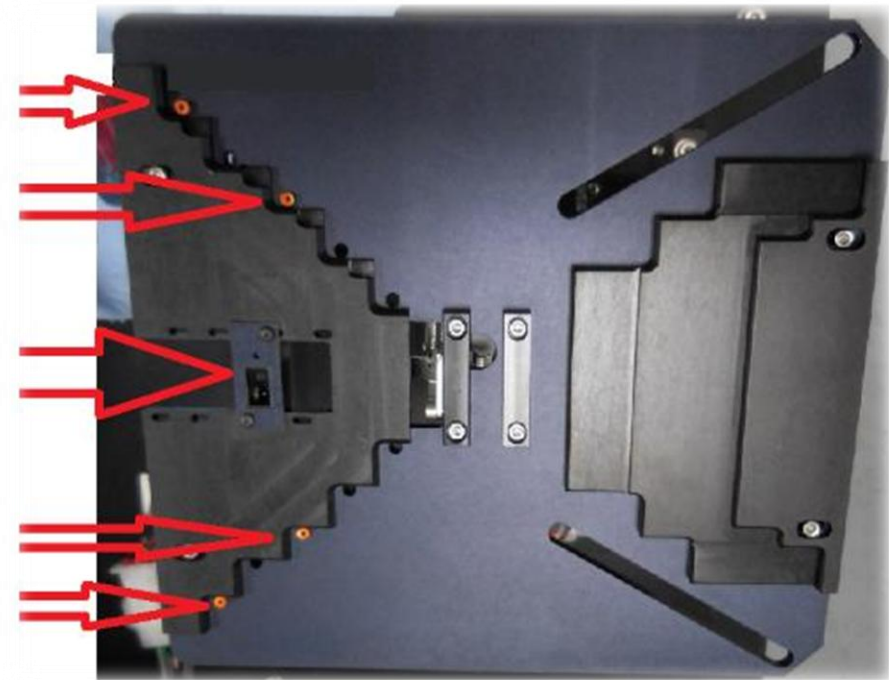
Touch Screen GUI



AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

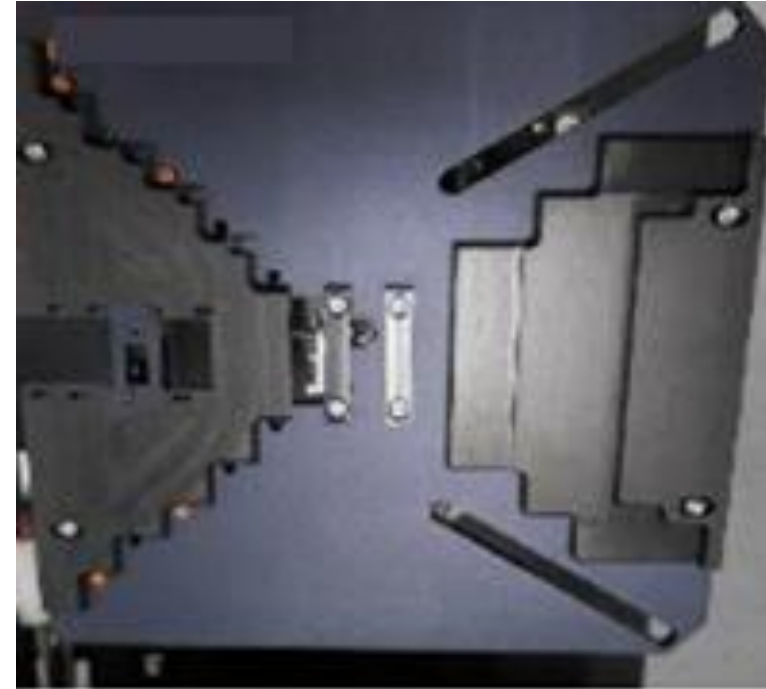
Cassette Station with Sensors (Optional)



AW-105R Plasma Asher Descum Clean Equipment

Advanced Technologies

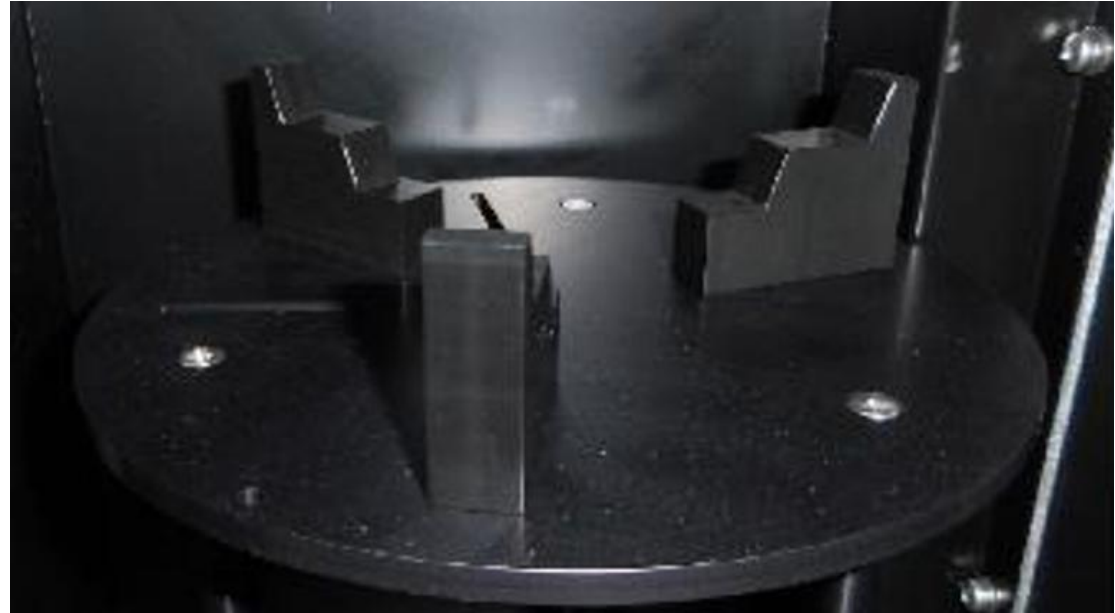
- **Fixed Cassette Station**



AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

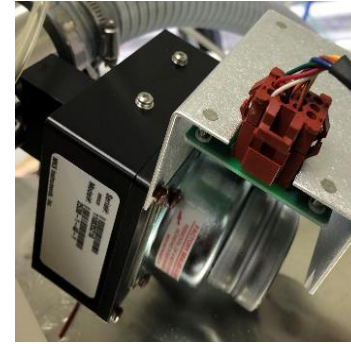
Center Aligner Function



AW-105R Plasma Asher Descum Clean Equipment

Advanced Technologies

Modern Electronic Components

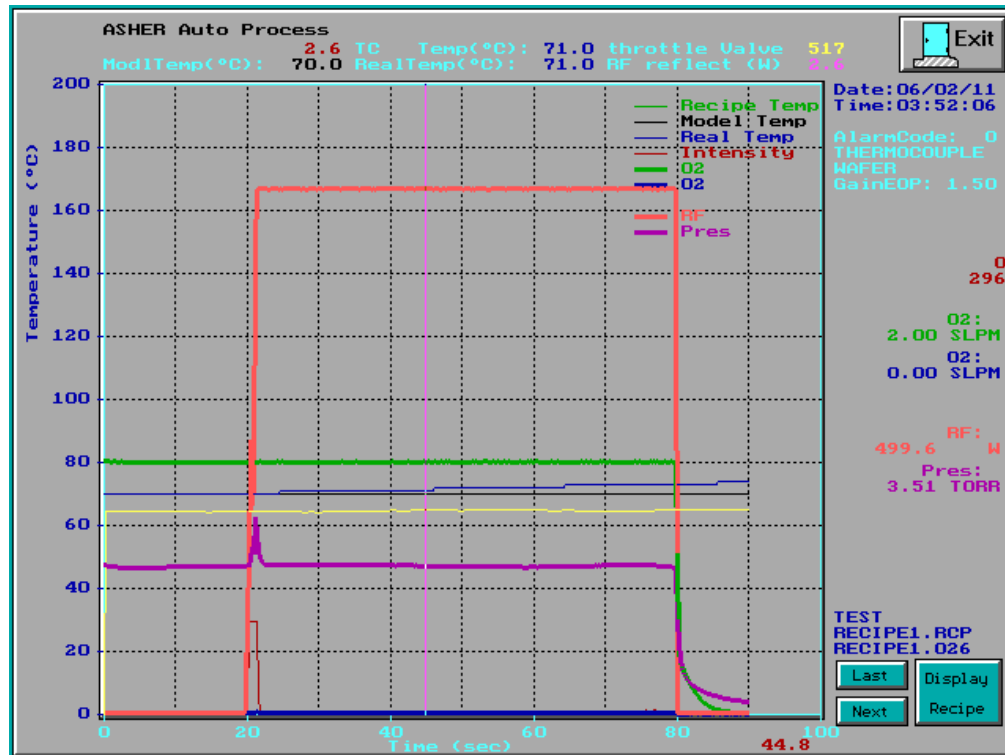


AW-10R Plasma Asher Descum Clean Equipment

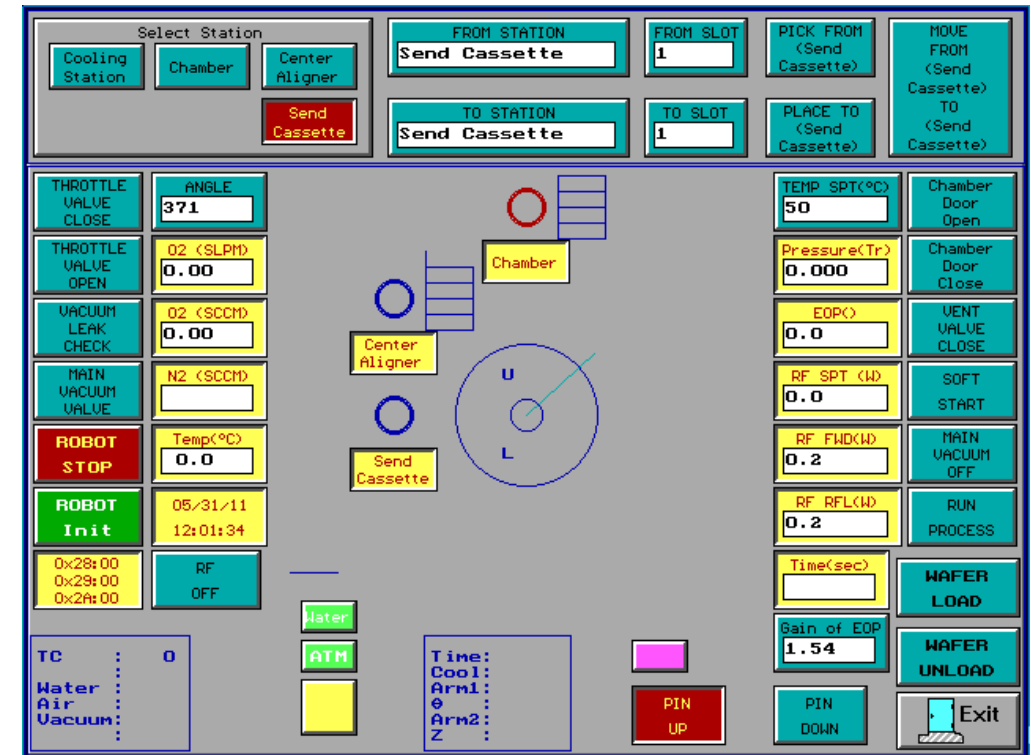
Advanced Technologies

Allwin21 Software

Process Monitor



WTM



AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

Allwin21 Software

Recipe Edit

The Recipe Edit screen features a top navigation bar with 'Exit', 'Save', and 'STEP TIME' buttons. Below this, a 'Recipe Name' field is set to 'PRESSURE', and an 'EXT' dropdown is set to 'RCP'. The 'Engineer' field is empty, and the 'Comment' field contains 'CovventeCAR-060'. A grid of parameter fields includes 'RFL (ID)' at 100.0, 'GasStableTime' at 9.00, 'Delay (sec)' at 10.00, 'Gain' at 260.00, 'EOP PERCENTAGE' set to 'ENABLE', 'Inst. angle' at 700.0, 'PURGE CYCLES' at 2, and 'PURGE SECS' at 3.00. The main area is a table with 10 steps, each with a function, time, temperature, and gas flow rates for five different gases. The bottom section contains control buttons for 'Page Down', 'Ctrl-LINE INSERT', 'Ctrl-Del LINE DELETE', 'Ctrl-F7 LINE COPY', 'Ctrl-F8 LINE PASTE', 'EOP PARAMETER SET UP', 'EOP SENSE NEGATIVE LEVEL', and 'RECIPE VALIDATE <F10>'. A footer note states: 'Press D,O,S,F or Space Bar to select Delay, OverEtch, SlowPurge, Wait or Finish function.'

Step No.	Step Function	Step Time (sec)	Temp (°C)	Gas 1 O2 %	Gas 2 N2 %	Gas 3 O2 %	Gas 4 CF4 %	Gas 5 SOCH	RF Power (W)	Vacuum Pressure (Torr)	EndPoint DETECT	RF
1	Delay	30	30	100	100	0	0	0	0.0	1.200	0.00	OFF
2	Wait	60	27	100	100	0	0	0	0.0	1.200	0.00	OFF
3	Delay	180	30	19	0	0	0	0	0.0	0.380	0.00	OFF
4	Delay	60	30	0	0	0	0	0	0.0	0.090	0.00	OFF
5	Delay	30	30	14	0	0	0	0	0.0	0.280	0.00	OFF
6	Delay	120	30	14	0	0	0	0	0.0	0.280	0.00	OFF
7	Finish	0	0	0	0	0	0	0	0.0	0.000	0.00	OFF
8	Finish	0	0	0	0	0	0	0	0.0	0.000	0.00	OFF
9	Finish	0	0	0	0	0	0	0	0.0	0.000	0.00	OFF
10	Finish	0	0	0	0	0	0	0	0.0	0.000	0.00	OFF

Factory Set Up

The Factory Set Up screen includes an 'Exit' button and a 'Save' icon. It is organized into several columns of settings. The first column contains 'System Name' (AW-10C 0), 'Screen Saver' (DISABLE), 'Source Code Check' (DISABLE), 'Email Port' (DISABLE), 'Data Upload (RS232)' (DISABLE), and 'GEN SECS' (DISABLE). The second column has 'LEVEL SET UP' (ENABLE), 'AS 232 CONFIGURE' (ENABLE), 'BOMBS CONFIGURE' (ENABLE), 'PRESSURE SENSOR TO GROUND' (DISABLE), 'TC GROUND TYPE' (DMM-4 N/A), and 'ReOrder BOM NAME SEQUENCE' (DISABLE). The third column includes 'VALVE SENSOR LOGIC' (J), 'RF CTRL' (DIGITAL TO), 'VALVE CTRL' (AW-102 HNS 203B), 'Throttle Rate' (1430), 'PLC factor' (8), and 'MOTOR DELAY' (4). The fourth column shows 'CUSTOMER LEVEL SET UP', 'RF TOTAL (hrs)' (5.00), 'RF LIMIT (hrs)' (300.00), 'RF TIME (hrs)' (1.00), 'SLOW PUMP VALVE' (DISABLE), 'SLOW PUMP Delay' (2.0), 'SLOW VENT VALVE' (ENABLE), and 'CLOSE VALVE AFTER VENTING' (ENABLE). The fifth column lists 'PRODUCTION FULL FUNCTION' (DISABLE), 'RF Delay (sec)' (10.0), 'MaxTemp CAPD' (1000), 'ALWAYS DISP EOP SLOPE' (DISABLE), 'Water Num' (781), 'Water Tot. Num' (555), 'TEMPERATURE AVERAGE NUM' (3), and 'TEMPERATURE RENDING' (ENABLE). A 'File Extent' dropdown is set to 'STANDARD'. A large empty text box is at the bottom.

AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

Allwin21 Software

Board Test

The Board Test interface features a top menu bar with 'Exit' and 'Help' buttons. It is divided into three main sections: D/A BOARD, A/D BOARD, and DIGITAL I/O. The D/A BOARD section contains seven channels (CH0 to CH7), each with a 'D/A CH' label and a value of 0.000. The A/D BOARD section contains fifteen channels (CH0 to CH15), each with an 'A/D CH' label and a value of 0.000. The DIGITAL I/O section displays sixteen digital inputs (J2-1 to J2-18) with their respective status (0 or 1) and a 'PORT1' button labeled '0x20'. On the right side, there are two buttons: 'PORT2' labeled '0x28' and '0x28: ee'.

Pressure Calibration

The Pressure Calibration interface includes a top menu bar with 'Exit', 'Help', and 'CALIBRATION FOR RFL' buttons. It displays several sections: 'READING ON COMPUTER FEEDBACK' with four 'RECORD' buttons (1-4) and four 'FDBK' buttons (FDBK1(W) to FDBK4(W)) showing values like 1.7, 296.8, 486.4, and 789.5. 'READING FROM RF METER' shows four 'STD' buttons (STD1(W) to STD4(W)) with values 0.0, 302.0, 495.0, and 775.0. 'SETPOINT ON THE COMPUTER' shows four 'SET' buttons (SET1(W) to SET4(W)) with values 0.0, 300.0, 500.0, and 800.0. 'CALIBRATION FACTORS FOR SETPOINT' and 'CALIBRATION FACTORS FOR FEEDBACK' sections each contain 'UPDATE CALIB FACTORS', 'CALIB NUM', and 'RESET CALIB FACTORS' buttons, along with calibration factors (calib k1, calib b1, calib k2, calib b2, calib k3, calib b3) in scientific notation. Other parameters include 'RF ON', 'RF SPT(W)', 'RF RFL(W)', 'RF FWD(W)', 'Pressure(Tr)', 'Temp(°C)', 'EOP', and 'MAIN VACUUM PUMP OFF'. A status bar at the bottom indicates 'Chamber Door is CLOSE'.

AW-10R Plasma Asher Descum Clean Equipment

Advanced Technologies

Small Footprint

- **Width: 40"**
- **Depth: 60"**
- **Height: 70"**

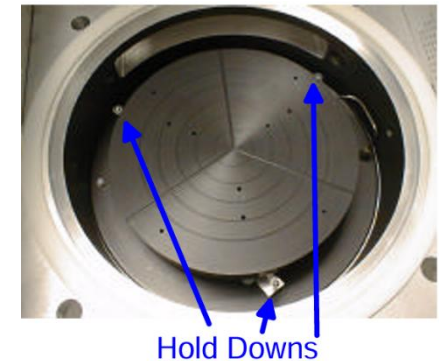


AW-10R Plasma Asher Descum Clean Equipment

Configurations and Typical Processes

Substrate Capability:

- 3",4",5",6",8"
- Round
- Multiple wafer sizes **without hardware change**



AW-10R Plasma Asher Descum Clean Equipment

Configurations and Typical Processes

RF Power and RF Matching:

- 13.56 MHz
- Air Cooling
- 1000W



AW-10R Plasma Asher Descum Clean Equipment

Configurations and Typical Processes

Temperature:

- 60-300°C
- Customized



AW-10R Plasma Asher Descum Clean Equipment

Configurations and Typical Processes

Gases:

- **1-4 Gases**
- **MFC-O2,5SLM,O2,500**
SCCM
- **Customized.**



AW-10R Plasma Asher Descum Clean Equipment

Configurations and Typical Processes

GEM/SEC II Function:

- Optional

This screenshot shows the configuration interface for the GEM/SEC II function. It includes sections for file paths (Process Program Dir, Equipment Constants, Alarm Configuration, Report Configuration), initialization settings (Process Program Code, Initial Comm State, Initial Control State), and configuration options (Alarm, Connect, Events, Set W-Bit to 1). The SIF2 model is set to Tegal-901 and the revision is U7.7A1. The GEM SECS II Communication Constant Setup is also visible.

This screenshot displays the status and command interface. The STATUS section shows the Communication State as COMMUNICATING, Enabled State as ENABLED, and Local/Remote State as LOCAL. The COMMANDS section includes buttons for Enable Communication, Remote Communication, Recipe Download, and Recipe Upload. The EQUIPMENT MESSAGE section has an Equipment Alarm Test button and an Equipment Message Send button. The HOST MESSAGE section is currently empty. The GEM: Statistic Manager section shows various states: IN REPAIR, IN PRODUCTION, SCHEDULED DOWNTIME, UNSCHEDULED DOWNTIME, ENGINEERING, and STANDBY.

This screenshot shows the GEM SECS II Test Screen. It includes buttons for Exit, Help, GEM SECS II TEST SCREEN, GEM SECS II MANAGER SCREEN, and GEM SECS II GEMSTONE.

This screenshot displays the GEM SECS II Manager Screen. It includes buttons for Exit, Help, SEND EVENT, and a CUID field set to 61. The GEM LIST section is empty. The HOST MESSAGE section is also empty. The EQUIPMENT MESSAGE section has an Equipment Alarm Test button and an Equipment Message Send button. The PROCESS DATA SEND button is also visible.

AW-10R Plasma Asher Descum Clean Equipment

Configurations and Typical Processes

EOP Function:

- Optional

The screenshot shows the EOP configuration interface with the following elements:

- Exit** button (top left).
- EOP NORMALIZE DISABLE** button (top center).
- EOP PERCENTAGE ENABLE** button (top center).
- PLASMAON EOP** button with value **0.00** (top right).
- RECIPE VERSION: AH-04** (top right).
- CREATED: 04-28-2017** (top right).
- CHANGED: 04-28-2017** (top right).
- Normalize Start time (sec)** input field with value **10**.
- Percentage Start time (sec)** input field with value **35**.
- Normalize Time (sec)** input field with value **0**.
- Recipe Normalize k** input field with value **0.000000**.
- EOP SENSE NEGATIVE LEVEL** button (center).
- SLOPE GAIN FACTOR** input field with value **1.0**.
- System Normalize k** input field with value **0.000000**.
- SLOPE AVERAGE NUM** input field with value **10**.
- Normalized Usalib** input field with value **0.00**.
- Slope check Start time (sec)** input field with value **10**.
- EOP HARDWARE GAIN** input field with value **4**.
- EOP HARDWARE OFFSET** input field with value **2.00**.

Configurations and Typical Processes

Asher Rate Capability

- ~600 A/min (Descum)
- ~1.5 $\mu\text{m}/\text{min}$ (Asher)
- Process Dependent



AW-10R Plasma Asher Descum Clean Equipment

Configurations and Typical Processes

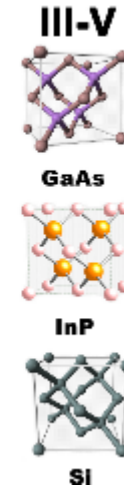
Uniformity Capability

- $< \pm 5 \sim 8\%$
- Process Dependent
- 6", 8" wafer



AW-10R Plasma Asher Descum Clean Equipment

Let's *All win* in the 21st Century



Email: sales@allwin21.com

AW-10R Plasma Asher Descum Clean Equipment

