AMAT Centura Polycide(W/Si Deposition) LPCVD's Specification

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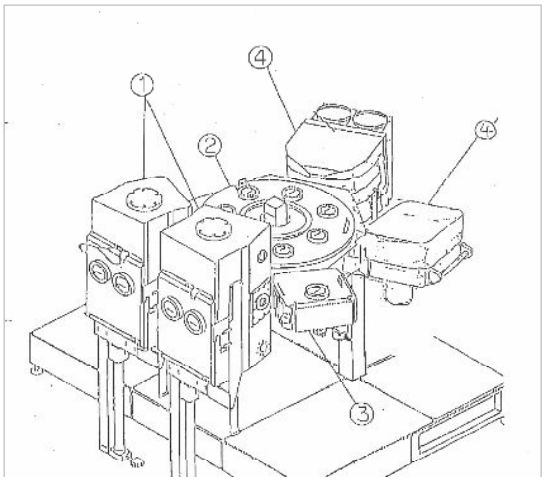
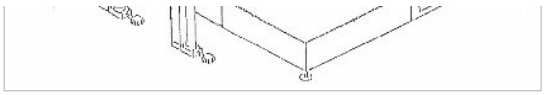
(Chapter 1) Overview and Components

This tool is single wafer and multi-chamber operation LPCVD.
This doped poly-Si and W/Si film deposition available within vacuum enviroment for 5″ to 8″ wafer.
And the tool assembled following components.

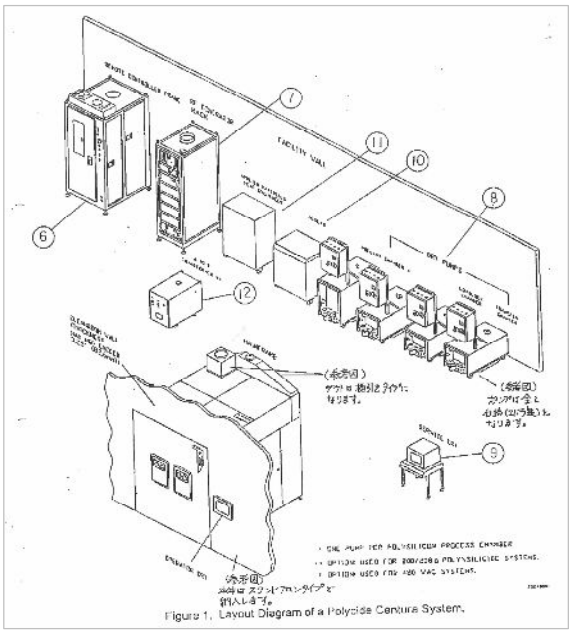
Main Frame (Fig-1)
(1) Lord-lock Chamber
(2) Transfer Chamber
(3) Cool-down Chamber
(4) Process Chamber - Poly-Si
(4') Process Chamber - W/Si
* Gas Panel / Interlock

Attachment (Fig-2)
(6) Remote Power Frame (Power Frame/Controler)
(7) RF Generator Rack
(8) Pump Frame (3 ea)
(9) CRT Monitor
(10) NESLAB Unit
(11) Heat Exchanger
(12) Delta->Y Transformer





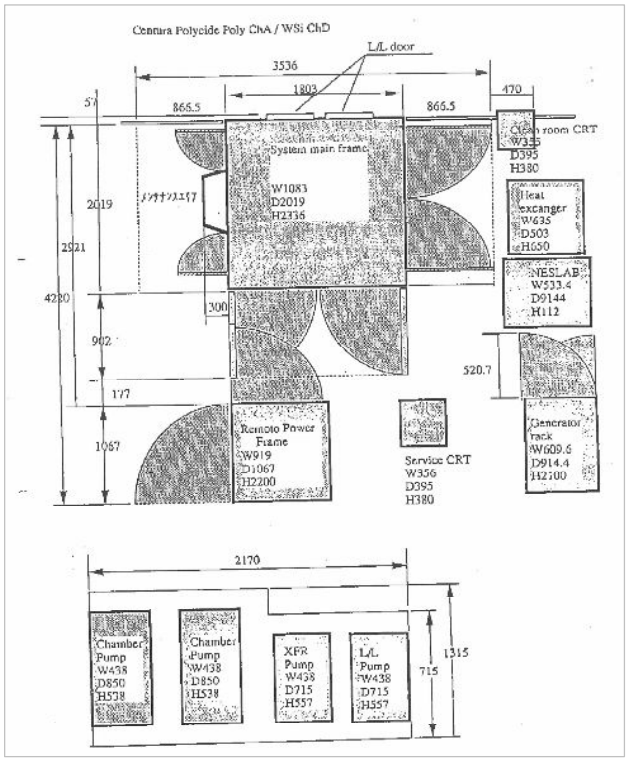
(Fig-1) Main Frame



(Fig-2) Attachments

(Chapter 2) Footprints

Please see Fig-3.



(Fig-3) Footprint

(Chapter 3) Specification

3.1 Main Frame

3.1.1 Load Lock Chamber
Capacity: 25 Wafers/Cassette x 2Cassette (26 Slot)
Stage Lifting: Verticale

3.1.2 Transfer Chamber
Robot operation: Horizontal and Rotation
Wafer Blade: Quartz

3.1.3 Cool Down Chamber
Cooling Method: Water Cooling
Stage Lifting: Verticale

3.1.4 Poly-Si Chamber
#of chamber: 1 (Pos A)
Wafer Rotation (on process): 5 to 10 rpm
Temperature: 580 to 1230 'C
Pressure: 25 to 700 Torr

Base Ring: SUS 316
Top/Bottom Dome: Quartz
Wafer holding finger: Quartz
Inner wall protection ring: Quartz
Sucepter: SiC coated Carbon
Pre Heat Ring/Sucepter Holding finger: Quartz
Wafer heating lamp module: Halogene Lamp (20 ea)

3.1.5 W/Si Chamber

#of chamber: 1 (Pos D)
Process: SiH4 Process
Chamber's Concept: Cold-wall faith-up
Heating Method: Lamp-up
Sucepter: Al-Alloy
Temperature Monitor: Closed loop control
Wafer Stage: Wafer Lift-pin
Process Gas Distribution: Shower Head
Process Gas Mixing Method: Dual Gas Inlet
Electrode's Distanse: Variable
Chamber wall's Temperture: Control available
Vacuum Rate: 5E-3 Torr
Chamber's Material: Al Alloy
Leak Rate: 1.0 mTorr/min

3.1.6 Poly-Si Gas Pannel

MFC: 5ea/Chamber
Gas Pipe: EP Pipe
Gas line: (1-1)H2 10slm, (1-2)H2 20slm, (2) SiH4 1slm, (3) PH3 0.3
(4) HCl 10slm, (5) SiH2Cl2 1slm

3.1.7 W/Si Gas Panel

MFC: 6ea/Chamber
Gas Pipe: EP Pipe
Gas line: (1-1)N2 1slm, (2) N2 1slm, (3) SiH4 0.5 slm,
(4) WF6 5sccm, (5) NF3 1slm, (6) Ar 1slm

3.1.8 Interlock

EMO S/W: 8 ea
Immediately stop S/W: All high voltage panel
Exhaust Flow S/W: 1ea
Cooling Flow S/W
etc.

3.2 Remote Power Frame

3.2.1 Power Frame
AC power distribution box
Power transformer
SCR transformer
Pump connect control box

3.2.2 Controler: 32bit MPU

3.3 Pump Frame: EBARA A series / 3 ea

3.4 CRT Monitor
CRT Monitor (Light pen operation available, Flush mount type)
CRT Monitor (Light pen operation available, Desktop type)
* Storage in C/R Side and Maintenace Side.