
1.0 INTRODUCTION

Application

This specification is available for the CLEAN TRACK ACT 8 which is the most recent model in the highly successful CLEAN TRACK series of Tokyo Electron Limited.

Equipment Overview

CLEAN TRACK ACT 8 is used in the photolithography process. It is microprocessor controlled system automating all processes continually including adhesion promoter, pre-baking, coating, development and post-baking.

Warranty for the Products

TEL shall warrant the Products to be free from defects in material and workmanship.

The foregoing warranty shall not cover any troubles and damages of the Products caused by the parts designated or supplied by the user, if the user does not show any documents which certificates the safety of such parts or if TEL does not accept such certificate the user shows.

Even if TEL accepts such certificate the user shows, TEL does not warrant such parts to be free from defects in material and workmanship.

Warranty Period

As to the warranty period, please refer to the purchase contract of the Products.

Extent of Warranty

The user's remedies and TEL's liability under this warranty are not available if the troubles and damages of the Products are caused by natural disaster, the user's improvement without TEL's consent, misuse or use of improper process material.

The expenses required for the spare parts, labor, transportation, etc., in order to maintain the Products after the expiration of the warranty period shall be borne by the user.

Damage and Liability

Every operator and service person must read and thoroughly understand the operation and maintenance manuals and any additional information provided by TEL with respect to the Products.

All Danger, Warning and Cautionary notices must be carefully read, thoroughly understood and strictly observed.

TEL assumes no liability for damage due to improper operation or misuse of the Products. Please make every effort to operate the Products properly and safely.

TEL assumes no liability for damage resulting from no action of FCN by the user in spite of TEL's notice. Please make every effort to keep the Products properly.

The users of the Products assume its responsibility to implement all Governmental, Federal, State and local safety regulations applicable to the use of the Products.

THE REPAIR OR MODIFICATION OF THE PRODUCTS WITH THE PARTS OR COMPONENTS NOT SPECIFIED BY TEL MAY RESULT IN IMPROPER OR DANGEROUS OPERATION OF THE PRODUCTS.

TEL disclaims all liability for any damages or liability arising from any claim for the personal injury, property damage or improper operation of the Products caused in whole or in part by the use of any part or parts in the Products not supplied by TEL.

NOTWITHSTANDING HEREBOVE, TEL SHALL NOT BE LIABLE FOR LOSS AND DAMAGE RESULTING FROM OPERATION OF THE PRODUCTS. TEL shall be liable for the personal injury resulting from TEL's performance or work of the Products, in accordance with the law and regulations prevailing the location of such incident.

Equipment Installation

If the user's facilities (facility hook up, chemicals, wafers, etc.) are not prepared by the user in time, TEL may change the installation

schedule. In this case, installation engineers of TEL may repatriate from user's site for a time.



Definition of Consumables

Those parts that require replacement within certain periods from the start of system operation due to degradation and wear, parts that are started to be degraded and worn after the start of the manufacture and parts that are degraded and worn after the start of their use are defined as "consumables." Degradation and wear do not include damage and wear caused by design elements and damage and wear due to the manufacturing processes of the parts. The consumables of the Clean Track system are listed below:

	Consumable	Example
1	Parts requiring replacement due to time after manufacture of parts themselves.	Rubber products, etc
2	Parts requiring replacement due to operating hours(system operation hours)	Lamps, etc
3	Parts that start to be degraded and worn simultaneously with the start of their use.	Nozzle chips, wetted parts, etc
4	Disposable parts and non-warranty parts	Disposal cups, grease, etc



2 System Specification

2.1 Configuration

Chemical Cabinet (1) (2000Wx700Lx1800H)	Thermostatic Water Supply Unit(1) (450Wx1050Lx1400H)	Cup T&H Controller (1) (580Wx950Lx1174H)	AC POWER BOX (1) (600Wx600Lx1595H)	Drain Pump BOX (1) (600Wx700Lx1800H)
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3-5 EIS	3-0 IRA	2-24 HHP	2-29	2-14 HHP	1-4 UNC
		2-23 CHP	2-28	2-13 LHP	
		2-22 CHP	2-27	2-12 LHP	
		2-21 LHP	2-26	2-11 LHP	
		2-20 CWH	2-25	2-10 CWH	1-3 UNC
		2-19 CPL		2-9 CPL	
		2-18	2-0 PRA	2-8 TRS-R	1-2 UNC
		2-17 CPL		2-7 TCP-R	
		2-16 TRS		2-6	
		2-15 CPL		2-5 ADH	
3-3 SBU	2-3 DEV	2-4 DEV	1-1 UNC		
3-2 SBU	2-1 COT	2-2 TCT	1-5 PUP		
3-1 THS					

UNC : Uni-Cassette Stage	PUP : Pick Up Cassette Stage	COT : Coat Process Station
BCT : Bottom Layer Coat Process	TCT : Top Layer Coat Process Station	DEV : Develop Process Station
TRS : Transition Stage	ADH : Adhesion Process Station	CPL : Chill Plate Process Station
CWH : Cup Washer Holder	LHP : Low Temperature Hot Plate	HHP : High Temperature Hot Plate
TCP : Transitional Chill Plat	SBU : Stationary Buffer	WEE : Wafer Edge Exposure Process Station

*Required set up condition

Main Body	Temperatur	: Set up main body within +/- 2.0 C from room temperature. Room temperature should be within 20 to 25 C.
	Humidity	: None dewy condition.
External	Temperatur	: Set up main body within +/- 4.0 C from room temperature. Room temperature should be within 20 to 25 C.
	Humidity	: None dewy condition.



2.2 External Cabinets Location

- Chemical Cabinet(1) : Identical Floor Rear (m)
- Thermostatic Water Supply Unit(1) : Identical Floor Rear (m)
- Cup T&H Controller(1) : Identical Floor Rear (m)
- AC Power Box(1) : Identical Floor Rear (m)
- Drain Tank Box(1) :



2.3 Wafer Flow

Wafer Flow	CSB	TRS	ADH	CPL	COT	LHP	CPL	TCT	LHP	CPL	IFB	TRS	CHP	CPL	DEV	LHP	TCP
Station Number		1	1	1	1	1	1	1	1	1			2	1	2	1	1
Process Time			55	35	50	60	45	50	60	35			90	10	80	60	35
Over Head Time			6	6	13	6	6	13	6	6			35	6	8	6	8
TOTAL																	
																	CSB

PROCESS : 0processes 0sec

THROUGHPUT : 0wph



2.4 Basic Specifications

- Wafer

Size : 200 mm

Material : Silicon

Shape : Notched

- Chemical

Resist :

Solvent :

Developing Solution :

HMDS :

- Main Body Utility Outlet : Rear Vertical Down

- Cup T&H Controller (First)

Type : CPE-2

Applicable Station : 2-1

2-2

- CAR Capable : Apply to chemical amplified resist process.

- Continuous Process Same Lot : Stop Next Wafers



3 Station Specifications

3.1 Cassette Block

3.1.1 Cassette Block(1)

- Dimensions : 590 mm (W) * 1570 mm (L) * 2145 mm (H)
- Cassette Stage Height : 1055 mm
- Wafer Transport Method : Single Pincette Shared Transport Method (X,Y,Z,Theta)
Vacuum-Free Transport Supported by Contact Minimizing Ceramic Pincette
- Wafer Indexing Method : Selected either sender/receiver mode or uni-cassette mode.
- Centering Method : Mechanical Centering Using Centering Guides
- Sensor
 - Cassette Sensor : Photo-interrupter sensor monitoring cassette to be set correctly.
 - Mapping Sensor : Transmission type laser beam sensor checking wafer position in cassette.
 - Wafer Out Sensor : Infrared transmission sensor detecting wafers out from the cassette.
 - Wafer Sensor : Transmission sensor monitoring wafers on pincette.
- Command Switch : Lot start/stop key set on each cassette, showing cassette status by LED.
- Recipe-showing LCD : Current recipes displayed for each cassette.
- Pick-up Cassette Stage : Pick-up cassette stage is installed. (Standard with In-Line System)
- Alarm Lamp : LED 3-colors type alarm lamp is installed.
- Borrow Cassette from Customer : None (Shipment after Adjustment Done with TEL Standard Cassette PA192-80M)
- Chemical Inner Door : Doors made by transparent polycarbonate are installed inside of chemical area doors.



3.2 Process Block

3.2.1 Process Block(2)

- Dimensions : 1240 mm (W) * 1550 mm (L) * 2425 mm (H) (Apply for 4 Spinners)
- Wafer Transport Method : Three Pincette Shared Transport Method (X1,X2,X3,Z,Theta)
Automatic Centering Using Centering Guides
Accuracy +/- 0.3 mm (Excluding Wafer Distortion)
- Centering Method : Mechanical Centering Using Centering Guides
- Wafer Sensor : Transmission Sensor
- Slide Window : Smoke-Brown Polycarbonate (Observe Section : Transparent Polycarbonate)
- Chemical Inner Door : Doors made by transparent polycarbonate are installed inside of chemical area doors.
- Sub-Operation Panel : Sub-operation panel is installed in front side of the process block.
- Process Block Arm :
- FFU Capable : Fan filter unit (Anhydrous silicagel tested) is installed.



3.3 Coat Process Station

3.3.1 Coat Process Station(2-1)

- Rotation Rate : 0, 10 to 6,000 rpm within +/- 1 rpm (Set in a Minimum Unit of 1 rpm)
- Acceleration : 100 to 50,000 rpm/sec (Set in a Minimum Unit of 100 rpm/sec)
- Process Recipes : 1,000 Recipes (Total of Spinner Station)
- Recipe Steps : 100 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 100 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Rotation Rate (Set in Recipe)
*Alarm rpm Bandwidth (Alarm Only) and Stop rpm Bandwidth (Station Process Stop)
*Alarm/Stop rpm Setting Range : +/- 0 to 1,000 rpm (Set in a Minimum Unit of 1 rpm)
- Dummy Dispense Function : According to dummy dispense recipe (can also be set from sub-operation panel).
Dispense conditions : specified from time interval and/or each lot start.
- Nozzle Scan Speed : 10 to 250 mm/sec
- Nozzle Changer Function : Up to 4 nozzle blocks installed ; Switching the blocks by shifting changer.
- Nozzle Bath Standby Function : Solvent is stored in the nozzle receiving block outside the cup, and nozzle tip is held above it (dummy dispense also performed here).
- Side Rinse Arm Mechanism : Vertical motion (up/down) by cylinder ; Horizontal motion (in/out) by stepping motor.
- Side Rinse Arm Velocity : 1 to 150 mm/sec
- Chuck
 - Shape, Material, Diameter : Concentric Circles, PEEK + CF, 80 mm diameter
 - Chuck Vacuum Sensor : Pressure Sensor with Digital Display (Alarm band can be set.)
 - Chuck Up VAC Off Switch : If malfunction occurs within the station and the spin sequence stops, this switch can be used for manual driving to remove unfinished wafers.
- Spin Stop Switch : Using momentary switch to stop spin motor.
- Number of Nozzles : Comply to customer requirement.
- Resist Temperature Control : Three-Layers-Tube Temperature Control : Indirect Temperature Control Using Thematic Water (Thermo-Module Method)
Accuracy +/- 0.2 Centigrade (at Nozzle Tip)
*The above performance is held under the following condition :
Setting is to room temperature, and the temperature in the chemical bottle is within +/- 1.0 Centigrade from the room temperature.
- Resist Filter : 16 Layers Housing Type
- Resist Filter Type :
- Resist Pump : Motor Action Bellows Pump



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- Resist L/E Sensor : 200 ml (Transmission Sensor W)
 - Resist Bottles : Quart Bottles
Comply to customer requirement.
 - Side Rinse Nozzle : Stainless Reduced-Diameter Nozzle (0.3 mm)
 - Back Rinse Nozzle : 2 Stainless Reduced-Diameter Nozzles
 - Solvent Filter : Disposable Type
 - Solvent Filter Type :
 - Solvent L/E Sensor : 300 ml (Transmission Sensor)
 - Solvent Supply Method : 1 Canister Supply
 - Solvent Canister Size : Comply to customer requirement.
 - Solvent Canister Type : ALLOY
 - Solvent Canister Socket : ALLOY
 - Drain Method : Auto Drain Type (Factory Direct Drain Type)
 - Exhaust Monitor : Digital Manometer 0 to 100 pa
 - Cup Material : PP (Cutting)
 - Cup Sensor : Checking cup placement by means of the cup itself pushed against a pin which is set on the bottom of the cup base.
 - Shutter : Placed at the entrance of the spinner process station for wafer in/out.



3.4 Top Layer Coat Process Station

3.4.1 Top Layer Coat Process Station(2-2)

- Rotation Rate : 0, 10 to 6,000 rpm within +/- 1 rpm (Set in a Minimum Unit of 1 rpm)
- Acceleration : 100 to 50,000 rpm/sec (Set in a Minimum Unit of 100 rpm/sec)
- Process Recipes : 1,000 Recipes (Total of Spinner Station)
- Recipe Steps : 100 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 100 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Rotation Rate (Set in Recipe)
*Alarm rpm Bandwidth (Alarm Only) and Stop rpm Bandwidth (Station Process Stop)
*Alarm/Stop rpm Setting Range : +/- 0 to 1,000 rpm (Set in a Minimum Unit of 1 rpm)
- Dummy Dispense Function : According to dummy dispense recipes (can also be set from sub-operation panel).
Dispense condition : specified from time interval and/or each lot start.
- Nozzle Scan Speed : 10 to 250 mm/sec
- Nozzle Changer Function : Up to 4 nozzle blocks installed ; Switching the blocks by shifting changer.
- Nozzle Bath Standby Function : Solvent is stored in the nozzle receiving block outside the cup, and nozzle tip is held above it (dummy dispense also performed here).
- Side Rinse Arm Mechanism : Vertical motion (up/down) by cylinder ; Horizontal motion (in/out) by stepping motor.
- Side Rinse Arm Velocity : 1 to 150 mm/sec
- Chuck
 - Shape, Material, Diameter : Concentric Circles, PEEK + CF, 80 mm diameter
 - Chuck Vacuum Sensor : Pressure Sensor with Digital Display (Alarm band can be set.)
 - Chuck Up VAC Off Switch : If malfunction occurs within the station and the spin sequence stops, this switch can be used for manual driving to remove unfinished wafers.
- Spin Stop Switch : Using momentary switch to stop spin motor.
- Number of Nozzles : Comply to customer requirement.
- TARC Temperature Control : Three-Layers-Tube Temperature Control : Indirect Temperature Control Using Thermostatic Water (Thermo-Module Method)
Accuracy +/- 0.2 Centigrade (at Nozzle Tip)
*The above performance is held under the following condition :
Setting is to room temperature, and the temperature in the chemical bottle is within +/- 1.0 Centigrade from the room temperature.
- TARC Filter : 16 Layers Housing Type
- TARC Filter Type :
- TARC Pump : Motor Action Bellows Pump



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- TARC L/E Sensor : 200 ml (Transmission Sensor W)
 - TARC Bottles : Quart Bottles
Comply to customer requirement.
 - Side Rinse Nozzle : Stainless Reduced-Diameter Nozzle (0.3 mm)
 - Back Rinse Nozzle : 2 Stainless Reduced-Diameter Nozzles
 - Solvent Filter : Disposable Type
 - Solvent Filter Type :
 - Solvent L/E Sensor : 300 ml (Transmission Sensor)
 - Solvent Supply Method : 1 Canister Supply
Branching from Another Module
 - Solvent Canister Size : Comply to customer requirement.
 - Solvent Canister Type : ALLOY
 - Solvent Canister Socket : ALLOY
 - Drain Method : Factory Direct Drain (Without Pump)
 - Exhaust Monitor : Digital Manometer 0 to 100 pa
 - Cup Material : PP (Cutting)
 - Cup Sensor : Checking cup placement by means of the cup itself pushed against a pin
which is set on the bottom of the cup base.
 - Shutter : Placed at the entrance of the spinner process station for wafer in/out.
 - System Acidproof Specification : Present



3.5 Develop Process Station

3.5.1 Develop Process Station(2-3)(2-4)

- Rotation Rate : 0, 10 to 5,000 rpm within +/- 1 rpm (Set in a Minimum Unit of 1 rpm)
- Acceleration : 100 to 20,000 rpm/sec (Set in a Minimum Unit of 100 rpm/sec)
- Process Recipes : 1,000 Recipes (Total of Spinner Station)
- Recipe Steps : 100 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 100 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Rotation Rate (Set in Recipe)
 - *Alarm rpm Bandwidth (Alarm Only) and Stop rpm Bandwidth (Station Process Stop)
 - *Alarm/Stop rpm Setting Range : +/- 0 to 1,000 rpm (Set in a Minimum Unit of 1 rpm)
- Dummy Dispense Function : According to dummy dispense recipe (can also be set from sub-operation panel).
Dispense condition : specified from time interval and/or each lot start.
- Nozzle Scan Speed : 15 to 250 mm/sec
- Rinse Arm Mechanism : Vertical motion (up/down) by cylinder ; Horizontal motion (in/out) by stepping motor.
- Rinse Arm Speed : 10 to 200 mm/sec
- Chuck
 - Shape, Material, Diameter : Concentric Circles, PEEK + CF, 80 mm diameter
 - Chuck Vacuum Sensor : Pressure Sensor with Digital Display (Alarm band can be set.)
 - Chuck Up VAC Off Switch : If malfunction occurs within the station and the spin sequence stops, this switch can be used for manual driving to remove unfinished wafers.
- Spin Stop Switch : Using momentary switch to stop spin motor.
- Number of Nozzles : H Nozzle 2 Set
- Developing Solution Temperature Control : Developing Solution Line (Temperature Control Up to Tip) : Indirect Temperature Control Using Thermostatic Water (Thermo-Module Method)
Accuracy +/- 0.2 Centigrade (at Nozzle Tip)
*The above performance is held under the following condition :
Setting is to room temperature, and the temperature in the chemical bottle is within +/- 1.0 Centigrade of the room temperature.
- Developing Solution Filter : Disposable Type
- Developing Solution Filter Type :
- Developing Solution Supply : 1 Canister Supply
Method
- Developing Solution Canister Size : 3 Gallon



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- Developing Solution Canister : ALLOY
Type
 - Developing Solution Canister : ALLOY
Socket
 - D.I.Water Rinse Nozzle : 1 Nozzle
 - Back Rinse Nozzle : 2 Nozzles
 - D.I.Water Filter : Disposable Type
 - D.I.Water Filter Type :
 - D.I.Water Supply Method : Factory Direct Supply
 - Drain Method : Factory Direct Drain
 - Exhaust Monitor : Digital Manometer 0 to 100 pa
 - Cup Material : PP + Delrin (Cutting)
 - Cup Sensor : Checking cup placement by means of the cup itself pushed against a pin
which is set on the bottom of the cup base.
 - Shutter : Placed at the entrance of the spinner process station for wafer in/out.



3.6 Adhesion Process Station

3.6.1 Adhesion Process Station(2-5)

- Temperature Range : 50 to 180 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
- Plate Temperature Accuracy : 50.0 to 120.0 Centigrade R \leq 0.4 Centigrade
120.1 to 150.0 Centigrade R \leq 0.8 Centigrade
150.1 to 180.0 Centigrade R \leq 1.2 Centigrade
Note) The temperature accuracy given above is the accuracy for a single hot plate along with a single temperature range.
- Process Recipes : 1,000 Recipes (Total of Oven Station)
- Recipe Steps : 20 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 20 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Temperature (Set in Recipe)
*Alarm Temperature Bandwidth (Alarm Only) and Stop Temperature Bandwidth (Station Process Stop)
*Alarm/Stop Temperature Setting Range : +/- 0.1 to 25.0 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
Note) Depending on the temperature accuracy of the plate, range of actual minimum set value may be limited.
- Number of Dispense : 5
- Chamber Processing Method : HMDS vapor processing ; P.I.D. control by a hot plate.
- Temperature Display : Status display on main control panel (LCD panel).
- Hot Plate Material : Hard anodized aluminum oxalic acid treatment on aluminum surface.
- Prevention of Excessive Temperature Rise : Independent Thermo-Switch for Hot Plate Overheating Protection (Hardware Interlock)
- Chamber Cover Interlock : When the chamber cover is removed, interlock mechanism is activated to stop wafer transport.
- Dummy Dispense Function : According to dummy dispense recipe (can also be set from sub-operation panel).
Dispense condition : specified from time interval or/and each lot start.
- Dispense Method : HMDS Vapor Prime Method
- HMDS Supply Method : Canister Auto Supply
- Canister Size (Bottle Size) : 3 Gallon
- Canister Type (Bottle Type) : ALLOY
- Canister Socket : ALLOY
- Canister (Bottle) Location : Chemical Cabinet (1)
- Jar Location : Chemical Cabinet (1)
- Processing Method : Proximity Method (Proximity of 0.1 mm)
- 3 Pin Material : Stainless + Polyimide



3.7 Chill Plate Process Station

3.7.1 Chill Plate Process Station(2-9)(2-15)(2-17)(2-19)

- Temperature Range : 15 to 30 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
- Plate Temperature Accuracy : 15.0 to 30.0 Centigrade (Set in a Minimum Unit of +/- 0.2 Centigrade)
Note) The temperature accuracy given above is the accuracy for a single hot plate along with a single temperature range.
- Process Recipes : 1,000 Recipes (Total of Oven Station)
- Recipe Steps : 20 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 20 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Temperature (Set in Recipe)
*Alarm/Stop Teperature Bandwidth (Alarm Only) and Stop Temperature Bandwidth (Station Process Stop)
*Alarm/Stop Temperature Setting Range : 0.1 to 25.0 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
Note) Depending on the temperature accuracy of the plate, range of actual minimum set value may be limited.
- Plate Temperature Control : Temperature control using circulated thermostatic water.
Method
- Temperature Display : Status displayed on a main control panel (LCD panel).
- Cooling Plate Material : Hard anodized aluminum oxalic acid treatment on aluminum surface.
- Processing Method : Proximity Method (Proximity of 0.1 mm)
- 3 Pin Material : Stainless + Polyimide
- Cooling Method : Thermo-Module Type



3.8 Transition Chill Plate Process Station

3.8.1 Transition Chill Plate Process Station(2-7)

- Process Recipes : 1,000 Recipes (Total of Oven Station)
- Recipe Steps : 20 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 20 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : None
- Plate Temperature Control : None (Depend on temperature of chilly water)
- Method
- Temperature Display : None
- Cooling Plate Material : Hard anodized aluminum oxalic acid treatment on aluminum surface.
- Processing Method : Proximity Method (Proximity of 0.1 mm)
- 3 Pin Material : Stainless Steel + Polyimide
Silicon Coating on Alumina Surface (Apply to 1 Pin among 3 Pins)
- Cooling Method : Cooling by flow of thermostatic water in pipe of cooling plate.



3.9 Low Temperature Hot Plate Process Station

3.9.1 Low Temperature Hot Plate Process Station(2-11)(2-12)(2-13)(2-21)

- Temperature Range : 50 to 200 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
- Plate Temperature Accuracy : 50.0 to 120.0 Centigrade R \leq 0.4 Centigrade
120.1 to 150.0 Centigrade R \leq 0.8 Centigrade
150.1 to 200.0 Centigrade R \leq 1.2 Centigrade
Note) The temperature accuracy given above is the accuracy for a single hot plate along with a single temperature range.
- Process Recipes : 1,000 Recipes (Total of Oven Station)
- Recipe Steps : 20 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 20 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Temperature (Set in Recipe)
*Alarm Temperature Bandwidth (Alarm Only) and Stop Temperature Bandwidth (Station Process Stop)
*Alarm/Stop Temperature Setting Range : 0.1 to 25.0 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
Note) Depending on the temperature accuracy of the plate, range of actual minimum set value may be limited.
- Hot Plate Control Method : P.I.D. control by a platinum resistance (temperature sensor).
- Temperature Display : Status displayed on a main control panel (LCD panel).
- Hot Plate Material : Hard anodized aluminum oxalic acid treatment on aluminum surface.
- Prevention of Excessive Temperature Rise : Independent Thermo-Switch for Hot Plate Overheating Protection (Hardware Interlock)
- Oven Cover : Stainless Insulated Exhaust Cover
- Cover Interlock : When station cover is removed, interlock works to stop wafer transport.
- Processing Method : Proximity Method (Proximity of 0.1 mm)
- 3 Pin Material : Stainless + Polyimide



3.10 High Temperature Hot Plate Process Station

3.10.1 High Temperature Hot Plate Process Station(2-14)(2-24)

- Temperature Range : 50 to 350 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
- Plate Temperature Accuracy : 50.0 to 120.0 Centigrade R \leq 1.0 Centigrade
120.1 to 150.0 Centigrade R \leq 1.5 Centigrade
150.1 to 200.0 Centigrade R \leq 2.0 Centigrade
200.1 to 300.0 Centigrade R \leq 3.0 Centigrade
300.1 to 350.0 Centigrade R \leq 5.0 Centigrade

Note) The temperature accuracy given above is the accuracy for a single hot plate along with a single temperature range.
- Process Recipes : 1,000 Recipes (Total of Oven Station)
- Recipe Steps : 20 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 20 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Temperature (Set in Recipe)
*Alarm Temperature Bandwidth (Alarm Only) and Stop Temperature Bandwidth (Station Process Stop)
*Alarm/Stop Temperature Setting Range : 0.1 to 25.0 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)

Note) Depending on the temperature accuracy of the plate, range of actual minimum set value may be limited.
- Hot Plate Control Method : P.I.D. control by a platinum resistance (temperature sensor).
- Temperature Display : Status displayed on a main control panel (LCD panel).
- Hot Plate Material : Hard anodized aluminum oxalic acid treatment on aluminum surface.
- Prevention of Excessive Temperature Rise : Independent Thermo-Switch for Hot Plate Overheating Protection (Hardware Interlock)
- Oven Cover : Stainless Insulated Exhaust Cover
- Cover Interlock : When station cover is removed, interlock works to stop wafer transport.
- Processing Method : Proximity Method (Proximity of 0.2 mm)
- 3 Pin Material : Ceramic



3.11 Chilling Hot Plate Process Station

3.11.1 Chilling Hot Plate Process Station(2-22)(2-23)

- Temperature Range : 50 to 180 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
- Plate Temperature Accuracy : 50.0 to 90.0 Centigrade R \leq 0.5 Centigrade
90.1 to 120.0 Centigrade R \leq 0.6 Centigrade
120.1 to 150.0 Centigrade R \leq 0.8 Centigrade
150.1 to 180.0 Centigrade R \leq 1.0 Centigrade
Note) Above temperature accuracy is guaranteed by measurement method shown below.
Measurement Tool : 5 Points Thermocoupler Wafer (TEL's Original)
Measurement Method :
 1. Set the oven temperature to 120.0 Centigrade and stabilize.
 2. Measure at each point for every 10 seconds interval for 2 minutes.
(In other words, 13 samples for each point or total of 65 samples for all 5 points)
 3. Gets an average at each point, and check if the average at each point is within a specification range.
- Process Recipes : 1,000 Recipes (Total of Oven Station)
- Recipe Steps : 20 Steps
- Processing Time Setting : 0 to 999.9 (sec/step) * 20 (Set in a Minimum Unit of 0.1 sec)
- Dual Band Alarm Function : Double Monitoring Function for Temperature (Set in Recipe)
*Alarm Temperature Bandwidth (Alarm Only) and Stop Temperature Bandwidth (Station Process Stop)
*Alarm/Stop Temperature Setting Range : 0.1 to 25.0 Centigrade (Set in a Minimum Unit of 0.1 Centigrade)
Note) Depending on the temperature accuracy of the plate, range of actual minimum set value may be limited.
- Hot Plate Control Method : P.I.D. control by a platinum resistance (temperature sensor).
- Temperature Display : Status displayed on a main control panel (LCD panel).
- Hot Plate Material : Aluminum with TAFLAM treatment on the surface.
- Prevention of Excessive Temperature Rise : Independent Thermo-Switch for Hot Plate Overheating Protection (Hardware Interlock)
- Oven Cover : Stainless Insulated Exhaust Cover
- Cover Interlock : When station cover is removed, interlock works to stop wafer transport.
- Leak Sensor : 1 sensor per 1 process station (placed above drain plate under chilling plate).
- Processing Method : Proximity Method (Proximity of 0.1 mm)
- 3 Pin Material : Stainless + Polyimide



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- Cooling Method : Chilly Water Circulation in Plate
 - Cooling Plate Ability : Cooling a Wafer Temperature from 120.0 Centigrade down to 40.0 Centigrade in less than 20 sec.
Note) Above temperature accuracy is guaranteed by measurement condition shows below.
Measurement Tool : 5 points Thermocoulper Wafer (TKL's original)
Conditions : Chilly Water Flow Rate 2 L/min.
Chilly Water Temperature 15 to 25 Centigrade
 - Cooling Plate Material : Aluminum with non-electrolyzed nickel treatment on the surface.
 - Purge Function : AIR Pump Method



3.12 Wafer Edge Exposure Process Station

3.12.1 Wafer Edge Exposure Process Station(3-4)

- Exposure Mode : Fixed Intensity Exposure Mode/Accumulation Exposure Mode
- Exposure Shape : Round/Linear/Selective Area
- Exposure Count : 0 to 27 Rotations (Selective Angle : MAX 9,999 degrees)
- Exposure Speed : 8 to 99.9 sec/rotation
- Exposure Width Setting : 200 mm Wafer : 0 to 30 mm (100 micrometer)
*The above number is distance from edge of wafer. It excludes notched area.

- Light Source : Lamp : 250 W Ultra Pressure Mercury Lamp
Wave Range : 200 to 400 nm
Initial Warranty Minimum Value : 1,800 mW/cm² (365 nm above Wafer Center)
Initial Warranty Minimum Value : 300 mW/cm² (254 nm above Wafer Center)
Illumination Stability : Within +/- 2 % (10 min. after Power On)
Lamp Warranty Time : 1,000 hours (More Than 70 % of Initial Warranty Value)

- Illumination Check : 1. After Every Wafer in
2. At Every Lot Start
3. At Every Specified Interval 10 to 9,999 sec (Unit of 1.0 sec)
4. No Check
Select a Recipe from above

- Mask (Cartridge) : 5 * 4 (Wafer Shape : Notched)
- Wave Capable : Deep UV (254 nm)



3.13 Interface Block

3.13.1 Interface Block(3)

- Dimensions : 470 mm (W) * 1570 mm (L) * 2145 mm (H)
- Stepper :
- Wafer Transport Method : Single Pincette Shared Transport Method (X,Y,Z,Theta)
Vacuum-Free Transport Supported by Pincette (Stainless + Teflon)
- Centering Method : Mechanical Centering Using Centering Guides
- Wafer Out Sensor : Infrared transmission type sensors detecting wafers sliding out from the cassette.
- Buffer : 1 Set (At Shipment : 25 Wafers Setting)
- Buffer Type : Material : PBT (Polybutylene Terephthalate) (26 Slots Type)
- FFU Capable : Fan filter unit (Anhydrous silicagel tested) is installed.



4 Chemical Supply/Drain System

4.1 HMDS Auto Supply (HMDS Vapor Prime)(2-5)

- HMDS Auto Supply (HMDS Vapor Prime)

Jar Type

: Material : PFA, Capacity : 3 L



Option Contents

- HMDS AUTO SUPPLY(VAPOR)
- HMDS AUTO SUPPLY(VAPOR)

