F-REX200 SPEC

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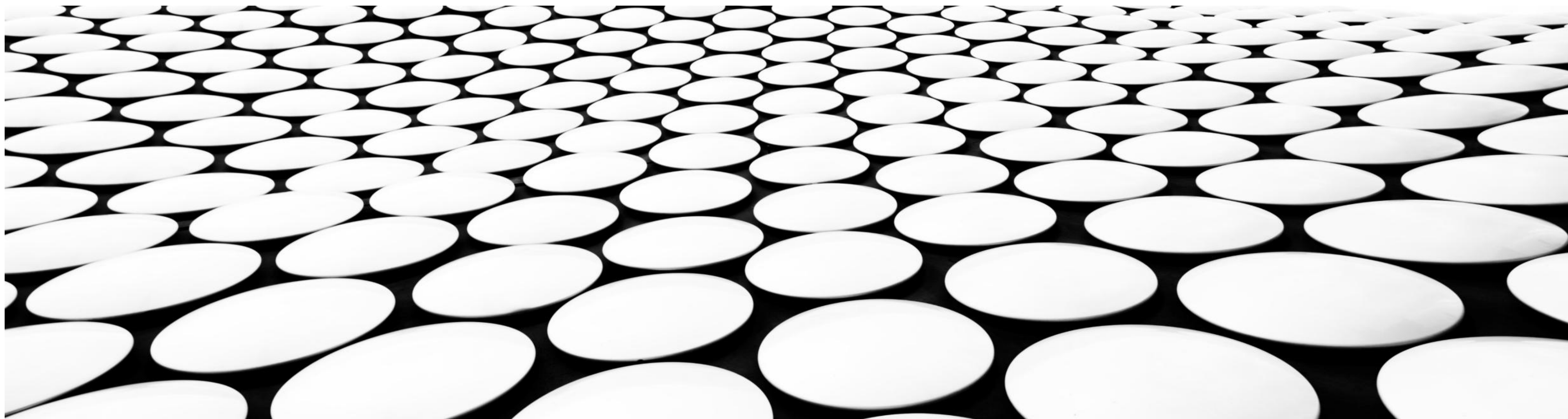
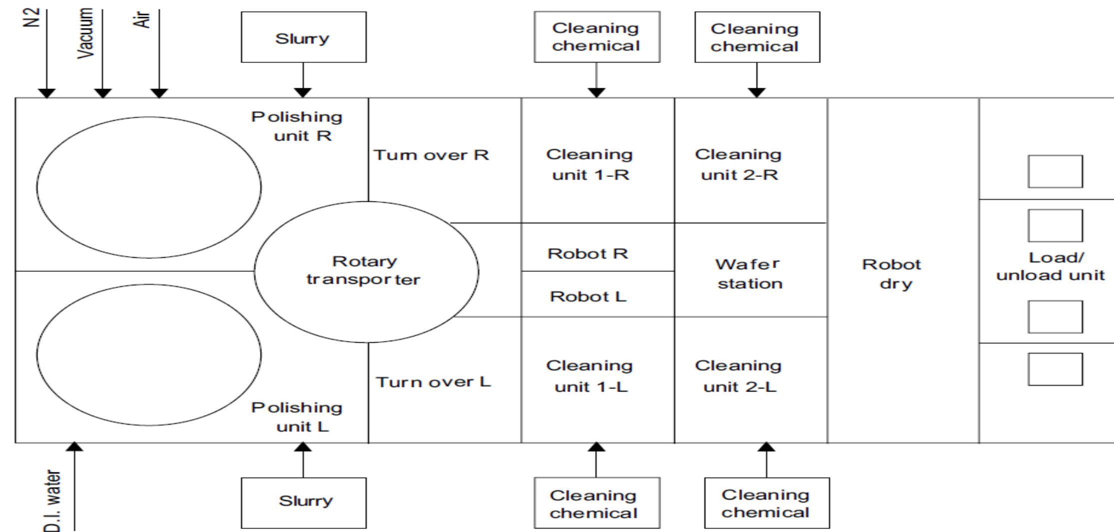


1. SPECIFICATION

Tool ID	F-Rex200	OEM / Model	EBARA / F-Rex200
Serial No #		Process	
Vintage	2003.8	Wafer Size	200mm
Head Type	i-Head	Load/Unload	Open Cassette Type

Layout



1. SPECIFICATION

Main Frime

	Item	Standard Spec
1.	1) Configuration	2 base frame for Polish and Clean unit
	2) Material	Frame : Stainless steel
		Base/panel : Steel painted
		Duct/cleaner casting: PVC
		Drain pan : PVC
	3) Painting	White, Blue and Gray
	4) Panel removal	Latch type + Bolts
	5) Doors	Removable hinged type

1. SPECIFICATION

Hardware

	Item	Standard Spec
1.	Model Name	F-REX200
2.	Wafer configuration	
	1) Substrate	Silicon
	2) Diameter	200 +/- 0.2 mm
	3) Thickness	0.725 +/- 0.02 mm
	4) Orientation	Notch
	5) Notch dimensions	Depth 1+0/+0.25mm
		Angle: 90 +1/+5 deg.
3.	Wafer processing unit	Single wafer
4.	Outer dimensions (Main system)	W 2000 x D 3490 x H 2450 (mm)
	(Power supply)	W 1000 x D 600 x H 1775 (mm)
5.	Maintenance dimensions(Main system)	W 3600 x D 4290 x H 2850 (mm)
	(Power supply)	W 1000 x D 1600 x H 2175 (mm)
6.	Weight (Main system)	6200 (kg)
	(Power supply)	650 (kg)
	(Operation panel)	60 (kg)
7.	Number of units	15
	Load/Unload port	X1
	Wafer station	X1
	Wafer transfer robot	X3
	Polisher unit	X2
	1st stage cleaner unit (Both side clean)	X2
	2nd stage cleaner unit (Both side clean)	X2
	Rotary transporter	X1
	Filter unit	X3

1. SPECIFICATION

Load/Unload

	Item	Standard spec
1.	Carrier type	Open carrier
2.	Carrier model	Specified by the customer Manufacturer: Model : Part No. : Drawing No. :
3.	Wafer quantity in Carrier	25
4.	Number of stage	4
5.	Carrier setting position	Wafer Horizontal
6.	Wafer carrying method	Wafer front surface(film side) : Upward Cassette slot integrity
7.	Carrier processing	Cassette slot integrity
8.	Setting of carrier	Manually
9.	Dummy wafer slot	4 wafers are available

1. SPECIFICATION

Transfer Robot

	Item	Standard spec
1.	Number of Robot	3
2.	Finger	2 types (Wet / Dry)x3
	1) For carrier access	Holding method : Dropping Material : PFA coated alumina ceramics
	2) For other unit access	Holding method : Dropping Material: PFA coated Aluminum alloy
3.	Wafer station	4 (Wet x2, Dry x2)
	1) Method	Spray nozzle
	2) D.I.Water supply	Front side : 0.8 liter/min for each unit Backside : 0.8 liter/min for each unit Interval spray capability for dead water prevention

1. SPECIFICATION

Polishing Unit

Item	Standard spec	
1. Configuration	Top ring	x2
	Turn table	x2
	Dresser	x2
2. Top ring (Wafer carrier)		
1) Oscillation	Not capable (On turn table)	
2) Polishing direction	Polishing surface Vertically downward	
3) Type	Normal	
4) Number of heads	2	
5) Structure	Split type	
6) Material	Stainless steel/ceramics	
7) Rotating Speed	10 - 120 min^{-1} *1	
8) Driver	Servo motor	
9) Polish presser	100 – 700hPa *1	
Arm load	(Max. down force : 2156N)	
10) Backside pressure	50 – 700hPa *1	
11) Wafer holding	Vacuum suction for holding, DI Water and Nitrogen gas for release.	
12) Self cleaning	Interval D.I. water supply capability for dead water prevention	

1. SPECIFICATION

Polishing Unit

3. Turn Table (Platen)	
1) Number of tables	2
2) Table diameter	600 mm
3) Material	316L SS
4) Rotation speed	10 - 150 min^{-1} *1
5) Driver	Servo motor (Direct drive)
6) Polish Pad setting	Direct adhesion
7) Number of slurry lines	3 lines x 2 table
7) Slurry nozzle	Auto turn nozzle
8) Table cooling	Water jacket is provided
9) Slurry supply	Feed pump and Flow control valve.
10) Slurry return lines	Available to each lines.

1. SPECIFICATION

Polishing Unit

	Item	Standard spec
4.	Dress (Pad Conditioning)	
	1) Method	Diamond plate (24 modules dressing plate with nickel plated diamond).
	2) Disc diameter	260mm
	3) Rotating Speed	10 – 150 min^{-1} *1
	4) Oscillation	Not capable
	5) Driver	Servo motor
	6) Dressing Load	50 – 300 N
	7) D.I. water supply	1liter/min
	8) Self cleaning	Dresser self-cleaning tank :0.3 liter/min Dresser :0.4 liter/min (spray nozzle) Interval D.I. water supply capability for dead water prevention
5.	Slurry feed pump	
	1) Type	Roller tube pump
	2) Number of pumps	6
	3) Capacity	0.01-1litter/min Flow rate : 0.05-0.5 litter/min +/- 5% (reference value)

1. SPECIFICATION

Rotary Transforter

	Item	Standard spec
1.	System Configuration	Turn over unit x2 Lifter x2 Rotary stage x1 Pusher x2
2.	Turn Over unit	
	1) Wafer Handling	Arm (open/close) and Roller chucking
	2) Wafer Handling Material	PCTFE
	3) Wafer Wet	Spray nozzle Front side : 1.0 liter/min for each unit Backside : 0.5 liter/min for each unit Interval D.I. water supply capability for dead water prevention
3.	Lifter	Spray nozzle Front side : 1.8 liter/min for each unit Backside : 2.0 liter/min for each unit Interval D.I. water supply capability for dead water prevention
4.	Rotary stage	
	1) Material to wafer holder	PCTFE
	2) Number of wafer station	4
5.	Pusher	
	1) Top ring clean	Spray nozzle D.I. water spray (2.3 liter/min for each unit) Interval D.I. water supply capability for dead water prevention
	2) Cleaning of contact part of wafer	Spray nozzle D.I. water spray (1.0 liter/min for each unit) Interval D.I. water supply capability for dead water prevention

1. SPECIFICATION

1st Cleaner (Roll/Roll)

Item	Standard spec
1. Configuration	
	Both side wafer cleaning
	Roll sponge scrub
	Chemical / D.I.Water spout rinse
2. Front side Cleaning	
1) Roll sponge diameter	38 mm - 40 mm (in wet)
2) Sponge Material	PVA
3) Rotating	50 - 200 min^{-1}
4) Sponge Position adjustment	0.1 mm pitch control
6) DIW flow rate to wafer	0.4 – 0.5 liter/min
7) DIW flow rate to roll sponge	0.4 – 0.5 liter/min
	Interval D.I. water supply capability for dead water prevention
8) Chemical spout rinsing	
a> Number of chemical lines	2 lines
b> Chemical supply to wafer	0.4 – 0.5 litter/min
c> Usable temperature	Below 45 ℃
d> Flow meter	Equipped on each line*
e> Usable chemical	HF or NH_4OH less than 5% each.

1. SPECIFICATION

1st Cleaner (Roll/Roll)

3. Backside Cleaning	
1) Roll sponge diameter	38 mm - 40 mm (in wet)
2) Sponge Material	PVA
3) Rotating speed	50 - 200 min^{-1}
4) Sponge Position adjustment	0.1 mm pitch control
5) DIW flow rate to wafer	0.5 - 0.6 liter/min
6) DIW flow rate to roll sponge	0.4 – 0.5 liter/min
7) Chemical spout rinsing	
a> Number of chemical lines	2lines
b> Flow rate	0.5 – 0.6 liter/min
c> Usable temperature	Below 45 ℃
d> Flow meter	Equipped on each line *
e> Usable chemical	HF or NH4OH less than 5% each.
8) Wafer chucking	Peripheral chucking by rollers
a> Roller Material	Urethane rubber
b> Rotating Speed	50 - 150 min^{-1} (set by recipe)
9) Ventilation control	Manual damper
a>Monitoring	Exhaust pressure indicator

1. SPECIFICATION

2nd Cleaner (Pencil)

Item	Standard spec
1. Configuration	Both side wafer clean
	Front side pencil scrub + Spin dry
	Chemical / D.I.Water spout rinse
2. Frontside Cleaning	
1) Pencil sponge diameter	ϕ 28 mm (in Wet)
2) Pencil sponge height	34.5 +/- 0.5mm
	(With holder in wet)
3) Sponge material	PVA
4) Rotating speed	50 - 180 min^{-1}
5) Sponge Position adjustment	0.1mm pitch control
6) Self cleaning flow rate	0.4 – 0.5 litter/min
7) D.I. Water flow rate to wafer	0.4 – 0.5 litter/min
	Interval D.I. water supply capability for dead water prevention
8) Chemical spout rinsing	
a> Number of chemical lines	2 lines
b> Flow rate	0.4 – 0.5 liter/min
c> Usable temperature	Below 45 ℃
3. d> Flow meter	Equipped on each line*
e> Usable chemical	HF or NH4OH less than 5% each.

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2nd Cleaner (Pencil)

Backside Cleaning	
1) D.I. Water flow rate	0.6 - 0.7 liter/min
	Continuous water supply
	0.02 – 0.04 liter/min
2) Chemical spout rising	
a> Number of chemical lines	2 lines
b> Flow rate	0.6 – 0.7 liter/min
c> Usable temperature	Below 45 ℃
d> Flow meter	Equipped on each line*
e> Usable chemical	HF or NH4OH less than 5% each.
3) Wafer Chucking	Holding at wafer edge
a> Chucking Material	PCTFE
b> Rotating Speed	100 - 3000min^{-1}
4) Ventilation control	Manual damper
a> Monitoring	Exhaust pressure indicator

1. SPECIFICATION

Power Supply

	Item	Standard spec
1 .	Circuit Breaker	Independently installed on each module
	Back up power supply	CPU backup using UPS
2 .	Main controller	
	1) Hardware	VME bus, Board computer
		Main CPU : 68 series 32 bits
	2) O/S software	OS-9/C language description
		Separate structure on each module
	3) I/O connections with module	Serial communication
		Wiring saving system
3.	Operation controller	
	1) Method	Touch panel display
	2) Location	Front

Equipment Picture