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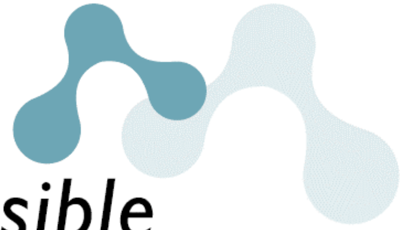

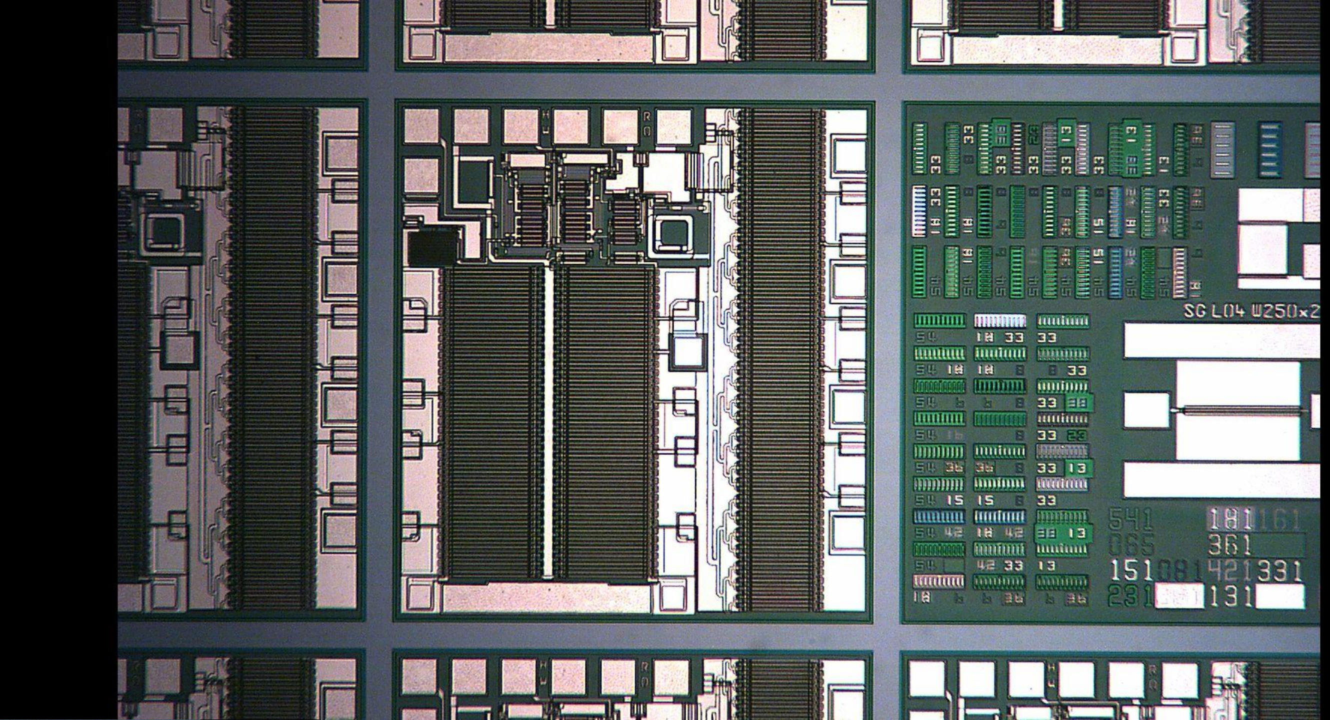

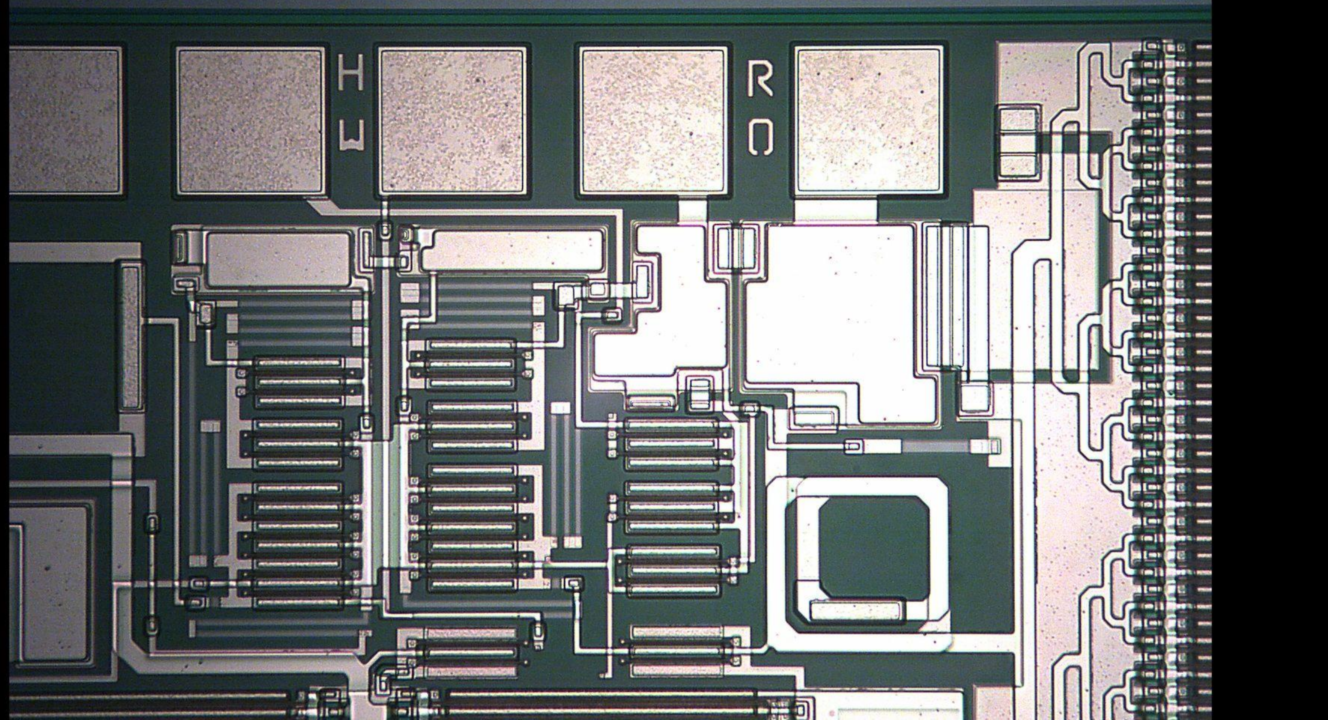

ASAP Co.,Ltd.
Company information

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Overview

Name	ASAP Co.,Ltd.
Establish	Feb 1999
Location	Head office：27-1, Sanjo-machi, Nishi-ward, Saitama-city Okinawa factory：5192-41, Katsuren-haebaru, Uruma-city
Representative	Makoto Osawa
Capital	40,000,000 JPY
Shareholder	NANYO Corp.　100%
Business activities	Production and marketing of semiconductor equipment Marketing of semiconductor materials Semiconductor production related consulting
Products	Equipment of lithography, scrubber etc

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Location

＜Head Office＞
27-1, Sanjo-machi, Nishi-ward,
Saitama-City, SAITAMA

＜Okinawa factory＞
5192-41, Katsurenhaebaru,
Uruma-City, OKINAWA
(Special Economic Zone for trade)

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Main Products

Coater

Mask Aligner

Developer

Lift-Off

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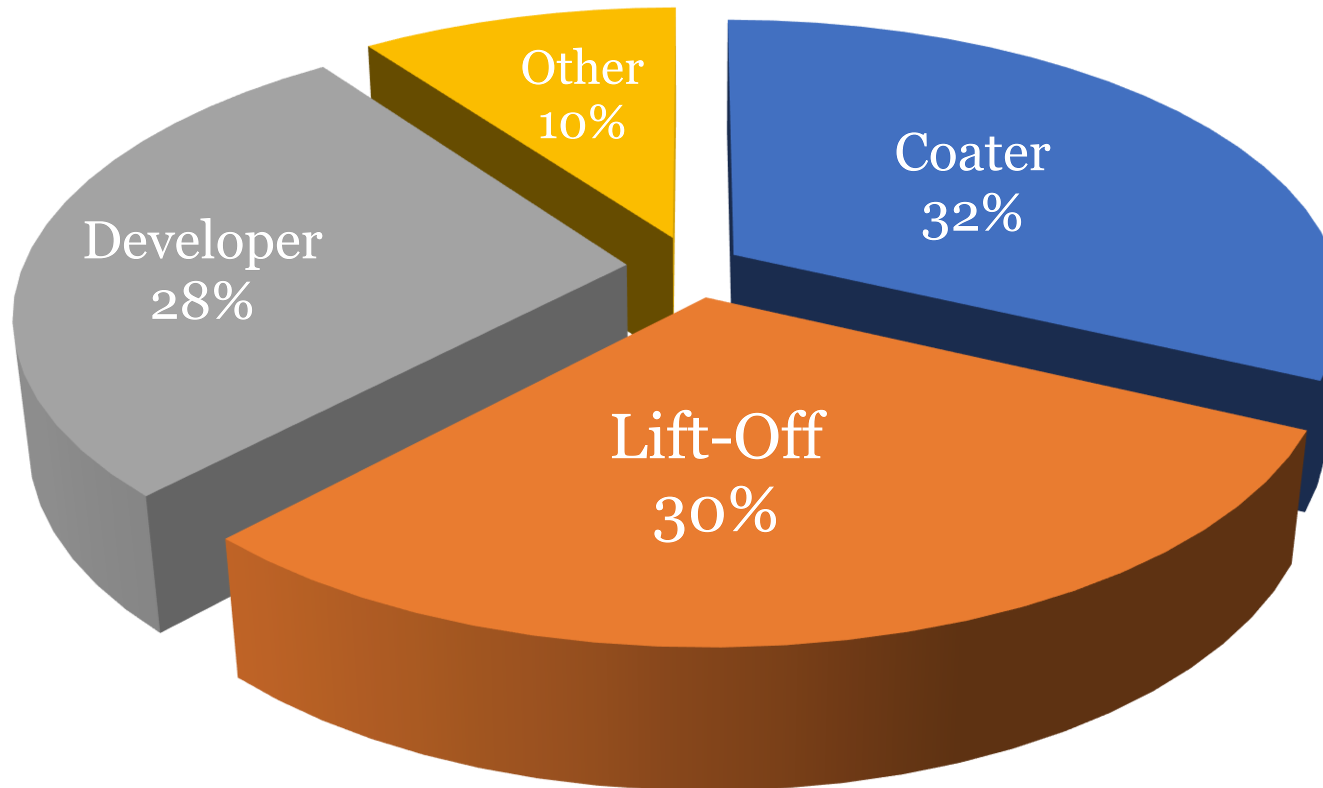
Delivery Record

Products Shipped (up Dec 2023)



300+ Sets

Basic Enclosure of:

Stand alone Spin Coater
Stand alone Spin Developer
Combo Coater & Developer
Metal Liftoff System
Wafer Scrubber / Cleaner
Mask Aligner

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Spin Coater & (Developer)

Typical System Configuration

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Baking unit
Max.5-stage

VDP (HMDS) &
Cooling unit

Spin
Cup 1

Spin
Cup 2

Cassette stage 1

Cassette stage 2

Centering Unit

Process Cup Design of Coating system

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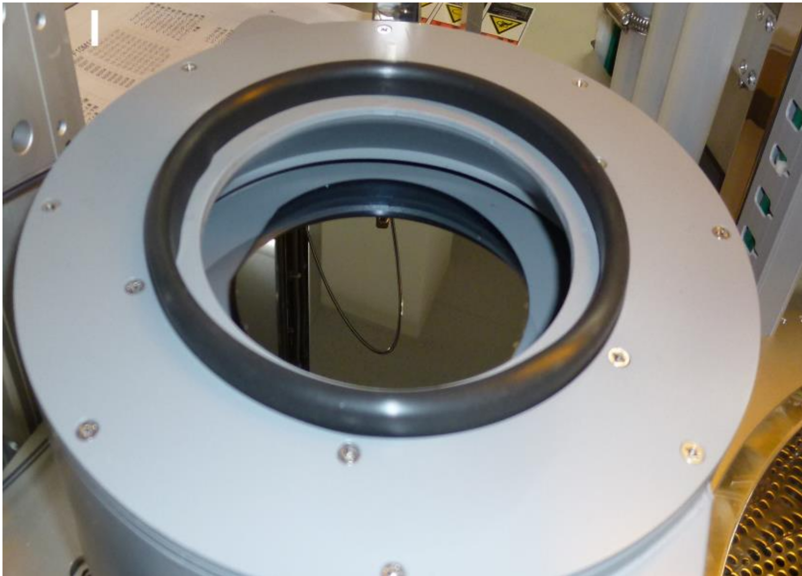
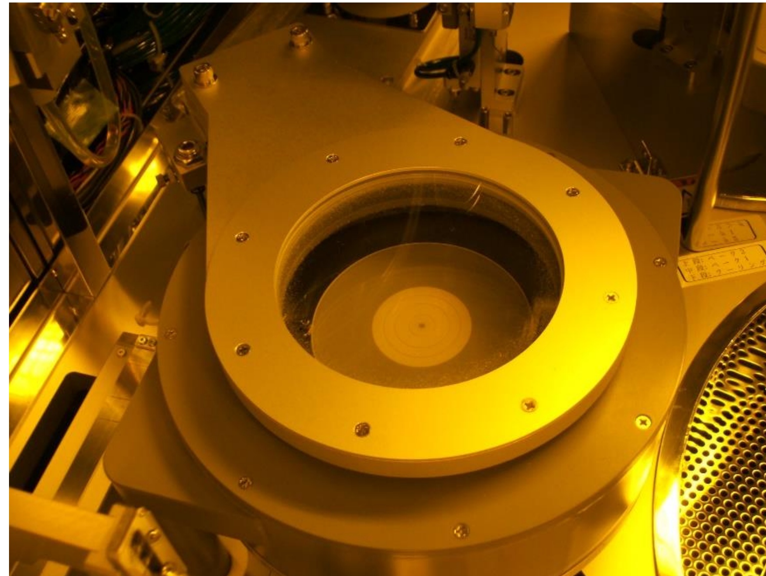
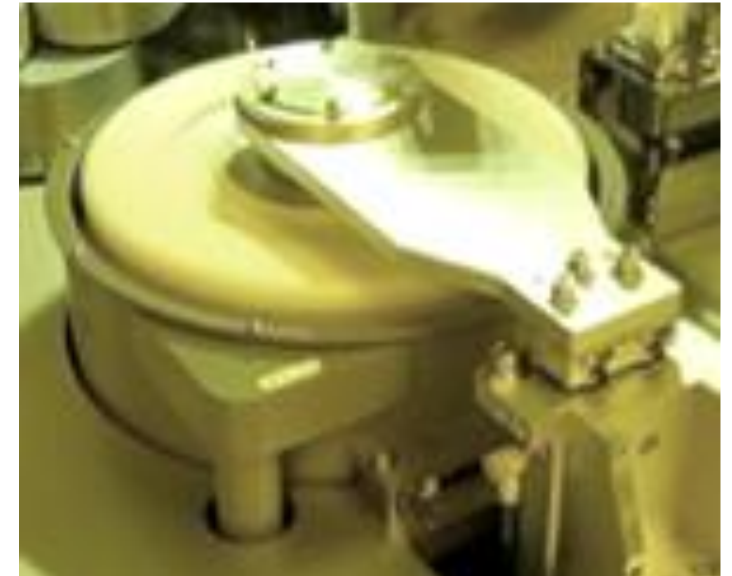
Cup design differs from depending on viscosity, substrate shape and target thickness.

OPEN	CLOSE	ROTATION
		
For thin film coating or Low Viscosity Photoresist, mainly for **Positive PR**	For thick film coating or High Viscosity Photoresist, Mainly for **Negative PR**	For **Square substrate** or Expecting good coverage, **Less material** coating (eg) PI

High viscosity coating data

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Photo Resist	Tokyo Ohka	AZ electronics	TOK	JSR	HD microsystems
Model	TCIR	AZ-4620	PMER-LA900	THB	PIX-3400
Viscosity	96 cp	400 cp	900 cp	1,750 cp	13,000 cp
Wafer size	8 inch	8 inch	8 inch	8 inch	6 inch
Thickness	40,000 Å	62,500 Å	300,000 Å	413,000 Å	100,000 Å
Uniformity (max-min)/ave	1.39 %	1.67 %	2.68 %	3.76 %	4.7 %
W to W uniformity	0.84 %	0.91 %	1.02 %	1.13 %	1.51%

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Auto Mask Aligner
Model: AMA6000

System configuration & Dimension

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Centering & OF detection sensor

Transfer robot

Gap sensor unit

Wafer transfer unit

Wafer stage

Gap measuring Jig storage

Gap measuring amplifier (Contact type)

Cassette stage 1

Mapping elevator 1

Cassette stage 2

Mapping elevator 2

Touch panel

Size : 1200 x 1260 x 2000 mm

Features of ASAP Mask Aligner

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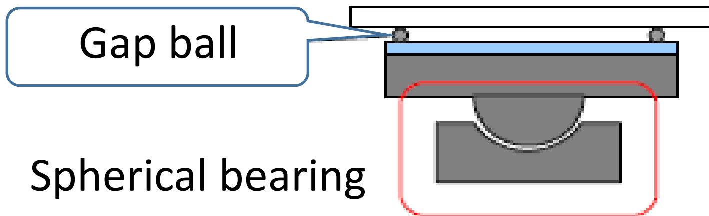
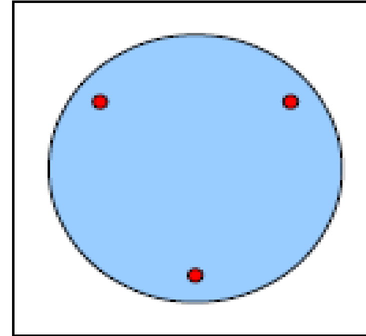
Conventional method

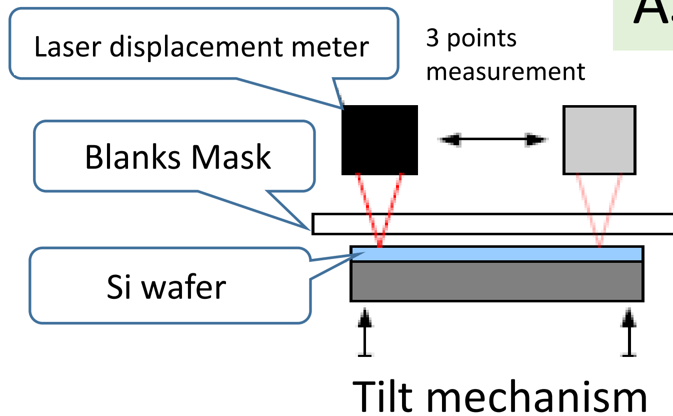


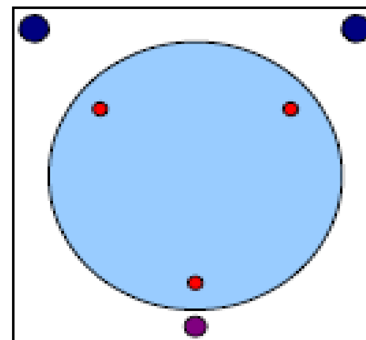


- Gap ball contact point

Gap ball makes a damage to the mask.

ASAP method





- : Tilt drive shaft
- : Tilt fixing shaft
- : Gap measuring point

No damage to the wafer & mask is realized by **non-contact.**

Exposure Performance

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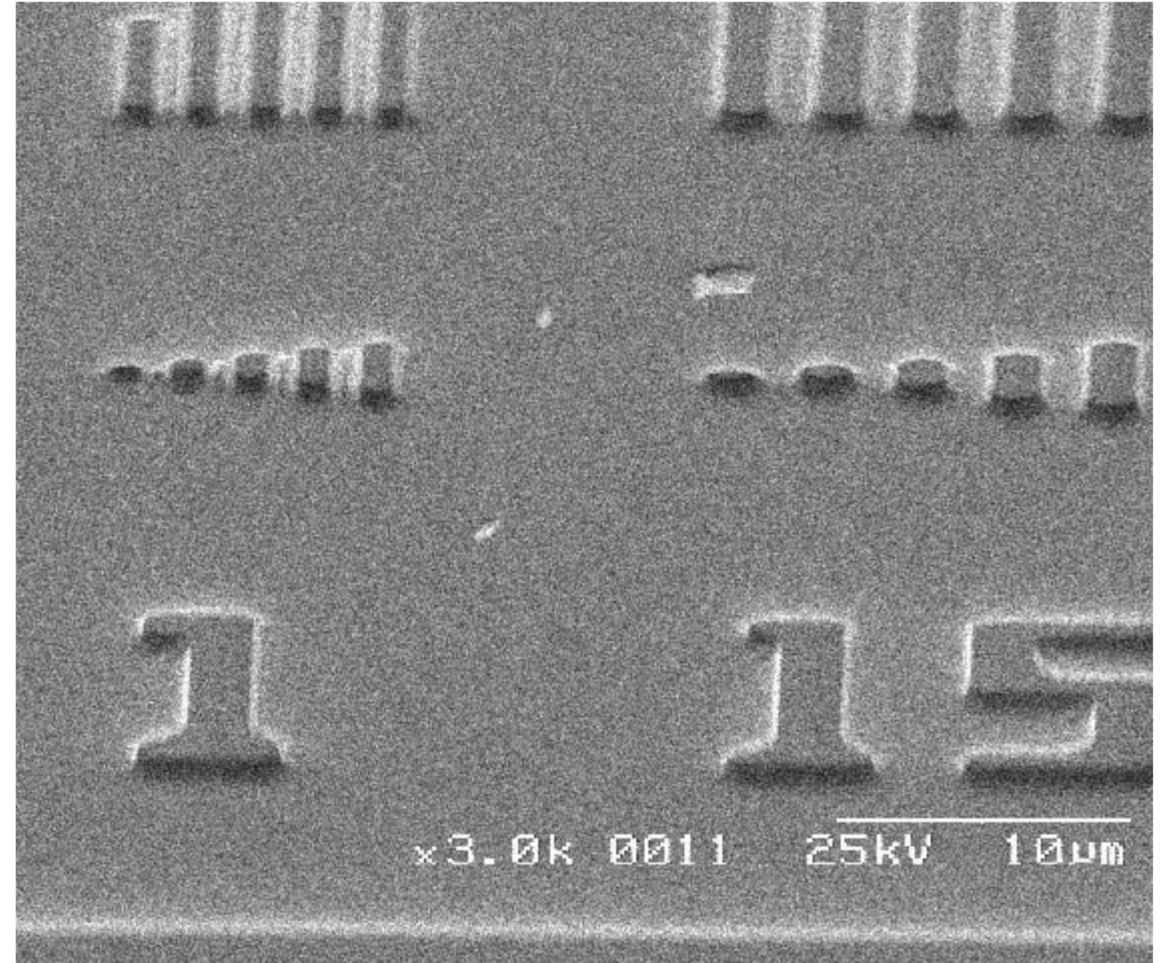
【Conditions】		
Substrate	:	Si (OAP treatment)
Film Thickness	:	0.8um (OFPR-800LB)
Prebake	:	90℃ / 90s
Development	:	NMD-3 (2.38%)
Rinse	:	DI water / 20s



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Metal Lift-Off System

Process method comparison (2)

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Liftoff process needs chemical effect to dissolve photo-resist, and physical force to remove metal from substrate.

Process method	Strong point	Week point
Dip + High pressure	• High productivity • Easy to recycle chemical • Optimize the current Wet bench	• Metal redeposite issue • Big footprint per WPH • High initial cost
Tape + Dip	• Low initial cost • Less chemical consumption	• Burr issue • Need 2 step process (not exist integrated equipment) • Low metal recycle rate
Dip + Ultrasonic(or spray)	• Lowest initial cost • Less chemical consumption	• Burr issue • Metal redeposit issue • Low metal recycle rate
ASAP's high pressure system (Fully single wafer process)	• Highest productivity and repeatability • Lowest chemical consumption • No redeposit, No burr, Better yeild	• Moderate to high initial cost Easily recovered yield improvement and chemical cost

Process method comparison (3)

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ASAP's high pressure system is much different from other supplier's.
Our system occurs very powerful **Micro-Cavitation** (MC).

MC makes micro-bubble in liquid (solvent)

which has very strong detergency. It realizes

short time process, **no burr**, **less chemical consumption**, etc...

Process method comparison (3-1)

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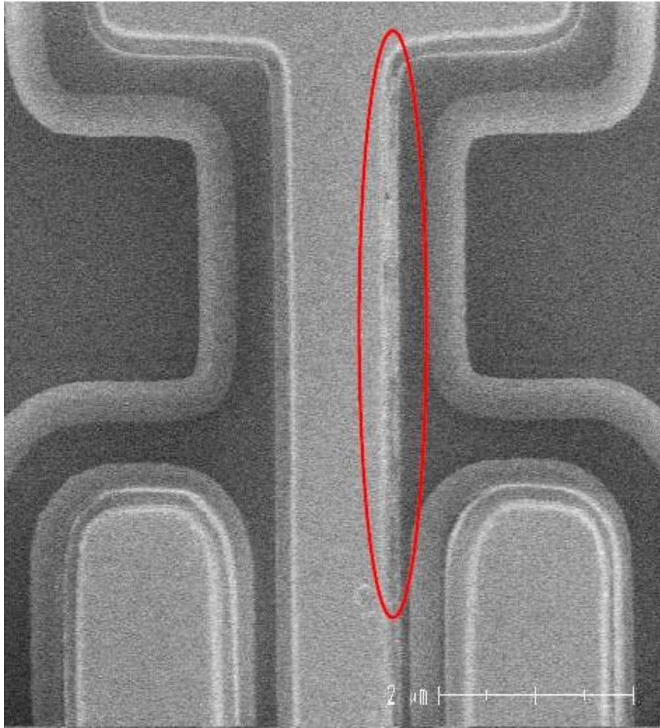
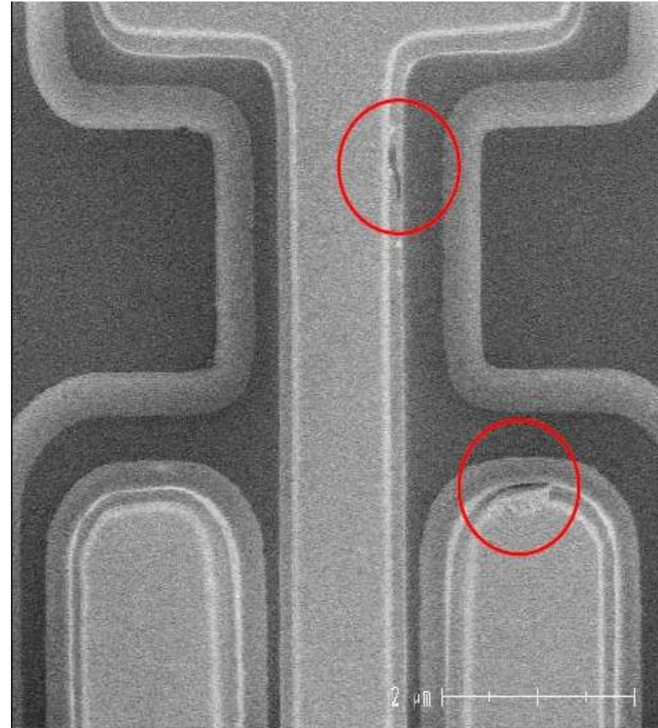
＜Example of burr issue improvement ＞

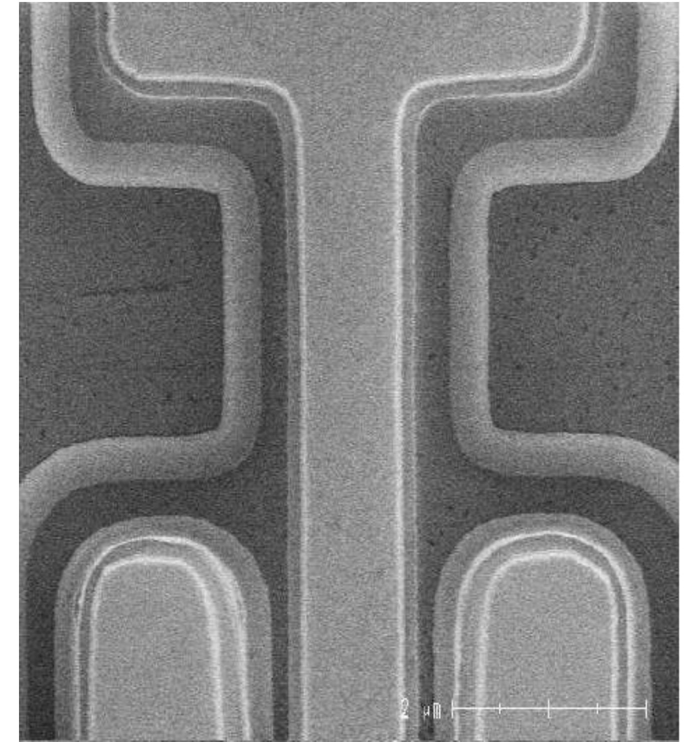
Dip + High pressure





VS

ASAP's High pressure



3-CUP System Configuration (Max. φ6 inch)

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Main system dimension
1600 x 1500 x 1900 mm