

Our partner



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Ahead Beyond

# Point of use abatement systems

## Combustion type Model TND, G5, G6

## High performance wet trap Model FST, ETRAP, FTRAP

### Precision machinery company Overseas office

**USA:**  
Ebara Technologies Inc  
H Q: Sacramento(CA)  
F S C: Sacramento(CA)  
Hillsboro(OR)  
S S: San Jose(CA)  
Albany (NY)  
Newburyport  
Boise(ID)

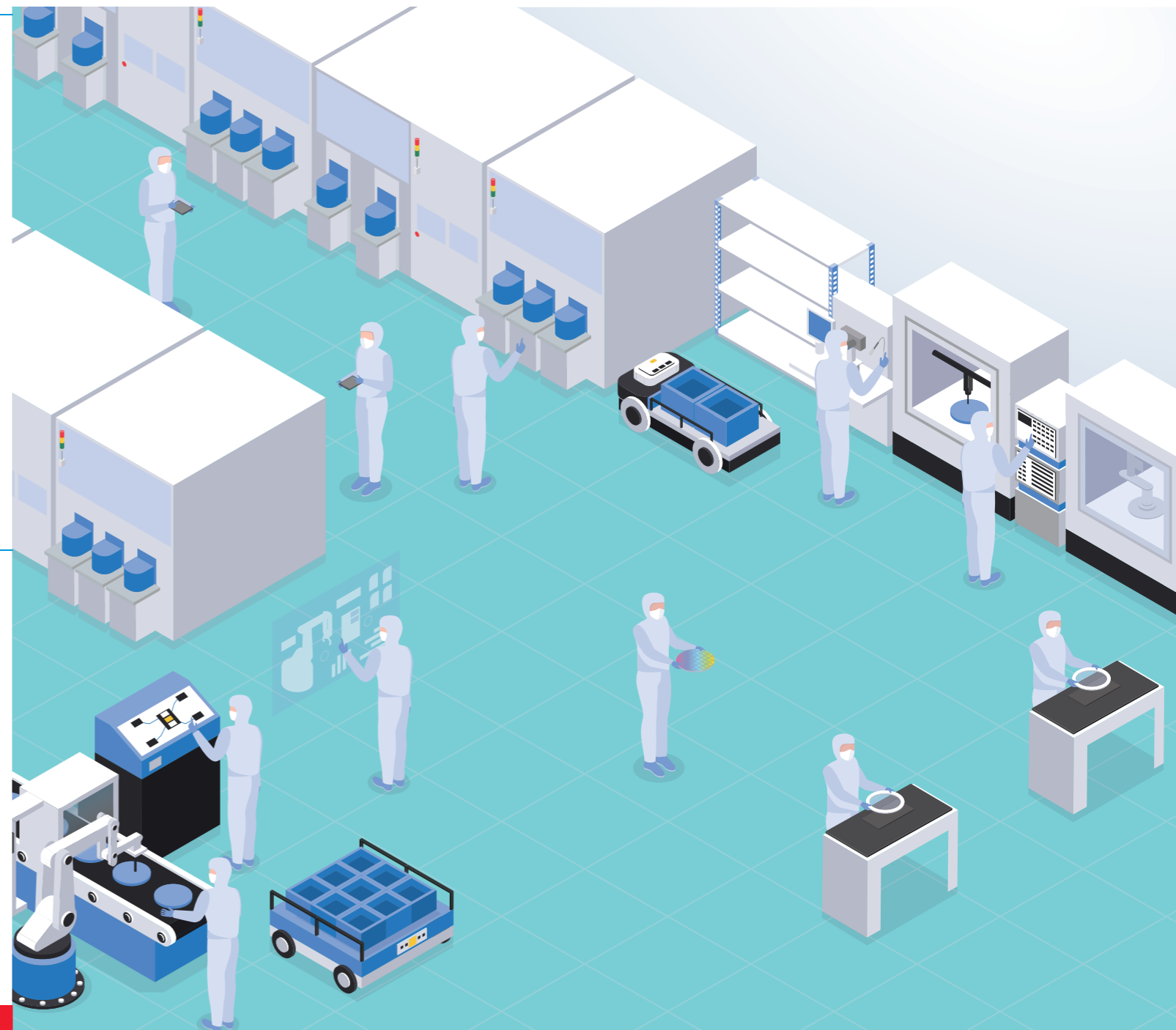
**EUROPE:**  
Ebara Precision Machinery Europe GmbH  
H Q: Sauerlach, Germany  
F S C: Livingston, UK  
Dresden, Germany  
S S: Graz, Austria

**KOREA:**  
Ebara Precision Machinery Korea Inc  
H Q: Pyeongtaek  
F S C: Pyeongtaek  
S S: Seongnam  
Hwasung  
Cheonan  
Icheon  
Cheongju

**CHINA:**  
Shanghai Ebara Precision Machinery Co.,LTD  
H Q: Shanghai  
F S C: Shanghai  
S S: Wuxi  
Dalian  
Beijing  
Wuhan

**SINGAPORE:**  
Ebara Engineering Singapore Pte.Ltd  
H Q: Tuas Link  
F S C: Tuas Link

**TAIWAN:**  
Ebara Precision Machinery Taiwan Inc  
H Q: Taipei  
F S C: Hukou  
S S: Linkou  
Hsinchu  
Taichung  
Tainan



### Precision machinery company Japan office

- HQ**  
Fujisawa(Kanagawa Pre.)
- Factory**  
Fujisawa(Component product, Overhaul)  
Chubu(Overhaul)  
Suzuka(Overhaul)  
Kumamoto(CMP,Plating,Bevel,Overhaul)
- Sales and support office**  
Kitakami,Tohoku,Yamagata,  
Fujisawa,Chubu,Osaka,  
Hiroshima,Oita,Nagasaki,Kumamoto



Fujisawa(Component product, Overhaul)

● The product(s) described herein fall under "the goods listed in row 16 of the appended table 1 of the Export Trade Control Order of Japan", so in cases of export of such product(s), you need to confirm "use" and "purchaser and/or end-user" and, as case may be, obtain the approval of the Minister of Economy, Trade and Industry. (Please confirm these conditions on your own.) Furthermore, some of the product(s) fall under row 1-15 of the appended table 1 (listed items). In case of export of these listed items, you are required to obtain the export license from the Minister of Economy, Trade and Industry. For more information, please contact our sales office located near you.

● All specifications are subject to change without notice.  
● Model ○○○ in this catalogue is our model code.

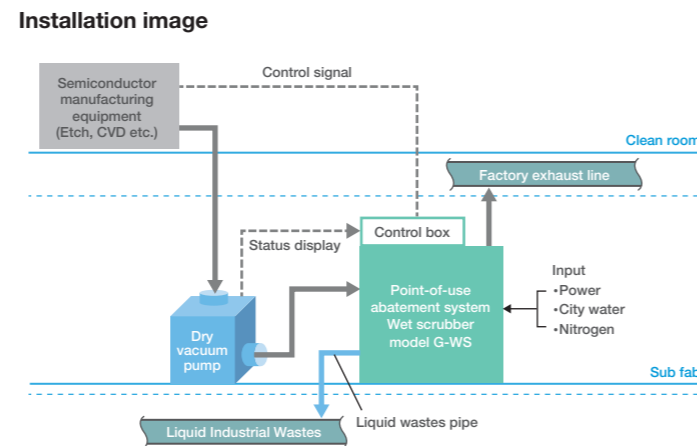
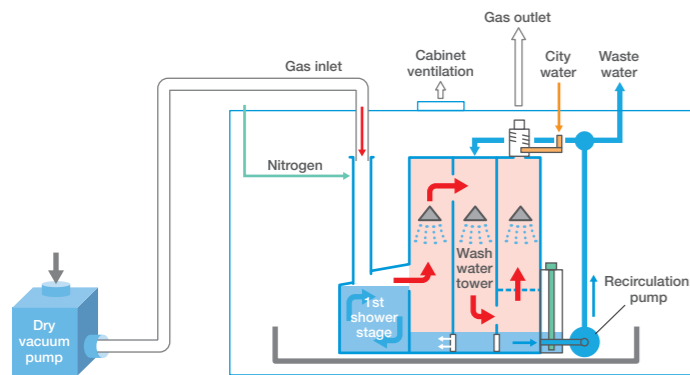
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● "Model ○○○" in this catalogue is our model code.

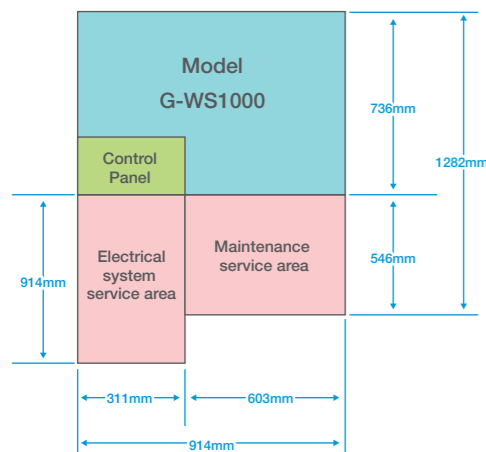
## Wet scrubber model G-WS

Wet scrubber model designed for treating water-soluble and water-reactive gases. Inlet port is designed to restrain by-product clogging, which inherit unique EBARA technology of combustion type model selling for over 20 years. Simple structures achieves reduced footprint and easy maintenance. EBARA wet scrubber model G-WS provides high DRE, delivering abatement performance for semiconductor manufacturing process especially epitaxy, atomic layer deposition, metal etch and nitride process.

### Model G-WS image flow



### Maintenance area



### Specifications

<b>Model</b>	G-WS1000	
<b>Maximum process flow rate (L/min)</b>	1,000	
<b>Number of inlet ports</b>	Max. 4	
<b>Dimensions (mm)</b>	W914xD736xH1,727	
<b>Utilities</b>	<b>Water flow rate (L/min)</b>	1 - 10
	<b>Drainage flow rate (L/min)</b>	1 - 10
	<b>Nitrogen (L/min)</b>	15-50
	<b>Power supply</b>	1.8-3.5kW, AC 200V, 50/60Hz, 3 phases
	<b>Cabinet ventilation (m3/min)</b>	0.5
<b>Main treatable gas</b>	<b>Epi</b>	HCl, DCS
	<b>CVD</b>	WF <sub>6</sub> , NH <sub>3</sub> , TiCl <sub>4</sub> , BCl <sub>3</sub> , ClF <sub>3</sub> , SiF <sub>4</sub> , Cl <sub>2</sub> <sup>*1</sup> , F <sub>2</sub> <sup>*1</sup>
	<b>Etching</b>	BCl <sub>3</sub> , HCl, HF, HBr, SiF <sub>4</sub> , Br <sub>2</sub> <sup>*1</sup> , Cl <sub>2</sub> <sup>*1</sup> , F <sub>2</sub> <sup>*1</sup>
	<b>Asher</b>	NH <sub>3</sub>
<b>Gases that cannot be Treated</b>	H <sub>2</sub> , SiH <sub>4</sub> , PH <sub>3</sub> , GeH <sub>4</sub> , CH <sub>4</sub> , PFCs (CF <sub>4</sub> , SF <sub>6</sub> , NF <sub>3</sub> ) etc.	

\*1 Please contact us for details about gases conditions

## Catalyst/Absorption Model GT

EBARA catalyst/absorption model GT enables the effective treatment of harmful and greenhouse gases chemically or physically without using carbon based fuels. PFCs gases that cannot be treated with ordinary dry bed abatement can be treated by EBARA fluorine-absorption type abatement.

### Treatment technology

- Chemical reaction: Removed by chemical reactions of chemical agent  
Ex. (SiH<sub>4</sub> + 2MeO → SiO<sub>2</sub> + 2H<sub>2</sub> + 2Me)
- Physical absorption: Removed by physical absorptions of chemical agent  
Ex. (Br<sub>2</sub>, NH<sub>3</sub> absorb directly to dry bed)
- Ion exchange: Removed by ion exchange resin  
Cl<sub>2</sub> + R-N(CH<sub>3</sub>)<sub>2</sub> → R-CH<sub>2</sub>-(CH<sub>3</sub>)<sub>2</sub>Cl-

### High performance chemicals(Major category)

- Metallic oxide
- Crystalline aluminosilicates (Zeolite)
- Ion exchange resin
- Alkaline agent

Based on our vast accumulated knowledge over the past 20 years, EBARA offer the chemicals above according to shape, composition, and adsorption.

### Specifications

<b>Model</b>	GTE, GTC, GTI	
<b>Maximum process flow rate (L/min)</b>	100	
<b>Canister size (L)</b>	85	
<b>Canister I.D. (mm)</b>	Φ 350	
<b>Dimensions (mm)</b>	Single canister	W600 × D600 × H2,000
	Dual canister	W900 × D600 × H2,000
<b>Utilities</b>	<b>Nitrogen (L/min)</b>	0 (Required for pneumatic valve action and purging the residual gas during canister exchange.)
	<b>Power supply</b>	0.3~1.0kW, AC100/200V, 50/60Hz, 3 phases
	<b>Cabinet ventilation (m3/min)</b>	0.6
<b>Main treatable gas</b>	<b>GTE Etching</b>	Acid gas : BCl <sub>3</sub> , Cl <sub>2</sub> , HCl, HBr, Br <sub>2</sub> , F <sub>2</sub> , HF, SiF <sub>4</sub> , etc. PFCs gas : C <sub>4</sub> F <sub>6</sub> , C <sub>3</sub> F <sub>8</sub> Others : CO, NF <sub>3</sub> , H <sub>2</sub> (Require heating)
	<b>GTC CVD</b>	Flammable gas : SiH <sub>4</sub> , PH <sub>3</sub> , AsH <sub>3</sub> , B <sub>2</sub> H <sub>6</sub> , SiH <sub>2</sub> Cl <sub>2</sub> , NH <sub>3</sub> , TEOS, etc. Others : N <sub>2</sub> O (Require heating)
	<b>GTI Ion implanting</b>	Implanting gas : AsH <sub>3</sub> , PH <sub>3</sub> , BF <sub>3</sub> , etc.
<b>Gases that cannot be Treated</b>	PFCs gas : CF <sub>4</sub> , C <sub>4</sub> F <sub>8</sub> , C <sub>3</sub> F <sub>8</sub> , C <sub>2</sub> F <sub>6</sub> , CHF <sub>3</sub> , CH <sub>3</sub> F	

Optimized to abate particular chemical substances, by offering appropriate chemical solutions in accordance with process gases.

Various Line up

No need for any water supply or drain equipment



## fluorine-absorption model FDS



- ▶ Dry fixation of F<sup>+</sup> gas after PFCs gas decomposition does not require wastewater treatment.
- ▶ Removal efficiency greater than 99% at maximum inflow gas volume at 250 slm
- ▶ 250 slm dual-cylinder type: Serial flow design of the canister greatly improves equipment uptime
- ▶ 100 slm single cylinder type: Easy to replace the existing dry bed type abatement

### Specifications

Model	Dimensions (mm)	Canister (本)	Maximum flow rate (ℓ/min)
FDS100S	W600 × D600 × H2,000	1	100
FDS250 <sup>*2</sup>	W1,520 × D1,000 × H2,150	2	250

\*2 [Products subject to list control]

This product falls under "goods listed in the Export Trade Control Order". An export license from the Minister of Economy, Trade and Industry is required for export.

\*Please contact us for details about service conditions.

\*If you are considering other than semiconductor manufacturing process, please contact us.