

## Plasma Cleaner

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# Gas Plasma Dry Cleaner

Plasma Surface Treatment Device

## PDC200/210/510

High frequency output	300W (PDC200)	500W (PDC210/510)	Stage size	250x170mm (PDC200/210)	410x210mm (PDC510)
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Small and compact, suitable for R&D purposes

### Features

- Simple and compact plasma surface treatment device
- RIE (Reactive Ion Etching) Plasma mode, with DP (Direct Plasma) mode as option
- Excellent electrode structure for plasma uniformity
- Simple touch panel system

### Applications

- Plasma processing of CSP, BGA, COB substratum
- Removal of organic films and metal oxidized films
- Dry cleaning of printed circuit board
- Surfactant process
- LED assembly
- For R&D

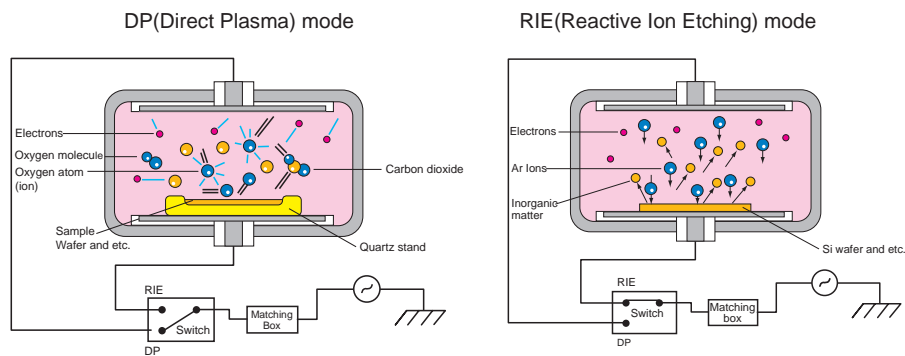


PDC210

### Chamber



### Diagram



### Specifications

Model	PDC200	PDC210	PDC510
Plasma mode	RIE (DP mode option)		RIE/DP selectable
Electrode structure	Parallel flat stage plate		
Vacuum gauge	Capacitance manometer		
High frequency output	Max 300W	Max 500W	
Oscillation frequency	13.56MHz Quartz oscillator		
Output setting method	Manual setting on LCD touch panel		
Matching method	Auto tuning		
Controller	Programmable		
Display	LCD touch panel		
Chamber size	W400 x D250 x H150mm		W500 x D300 x H200mm
Stage size	W250 x D170mm		W410 x D210mm
Chamber material	Aluminum		
Reaction gas	2 systems (Argon, Oxygen)		
Purge gas	Nitrogen or dry air		
Reaction gas flow control	Flow meter	Mass flow controller	
Rotary vacuum pump (optional)	~345L/min.		~500L/min.
External dimensions	W540xD600xH600mm	W540xD600xH600mm	W700xD700xH700mm
Weight	~100kg	~105kg	180kg
Power source	Single phase AC115V 50/60Hz	3-phase AC200V~AC240V 50/60Hz	

# Gas Plasma Dry Cleaner

Multi Stage Plasma Cleaner

**PDC610G**

High-frequency Output

600W

Stage size

250 x 220 mm  
1-stage, 2-stages, 3-stages selectable

Standards

FCC / CE compliant

**FCC and CE certified compact plasma cleaner with selectable RIE / DP modes and switchable electrodes (1 to 3 stages) covering a wide range of applications**



## ■ Features

- Maximum power of 600W with compact package
- Electrodes can be switched among 1-stage, 2-stages, and 3-stages
- Supports processing of a vertical magazine
- RIE/DP modes selectable
- Supports integrated data logger (optional)
- Matching point memory function (optional)
- Complies with FCC and CE standards

## ■ Applications

- Improvement of adhesiveness of various materials and surface reformation
- Light ashing and light etching process
- Pretreatment of implemented board bonding, plastic package and print board plating
- Processing of LED related commercial products
- Cleaning of electronic parts
- Resist peeling or residue removal after wetting process
- Cleaning of accuracy parts including optics and optical fibers, or machine parts
- Reformation of resin surface including fluoro resin

## ■ Specifications

Model	PDC610
Plasma mode	RIE/DP selectable
Electrode structure	3-stage independent parallel flat plates
Vacuum gauge	Capacitance manometer
High frequency output	Max 600W
Oscillation frequency	13.56MHz Quartz oscillator
Output setting method	Manual setting on LCD touch panel
Matching method	Auto tuning
Control device	Sequencer
Display	LCD touch panel
Chamber size	W350 x D270 x H300 mm
Stage size	W250 x D220mm Three stages
Chamber material	Aluminum
Reactive gas	2 systems (Argon and Oxygen)
Purge gas	Nitrogen or dry air
Vacuum pump	Rotary vacuum pump (Approx. 345 L/min)
External dimension	W600 x D722 x H700 mm
Exterior material	Stainless steel
Power source	3-phase AC200V~AC230V 50/60 Hz 15A (vacuum pump included)
Standards	FCC / CE marking

## Chamber



## Plasma Discharge



# Gas Plasma Reactor

Compact, Barrel Type, Low Temperature Ashing Device

## PR200/300/301

High-frequency output    200W (PR200)    300W (PR300/301)

Reaction chamber     $\phi 100 \times 160\text{mm} \times 1$  (PR200)     $\phi 64 \times 160\text{mm} \times 3$  (PR300)     $\phi 118 \times 160\text{mm} \times 1$  (PR301)

Wide range of application from ashing, etching, dry cleaning, etc.

### ■ Features

- Isotropy barrel type
- Compact, space saving design
- Capable of removing coated organic matter
- Adjustable RF suitable for various applications
- Outstanding operability and safety
- Can be set for a wide range of output conditions to handle a variety of testing samples

### ■ Applications

- Functionalization of the polymeric material surface improves adhesion  
Oxidation reaction generates functional groups -OH, >C=O, -COOH on the surface (very small amount of water and carbon dioxide will impact)
- In nitrogen plasma, a nitrogen atom is incorporated onto the surface, generates a functional group -NH<sub>2</sub>
- Resist peeling
- Surface modification of materials (metals, polymers, films, ceramics, etc.)
- Asbestos pre-processing (ashing of membrane filter)
- Low-temperature ashing (polymer material, coal, food, etc.)
- PDMS chips bonding to glass and PDMS substrate
- Production of semiconductors and analysis work



PR200



PR300

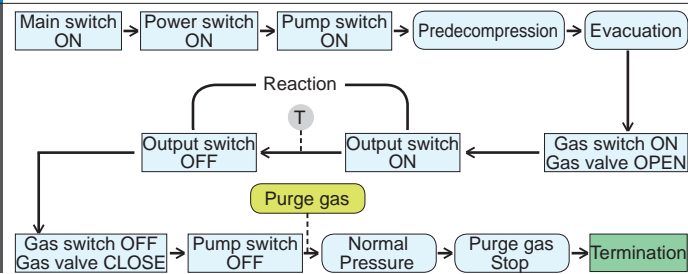
PR301

### ■ Specifications

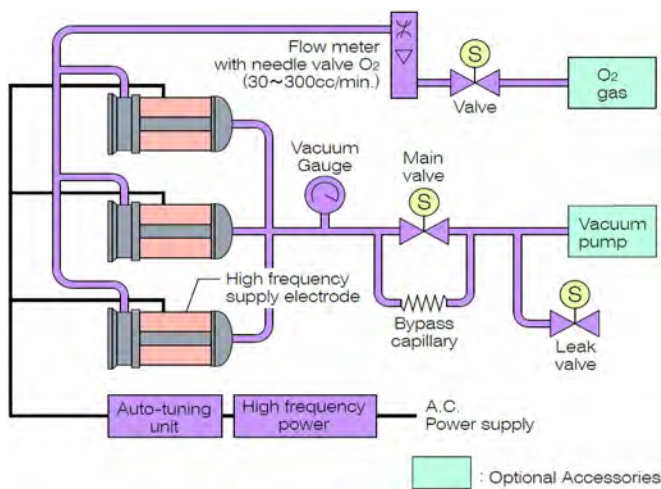
Model	PR200	PR300	PR301
Plasma mode	Direct plasma (DP)		
High frequency output	Max. 200W	Max. 300W (100W x 3 chambers)	Max. 300W
Oscillation frequency	13.56MHz		
Tuning method	Auto matching	Manual biaxial	
Reaction chamber	Pyrex glass, $\phi 100 \times 160\text{mm} \times 1$ chamber	Pyrex glass, $\phi 64 \times 160\text{mm} \times 3$ chambers	Pyrex glass, $\phi 118 \times 160\text{mm} \times 1$ chamber
Reaction gas	1 system (oxygen), flow meter control with dry air purge gas		
Control system	Manual leak valve	Auto pressure reduction, auto leak valve	
Piping material	Stainless steel, Teflon	Stainless steel, Teflon, Copper and Brass	Stainless steel, Teflon
External dimensions(WxDxH)	350 x 400 x 500mm	438 x 520 x 556mm	438 x 520 x 660mm
Weight	~25kg	~36kg	~34kg
Power source (50/60Hz)	AC115V	AC115 / AC220V	
Optional accessories	Sample dish, vacuum pump	Sample dish, stand, shelf, vacuum pump	



## Operation Flowchart



## Piping System (PR300)



## Control Panel



PR200



PR300, PR301

## Chamber



PR200  
1 chamber (ø100 x 160mm)

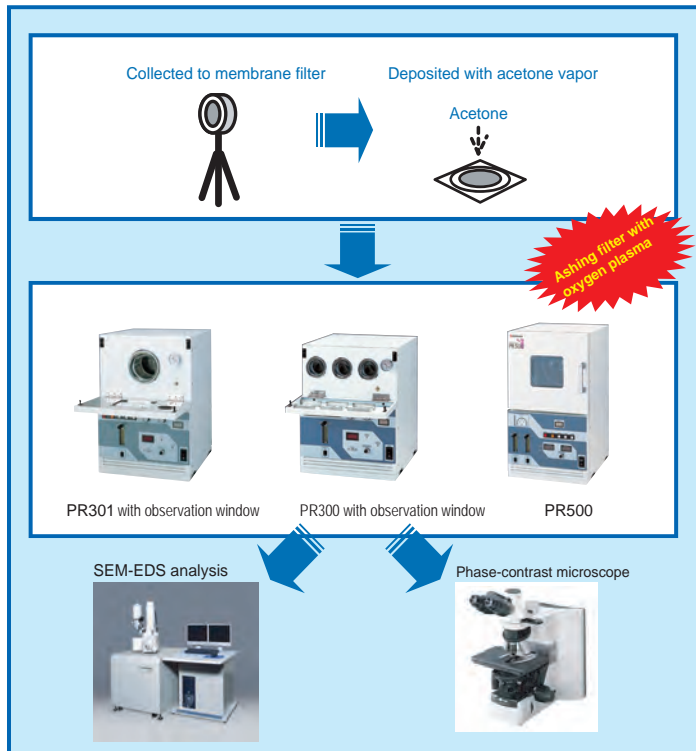


PR300  
3 chambers (ø64 x 160mm)  
Contamination free

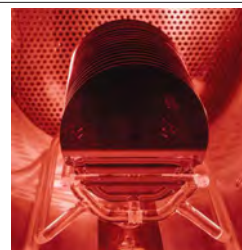


PR301  
1 chamber (ø118 x 160mm)

## Example application: asbestos analysis pre-processing

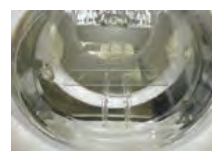


## Interior



The gas plasma equipment has a wide range of applications from ashing, etching, dry cleaning, etc.

## Accessories



Sample dish



Sample shelf for PR300



Sample shelf for PR301

# Gas Plasma Reactors

Compact, Barrel Type, Low Temperature Ashing Device

## PR500/510

High-frequency output

500W

Reaction chamber

ø215 x 305mm

Designed with large chamber size made of quartz considered almost completely resistant against most plasma processes



PR500 (Manual version)



PR510 (Touch panel version)

### ■ Features

- Compact, space saving design with oscillation section integrated with a portion of the chamber
- Outstanding operability and safety with the automatic tuning system as standard component
- Equipped with a large quartz chamber (ø215mm) which can process big testing samples

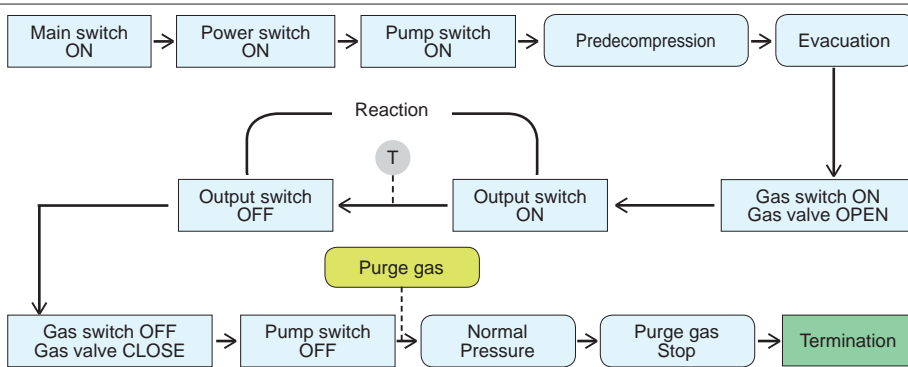
### ■ Applications

- Removal of photoresist
- Cleaning of parts
- Surfactant treatment
- Micro polishing
- Corresponds to wafer and glass substrate

### ■ Specifications

Model	PR500 (Flow meter)	PR510 (Mass flow meter)
Method	Barrel type chamber direct plasma	
High frequency output	Max. 500W	
Oscillating frequency	13.56MHz	
Tuning method	Automatic tuning	
Reaction chamber	Made of quartz, ø215x305mm	
Reaction gas	Dual system (O <sub>2</sub> / CF <sub>4</sub> )	
Control system	Manual	Automatic touch panel
Piping material	Stainless steel, Teflon	
External dimensions (WxDxHmm)	438x520x760	520x630x760
Weight	~60kg	~60kg
Power source (50/60Hz)	AC115V / AC220V	
Standard accessories	Connection cable: 1 complete set Vacuum grease: 1 pc. O-ring for reaction chamber: 1pc.	
Optional accessories	Frame for wafers (2, 3, 4, 5, 6 inches) Multi-purpose angled frame Aluminum etching tunnel Stand	

## Operation Flowchart

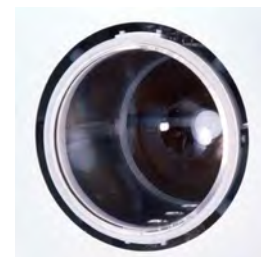


## Control Panel



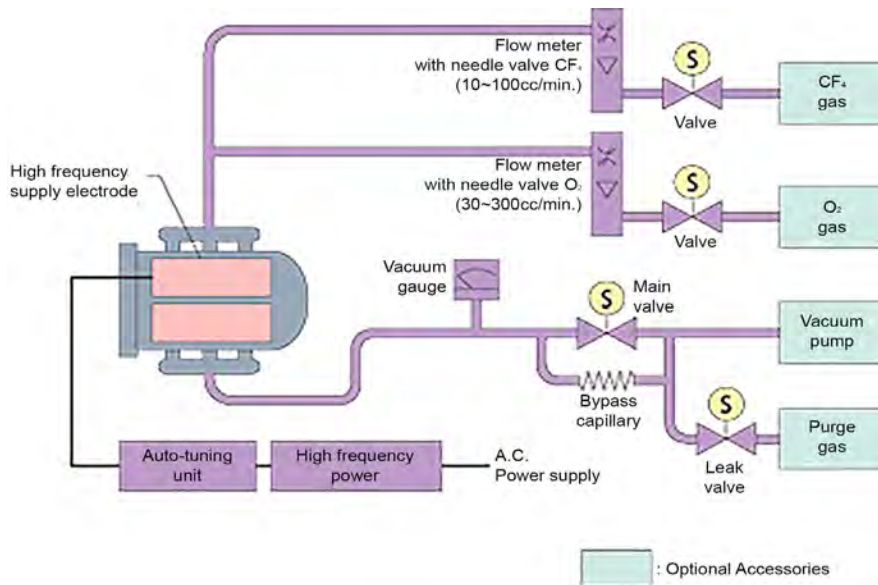
PR500

## Chamber



ø215mm large caliber chamber

## Piping System (PR500/510)



## Wafer Ashing



The gas plasma equipment has a wide range of applications from ashing, etching, dry cleaning, etc.