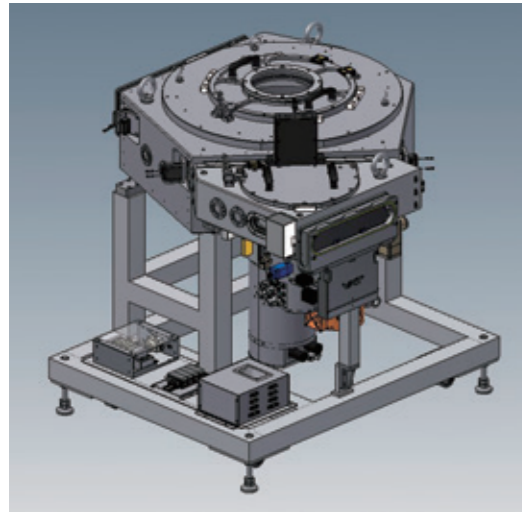# PLVS (PLUS)

Image: Vacuum Platform for 300 mm

The PLVS/vacuum platform is a clean transferring system which has high positioning repeatability and highly reliable vacuum partition performance using various units of the DDM (vacuum direct drive motor) drive section, which is a common feature of the vacuum robot and vacuum aligner.

The simple and high performance vacuum transferring system is realized by combining system configurations to meet the needs of the customer to apply to various semiconductor applications such as E-Beam Lithography, PVC, CVD, Etch, MR Head Deposition, MEMS, and Inspection & Metrology.

■ Features

- ●Suitable system configuration and small footprint
- ●Clean transferring operation
- ●Ultrahigh vacuum
- ●High throughput

■ Main specifications

Load lock	Single, dual, and buffer type
Single unit	DDM vacuum robot, Vacuum aligner, and Vacuum elevator
Work size to be handled	450 mm, 300 mm, 200 mm, 150 mm, and square substrates
Connecting process	1 process to 8 processes and various processes
Vacuum performance	1E-6Pa or less
Vacuum pump	Dry pump and turbo pump
Surface treatment	PM processing and various treatments

■ Turntable RI150 SERIES

■ Work size to be handled

- ●300 mm works, 200 mm works, 150 mm works, and square substrates

■ Main Specifications

- ●Ultrahigh vacuum using the vacuum partition structure
- ●Motion speed: 3 sec/360 deg
- ●Resolution: 0.000343 deg/pulse
- ●Load capacity: 1 kg maximum
- ●Repeatability: ± 0.02 deg Note 1

Note 1: Reference value for 300 mm wafer notch orientation using a camera

■ Elevator RE161 SERIES

■ Main Specifications

- ●Ultrahigh vacuum using the bellows structure
- ●Motion stroke: 70 mm or 300 mm
- ●Load capacity: 50 kg
- ●Repeatability: ± 0.05 mm

■ RM processing (Surface treatment technology)

■ Surface treatment

The surface area is minimized by planarizing the nano-level minute uneven surface using the etching process. Extremely-low outgas performance is realized by lowering gas emission and minimizing gas adsorption using the creating process of the dense oxide passive film.
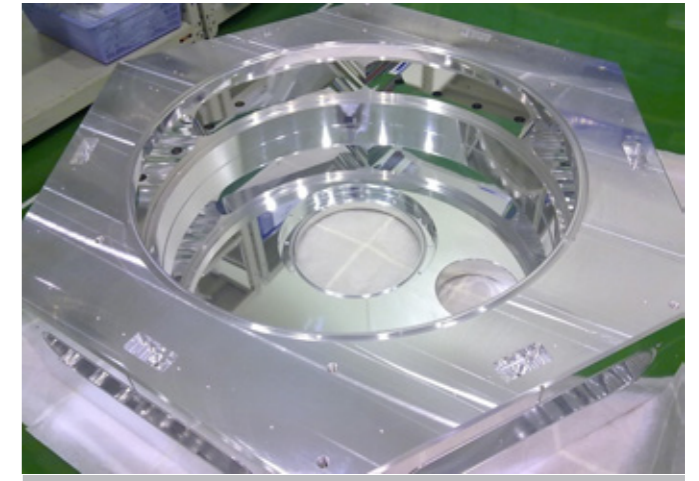

Transferring chamber on which RM processing is performed

■ Features

The dense oxide passive film (thickness of 10 nm or less) is created on the surface after the RM processing is performed, and barrier effect for reducing of outgas included in the base material is expected. The residue is removed by performing the cleaning process after "RM processing" to minimize impurities.

Regarding the components of the outgas in ultrahigh vacuum and generated by baking, the most of the removed components are m/z=18 (H_2O water); therefore, a high cleaning level is realized without fear of impurity contamination.

Difference of the surfaces due to the difference in the processing method
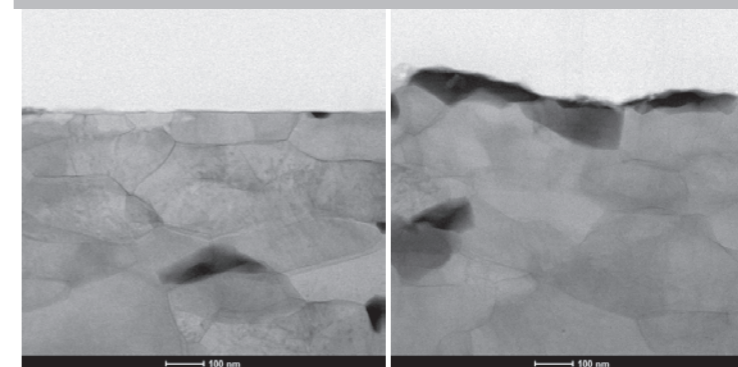
■ Application

This is suitable for vacuum chamber which needs the ultrahigh vacuum performance and low contamination performance, semiconductor processing equipment, semiconductor processing equipment improving throughput by shortening the time interval of vacuum evacuation with ultralow outgas performance, and transferring chamber.

Atmospheric Robot

Vacuum Robot

Load Port

Aligner

EFEM

Sorter

Stocker

Reticle Handling System

Vacuum Platform

Life science relevant products

Software Solution

Active Load Port

Support Network