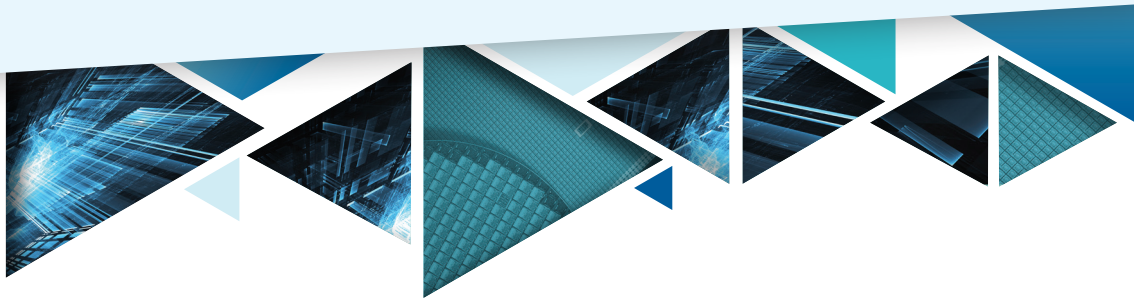
Non Contact Semiconductor Chuck

Your Solution For Wafer Backside Contamination



CoreFlow develops manufactures and markets advanced handling and conveying solutions for Semiconductor and Flat Panel Display (FPD) equipment manufacturers. With more than 700 installations worldwide, CoreFlow's air floating solutions can be found on the production floors of many top manufacturing fab plants.

The Semiconductor Industry

Driven by the high requirements of wafer handling, CoreFlow addresses the challenges of reducing back side contamination and handling thin and flexible wafers, for various applications within the semiconductor process.

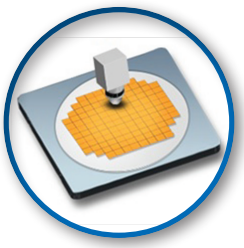
Non-Contact Chuck

CoreFlow's air floating solution can be integrated into inspection, metrology and other semiconductor process systems, providing consistent and reliable handling of wafers with no contact at either the back or front side. When required, CoreFlow's chuck can clamp the wafer's front side while a process such as polishing/grinding, is applied on the back.

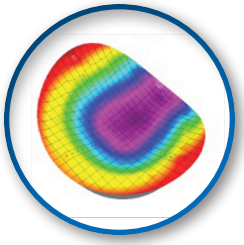
Product Benefits

- Increases process yield
- Eliminates back side contamination
- Attenuates vibrations
- Levels warped wafers
- Reduces thermal stresses
- Enables flexible design

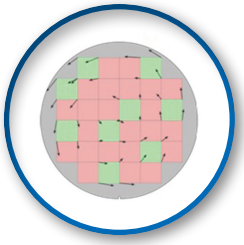
Examples Of Applications



Inspection

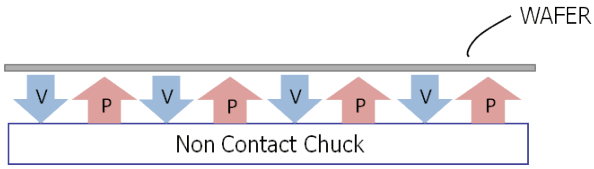


Metrology



Overlay

Pressure Vacuum (PV) Concept



Two dimensional arrays of SmartNozzles, one of vacuum and the other of pressure keep a very narrow, predefined air gap between the wafer and the chuck. The Wafer floats over the chuck while it is pneumatically clamped, eliminating back side contamination and friction wear. The counter Pressure Vacuum forces rectify immediately any excursions and return the wafer to its pre defined air gap (fly height)

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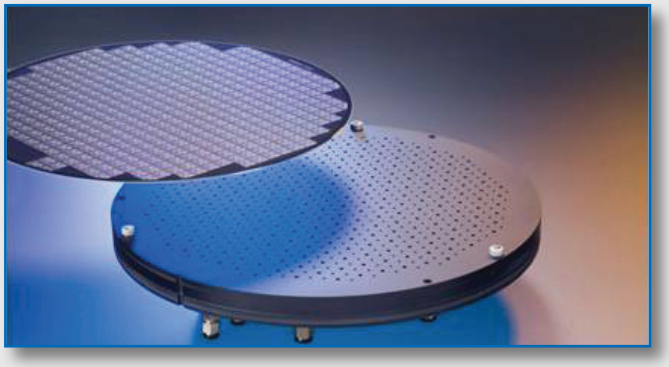
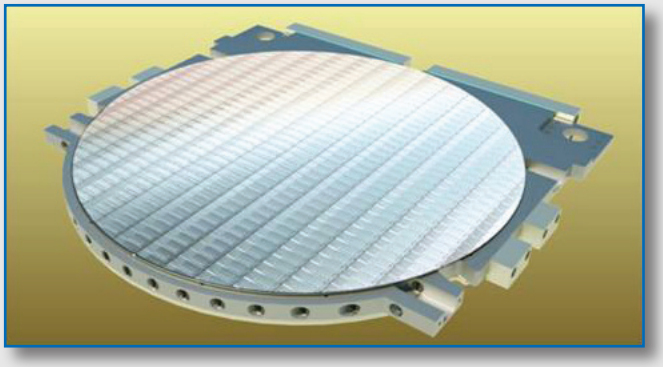
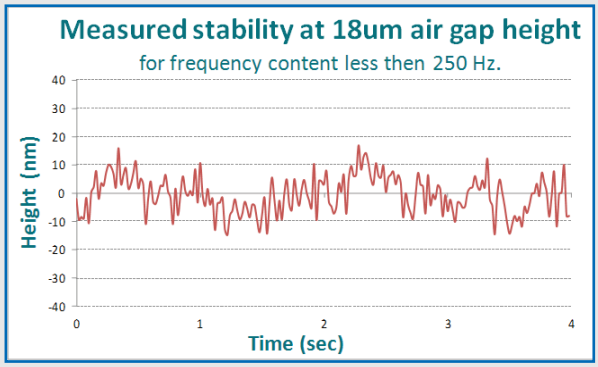
Product Specifications

Items	Description
Air-gap Accuracy [µm]	< 2
Mechanical Flatness [µm]	< 2
Stability (jitter) [nm]	±20
Clean-room Environment	Class 10 compliance
Build To Print	Complete scalability, designed for any chuck dimension and shape
Wafer Thickness Range [µm]	100 – 700
Typical flow into the system [slm]	5
System reaction time (m.sec)	< 20
Typical flattening capabilities*	Flattening 0.1 mm warpage
Gas type	CDA, N2 or any other clean gas or liquid
Weight [kg for 300 mm wafer]	3.2
Chuck materials	SST 304, 301, Al 6061-T6 hard anodized
Dimensions** [300 mm wafer, mm]	Diameter-290.6 ; Thickness-21.4
Vacuum and pressure fittings	Quick-release fittings
Required vacuum and pressure input [mBar]	P= 150 : 200 V= -50 : -100

*Depends on wafer thickness and initial dome shape and radius
**Dimensions are customizable







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