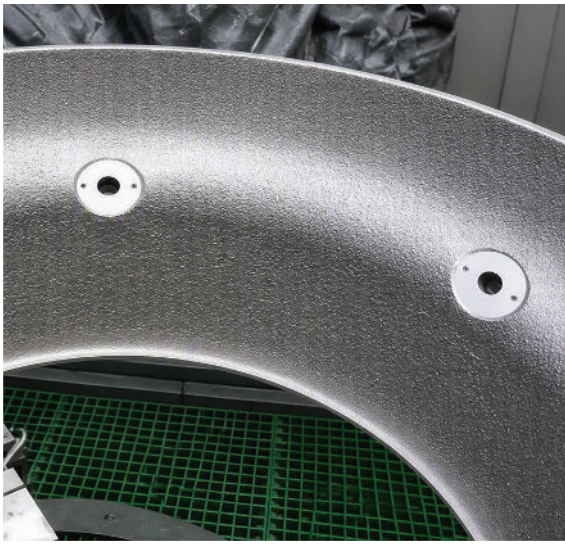
Semiconductor Deposition Cleaning

Forge Productivity with Ultrahigh-Pressure Waterjet Cleaning





In semiconductor wafer fabrication, deposition processes such as PVD (Physical Vapor Deposition), CVD (Chemical Vapor Deposition), ECD (Electrochemical Deposition), and ALD (Atomic Layer Deposition) are used to apply materials including tungsten, titanium, and copper to wafers. Over time, these same materials accumulate on critical process chamber components such as shields, collimators, clamping rings, and position rings, creating deposits that must be removed during refurbishment.

The Aquarese CSC Semiconductor Cleaning System uses ultrahigh-pressure waterjet technology to efficiently remove these deposits without damaging the underlying component, helping semiconductor manufacturers extend component life, reduce downtime, and eliminate hazardous chemical cleaning processes.

Why Ultrahigh-Pressure Waterjet Cleaning?

Unlike traditional chemical stripping methods, ultrahigh-pressure waterjet cleaning targets the fracture point of the deposit, allowing it to be peeled or broken away while preserving the base material.

Key Benefits

- No base material removal for extended component life
- Preserves surface roughness and critical dimensions
- Faster processing times than chemical cleaning methods
- Single process for multiple deposit types
- Recovers valuable deposited materials
- Eliminates hazardous chemicals and manual cleaning risks
- Stable, fully monitored cleaning process
- Flexible single-part flow for improved production efficiency
- Environmentally responsible with no toxic waste generation

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Typical Applications

Our technology effectively removes a wide range of semiconductor deposition materials from process chamber components, including:

- Tungsten deposits from aluminum shields
- Tantalum coating removal from aluminum
- TiNAl coatings from ceramic clamp rings
- Copper deposits from stainless steel position rings
- Deposits on shields, collimators, rings, and other chamber hardware

Whether the deposit is different from or identical to the base material, ultrahigh-pressure waterjet cleaning delivers consistent and reliable results.

The Waterjet Advantage

Waterjet Cleaning vs. Chemical Baths

Capability	Waterjet Cleaning	Chemical Baths
Removes various deposit types with one solution	Yes	No
Preserves base material*	Yes	No
Maintains surface roughness	Yes	No
Enables collection of valuable deposits	Yes	No
Fully monitored and repeatable process	Yes	No
Flexible single-part production flow	Yes	No
Shorter processing time	Yes	No
Generates toxic or hazardous waste	No	Yes
Removes deposits identical to base material	Yes	No

* very little base material may be removed

Safe. Effective. Sustainable.

As semiconductor technologies advance, manufacturers need cleaning solutions that improve productivity while reducing environmental impact. Ultrahigh-pressure waterjet cleaning provides a proven alternative to chemical stripping, delivering exceptional cleaning performance while protecting valuable process chamber components.

Shape Process Automation

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