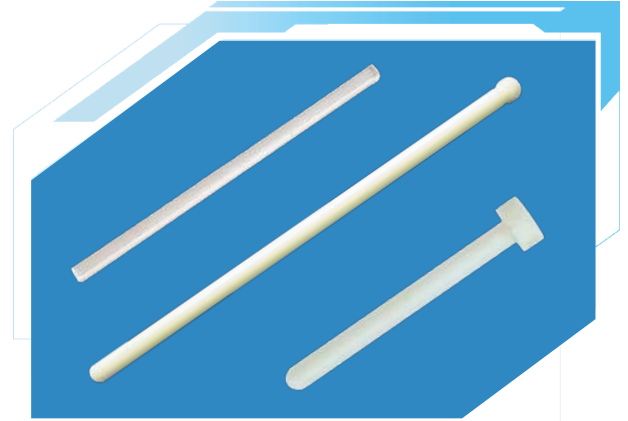


Ceramic lift pins are essential components used for semiconductor manufacturing wafer handling systems. Lift pins have the critical role of supporting process wafers moving into process modules within fabrication equipment. Fralock manufactures high quality lift pins made from high purity alumina and sapphire ceramics using robotics and automated grinding equipment.

## Ceramic is a preferred material for lift pins due to:

- Superior chemical resistance
- Dimensional stability
- Wear resistance
- Tight tolerancing
- Thermal stability
- Low particle generation
- Customization



## WHY FRALOCK ?

We offer a multitude of material choices and automated manufacturing capabilities to provide your organization the optimal lift pins for your application.

- Automated manufacturing cells to maximize productivity and quality and produce consistent high quality ground parts
- Centerless grinding for precise diameter/alignment control ( $\pm 5$  microns)
- Ultra-smooth mirror finish polishing available to reduce particulate defects
- Cost and lead time optimization by machining near net shape raw ceramic stock shapes
- Multi-source supply chain
  - Internal Cold Isostatic Press (CIP) capability for making high purity alumina ceramics
  - Large sapphire supply chain
- Quick turn capability via inventory management
- Consignment stocking agreements
- In-house / localized cleaning capacity
- In house Semi T10 compliant laser marking and kitting available per customer request
- Many high purity ceramic material choices
  - Al<sub>2</sub>O<sub>3</sub> in various purities
  - Sapphire - purity up to 99.9999%
- Can be combined with robot end effectors and other wafer handling assemblies





## Quality Policy



We are committed to be a trusted partner in providing solutions to the customers' requirements and goals.


As team members we strive to continually improve our processes and systems, aligning with the company's Mission and Core Values.

We carry out our Quality Policy in a socially responsible manner compliant with all applicable statutory, regulatory, and company policies and procedures.



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