



HARD DISK INDUSTRY

THIN FILM HEAD CLEANING SYSTEM

The Situation

The largest manufacturer of hard disk read/write heads approached Owens Design to support the introduction of their revolutionary new product -- the GMR head. The GMR head required precision cleaning, much tighter process control, and was very sensitive to ESD damage. The manufacturer's current cleaning technologies were not sufficient and they needed to develop the next generation thin film head cleaner.

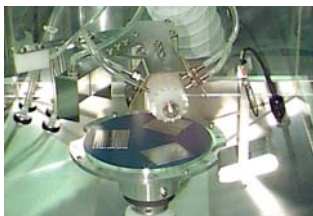
The Challenge

The unique challenge in designing for a new technology is predicting and responding to the changes required as the process parameters are fully developed. The design would have to be flexible, yet provide high throughput automation, excellent reliability, and ease of maintenance. Due to much tighter process windows, new sensing technology would be needed to compensate for brush wear and process variations.



The Solution

Owens Design responded to the challenge by developing a highly reliable, highly flexible head cleaner incorporating many innovative design elements. The design provided a unique method for detecting and adjusting for brush wear, for allowing fast tooling chuck changes, and for complete recipe control over the key process variables. Process testing confirmed that the new tool provided contamination reduction, easy to use fixturing, and better ESD control.



Thin Film "Row Bars" Being Cleaned



Brush Tower Showing Nitrogen Nozzle



Innovative Vacuum Chuck Allows Fast Tooling Change