

# ESC Pedestals



In the demanding Semiconductor market, where reliable product performance, high yield and low cost-of-ownership are often backed by competitive cycle-life warranties, Technetics Group pedestals can help you reduce risk and lower costs.

Our experienced development, design and manufacturing teams combine over 50 years of bellows component knowledge with the newest chamber technologies to create products that exceed your application requirements. PVD, CVD and Etch process systems can be designed for improved yield and longer life because our engineers will work with you to provide design solutions and advanced pedestal coatings that increase reliability, minimize particle generation and improve thermal uniformity.

Technetics Group's onsite PVD and CVD deposition operations provide a distinctive understanding of process constraints and critical pedestal assembly characteristics. We have unique capabilities in designing and monitoring demanding test criteria in chamber environments that simulate Fab conditions.

## TECHNETICS GROUP ADVANTAGE

- Less Development Risk
- Lower Development Costs
- Faster Time to Market
- Convenient Pedestal "Burn-in" and Testing Services that Eliminate End-Customer Validation
- Lower Cost-of-Ownership for Users
- Real-time Online Pedestal Data Tracking
- Vertically Integrated

## Services

### CONCURRENT ENGINEERING CAPABILITIES

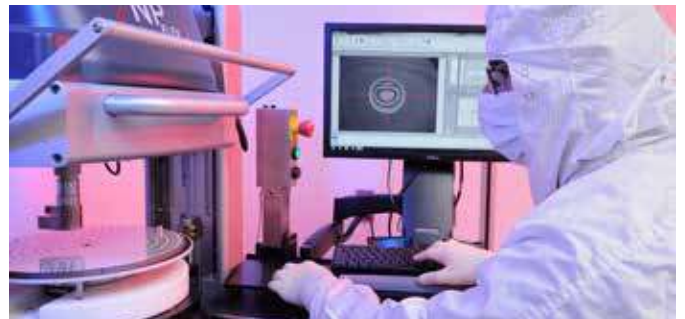
- Ceramic Integration
- Advanced Coating Development and Deposition
- Engineered Surface Treatments
- Temperature Control

### SIX-SIGMA MANUFACTURING FOCUS

- Specialty and In Process Precision Machining
- Rigorous Process Control
- Complex Welding, Including up to 150kV Electron-Beam
- Extreme Flatness & Perpendicularity
- Tolerance Control
- Paperless Clean Room Assembly & Welding
- Edge-welded Bellows Design & Manufacturing

### COMPREHENSIVE TEST PROGRAMS

- System and Sub-System Performance
- "Burn-in" and Testing for Chamber-Based Heater Pedestals
- Rate of Rise
- Thermal Uniformity
- System Tests in Process Chambers that Simulate Fab Environments
- Serialized Online Test Monitoring
- Residual Gas Analysis (RGA)



**TECHNETICS GROUP**  
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**Technetics**  
GROUP

EnPro Industries companies

## Facilities & Capabilities

### EXPERIENCE

- Over 500,000 BELFAB® Bellows Produced
- Over 12,000 New and Refurbished Pedestals Produced
- Extensive Design Database
- Experienced in 150mm, 200mm, 300mm systems
- Key/Preferred Supplier to Leading Equipment OEM's
- Manage Rare or Exclusive Materials Procurement & Integration

### ENGINEERING

- Pedestal Design, Fabrication, Coatings, Testing & Repair
- CAD (Computer Aided Design)
- Solid Modeling
- FEA (Finite Element Analysis)
- Polishing
- Vacuum Brazing

### QUALITY

- Six-Sigma Focus/ISO 9001/SSQA Certified
- Class 100/Class 1000/Class 10000 Clean Rooms
- Award-Winning Quality Programs

### COMMUNICATION & CUSTOMER SERVICE

- Concurrent Engineering
- Detailed Program Review
- Configuration Management
- Process Development
- Video Teleconferencing
- Online Access to Serialized Test Results

### WELDING

- Electron Beam (EBW) (up to 150kV)
- Gas Tungsten Arc (GTAW)
- Laser
- Micro Plasma Arc (PAW)
- Orbital Gas Tungsten Arc

### FACILITIES

- 60,000 Square Feet of Facilities
- Significant, Scalable Class 100, Class 1000, Class 10000 Clean Room Capabilities

### MATERIALS

- 300 Series Stainless Steel
- AM 350 Stainless Steel
- Hastelloy C
- Haynes 242
- Inconel 625 and 718
- Titanium
- Kovar

