

Air Bearing Spindles

ABTech's high precision air bearing spindles provide the ultimate performance utilizing a proven and robust design. High stiffness, load capacity and very low error motion make these spindles ideal for precision machining, grinding, single point diamond turning, and high precision scanning. Available with integral brushless dc motor and encoder in low speed configurations for work holding or higher speed for grinding and scanning applications.

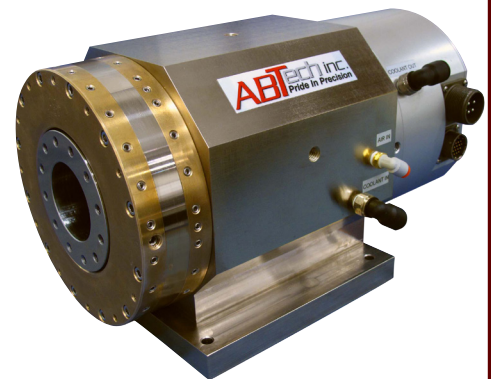
These orifice compensated air bearing spindles use a single piece of 440 CSS shaft and thrust plate with 660 bearing bronze journal providing a proven, robust and forgiving design. Available in a variety of sizes and speeds with a flange, foot, or a-thermal mounting.

Optional motion controllers incorporate a digital amplifier with easy-to-use programmable controls and digital spindle speed readout. Fully integratable with your existing CNC controller.

With this modular design approach and complete engineering support capabilities **ABTech** will respond quickly to provide a custom solution to your unique O.E.M. needs for ultra-precision motion. No need to settle for standard catalog offerings for your application.

ABTech's quality, accuracy, design flexibility, and exceptional customer service are the reasons why many companies have chosen our air bearings for their most demanding ultra-precision motion systems

For more information please visit [ABTech's website](http://www.abtechmfg.com)



ABTech's Air bearing design

- Aposing pad preloaded design ensures an even air gap on all air bearing surfaces.
- Large air bearing surface area maximizing the bearing stiffness and averaging of geometric errors within the rails to minimize Pitch, Roll, Yaw, Straightness and Flatness errors.
- Application specific material selection includes hardened 440 CSS, Hard-coated aluminum, granite, or ceramic.
- Surfaces ground and lapped to extreme geometric tolerances.

Linear Motor Drive

- Using the highest quality Ironless core linear motor ensures zero cogging without any unwanted attractive forces between the coil and magnet track.

Optical Encoder

- Using industry leading optical encoders, we provide position resolution down to 5nm and compensated position accuracy to +/- 50nm.

Motion controls

- ABTech provides a full range of controls from single axis motor amplifiers to complex multi axis motion controllers and application specific software front end.

Options

- Motor drives and controls.

- Encoders and digital readouts (DRO).
- Vacuum feed through the center and vacuum controller to hold sensitive lightweight parts safely and securely.
- Custom bolt patterns, fixtures and chucks.
- Flange, Foot, or athermal mounting configurations.

Accessories

- Custom fixturing and work holder tooling.
- Gage stands.
- MicroTIR electronic gage packages.
- Granite surface plates.
- Structural steel frames with passive vibration isolation leveling feet.

Benefits

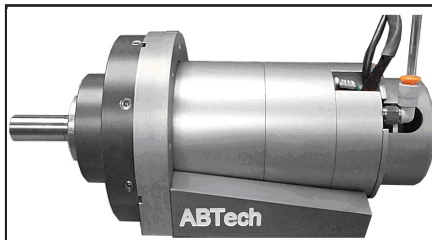
Our "Pride in Precision" philosophy means providing you with the precise solution needed. We don't believe selling our customers more, or less, than what their application calls for. Each air bearing is uniquely adapted to our customer, therefore expectations are always met and exceeded. For over two decades working with our customers we've developed a broad range of options and accessories to address the majority of ultra-precision motion applications.

Turnkey systems

With over 20 years of experience and a wide range of Air Bearing Spindles, Linear Slides, Rotary tables and machine tool controllers, let ABTech design and build your complete turnkey system.



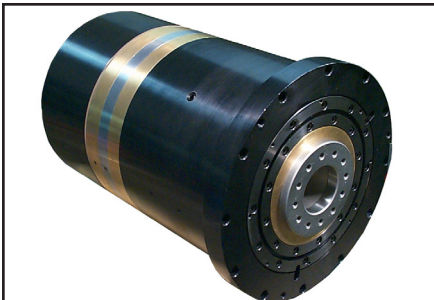
20,000 RPM air bearing spindle for 3-Dimensional imaging system. Brushless DC motor drive and optical encoder with capacitance probe gap monitoring system.



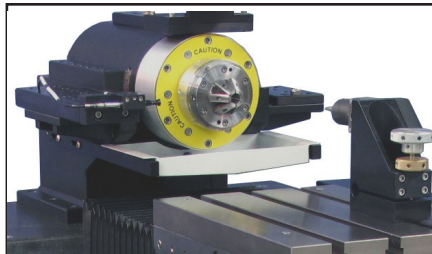
3,000 RPM air bearing spindle. SP38 Compact design constructed of hardcoated aluminum with brushless dc motor drive, optical encoder and vacuum feed through the center for work holding.



20,000 RPM air bearing spindle for diamond turning of contact lenses. Integral Brushless DC motor and optical encoder, dual plane balanced and liquid cooled housing.



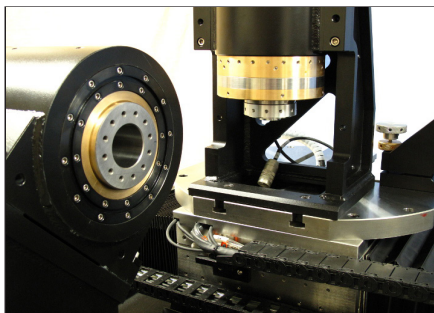
5,000 RPM SP180 air bearing spindle for work holding applications. Integral brushless dc motor and optical encoder with vacuum feed thru center.



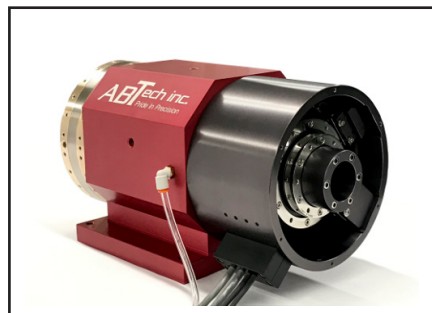
10,000 RPM Air bearing spindle with custom chuck, A-thermal mount housing, brushless dc motor and optical encoder for diamond turning of high precision valve bodies.



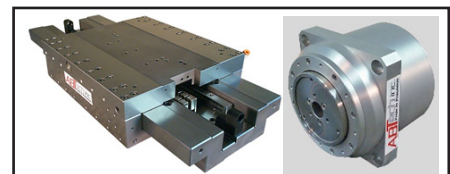
10,000 RPM SP138 with Foot mount housing, liquid cooled, brushless DC motor and optical encoder for work holding or grinding applications.



SP180 work holding spindle and SP138 Grinding wheel spindle configured for drum lathe /grinding application.



SP138 air bearing spindle with dual encoders for high precision data capturing application. The system required a sampling rate of 1,000,000 samples per second.



ABTech has a complete line of linear air bearing slides, air bearing rotary tables, mechanical rotary and linear stages, and Hydrostatic rotary and linear stages. With decades of experience in Precision Engineering and Manufacturing of complex multi axis systems, let us help you with your next precision motion system.