

High Speed Spindle

ABTech designs and manufactures high speed air bearing spindles as components for ultra-precision grinding, fly-cutting, ruling and lathe machine applications.

Ultra-Precision Air Bearing

With a integral brushless DC servo motor drive the SP138 spindle has been tested at 10,000 RPM achieving less than 2 μ " radial and axial error motion and less than 1 μ " asynchronous radial error motion.

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

With a modular design approach and complete engineering support capabilities ABTech can and 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.



Features and Options:

- Ultra-smooth motion with no static friction
- Orifice compensated air bearing design
- Low air consumption (2.5 CFM @ 100 psi)
- Robust construction:
 - Hardened 440C stainless steel shaft/thrust plate
 - 660 bearing bronze journal
- Built in adjustment for balancing to customer's tooling
- Liquid cooled motor and bearing housing
- Flange, foot or athermal mounts available
- Motor controllers and HMI available.

Performance Specifications:

- Accuracy (@ 10,000 rpm and 100 psi):
 - Total radial error motion < 2 μ "
 - Radial asynchronous error motion < 1 μ "
 - Total axial error motion < 2 μ "
- Stiffness (@ spindle nose)
 - Radial stiffness: 0.50 lbs./ μ "
 - Axial stiffness: 1.25 lbs./ μ "
 - Tilt stiffness: 17 in-lbs./ μ Rad
- Working load capacity (60% of ultimate)
 - Radial @ spindle nose: 100 lbs.
 - Axial: 240 lbs.
- Dual plane balanced to G0.4 specifications



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Designed, manufactured, assembled and tested with Pride in Precision in the United States