

SP125

Air Bearing Spindle

ABTech inc. manufactures high speed air bearing spindles as components for ultra-precision fly cutting, grinding, ruling and lathe machine applications. SP125 spindles are available in either flange mount or center mount designs with a 5" thrust plate and a 7" long shaft for increased radial stiffness.

With a finely tuned brushless DC servo motor drive the SP125

spindle is tested at 6,000 RPM achieving less than $2\ \mu$ " in radial asynchronous error motion at a distance of 1" from the spindle nose with axial error motion of less than $2\ \mu$ ". Higher speeds and custom performance levels are available.

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



**High Speed
Spindles**

*Shown with standard flange mount and optional controller (main photo)
and optional center mount without outer cover (inset right)*

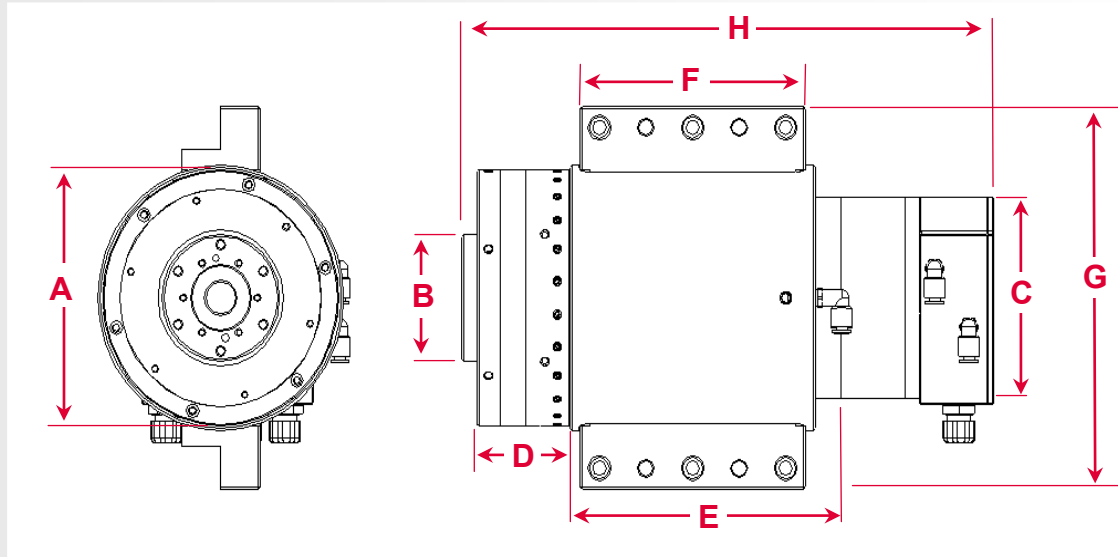
Features:

- Ultra-smooth motion with no static friction
- High load capacity and stiffness with low air consumption
- Dual plane balanced to G0.4 specifications
- Minimal radial asynchronous error motion
- Stainless steel air bearing spindle
- Flange mount or center mount options
- High resolution rotary encoder
- Liquid cooled motor housing option
- Easily accessible balancing adjusters
- Operator control console with digital amplifier and speed readout
- Modular design – custom systems can be provided for O.E.M.

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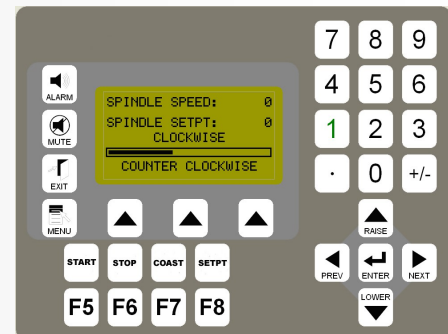


Specifications

	SP125
Flange Diameter (A)	6.25" (158.75 mm)
Shaft Diameter (B)	3.00" (76.2 mm)
Housing Diameter (C)	4.74" (120.4 mm)
Mounting Flange Depth (D)	2.44" (62.0 mm)
Shaft Length (E)	7.0" (177.8 mm)
Center Mount Dimensions (optional) (F & G)	5.74" (145.8 mm) 9.00" (228.6 mm)
Overall Length (H)	13.53" (343.7 mm)
Radial Load Capacity*	110 lbs (50 Kg)
Axial Load Capacity*	150 lbs (68 Kg)
Air Usage	1.5 scfm (2.6 m ³ /h)
Operating Speed Range	0-6,000 RPM
Radial Stiffness (at spindle nose)	0.367 lbs/μ"
Axial Stiffness	0.75 lbs/μ"
Radial Error Motion	4.0 μ"
Radial Asynchronous Error Motion	2.0 μ"
Axial Error Motion	2.0 μ"

Options & Accessories:

- Motion controller with programmable touch pad
- Custom HMI front ends
- Center mounting option
- Outer protective cover
- Vacuum chucks
- Precision collet tooling
- Liquid cooling
- Dual element filter/regulator
- Linear stage assemblies
- Granite surface plate bases
- Vibration isolation base frames



Typical motion controller touch pad layout

*Maximum load capacities - consult ABTech for recommendations on practical loads

~Load capacities are estimated at the front (nose)

~Performance can be affected by method of mounting the spindle and loading

~Radial test data is measured at 1" from spindle nose

~Error motion accuracies were tested at 6,000 rpm

~Special accuracies can be supplied

~Consult ABTech's engineers for moment loading and stiffness considerations

~Specifications are at 60 psi (4 kgf/cm²)

~Specifications are subject to change without notification