

Active Air Bearing Stage with Motion Error Compensation

Technology Overview

- Active linear air bearing stage with magnetic preloads for nanometer level of straightness error by active compensation of motion errors
- Simple configuration of stage by preloaded design and ultra-straight motion by active compensation of motion errors

Core Technologies

- Active magnetic preloads with permanent/electro-magnetic actuators
- Actuator design for linear compensation range and low heat generation
- Preloaded air bearing stage design for simple configurations
- Feed-forward compensation of motion errors up to 10 nm of straightness

Application Area and Advantages

- Ultra-precision machines using air bearings without motion errors
- Inspection and measurement system for semiconductors or display products
- Ultra-precision machining and measurement system for large stroke

Accomplishments

- Static bearing conveying apparatus having magnetically preloading and motional error correcting functions: EP191447, US007942099B2
- Actively compensated stage having 5-dof motion error compensation and motion error compensating method thereof: JP5473040, WO2012/165872

