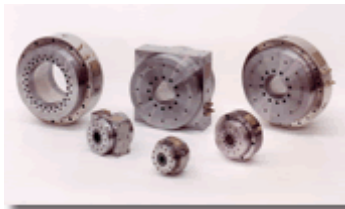


## Why BLOCK-HEAD® Spindles are the Best in the World

### Compensation

Air film compensation is direct and to-the-point; the bearing surfaces themselves provide the centering action. Reaction to a load is immediate, with no tendency to overreact. In machining applications this translates into smooth work with excellent geometry all the way to the edge. The air films are thin and the average pressure is high. **BLOCK-HEAD®** spindles have the hardest air in the business.



### Structure

Tilt loads are managed properly. They are decoupled from the radial bearings and supported symmetrically by equal and opposite thrust bearings of maximum diameter. Further to improve radial accuracy under load, the shaft is short, stiff, and isoelastic. In addition, the natural compactness of the design gives maximum load and stiffness for a given package size. We call this "volumetric efficiency". Other benefits include low thermal growth and the ability to shift the rotor axially by

changing the air pressure.

### Mounting

Extracting all these good qualities and putting them to work without losing anything in the translation is a challenge. Some necessary ingredients for good mounting are:

- Mating surfaces that are flat (to avoid distortion and to provide support)
- Wide stance for carrying tilt loads
- Proper mounting holes
- Reliefs and wiper grooves for cleanability
- Reference surfaces for inspection of alignment
- Contingency holes for mounting indicators and other accessories



### Workmanship

To work right, a spindle must be made right. This means that errors of form are driven down until they disappear into the surface finish. The bolted joints are properly mated and clamped. Included here as workmanship are designed-in values such as integral filters, proper reliefs at tapped holes, and the use of appropriate materials. Testing 100% assures that every spindle meets or exceeds the specified load capacity. The faces and outside diameters of the rotor are ground in assembly for geometry, appearance, and balance.

### Additional Values

Because we use them ourselves (we are one of our own best customers) we know how they perform. This enables us to give our customers solid, practical help in the use and care of **BLOCK-HEAD®** spindles. For instance, our **air drying system** is reliable and inexpensive because that is what we want for our own use. A rusted or crashed spindle can be rebuilt to original specifications, usually for less than one-third of the replacement cost. **Attachments** such as motors, chucks, mounting plates, and custom tooling benefit from the correct nature of the **BLOCK-HEAD®** design. Accessories can be close-coupled, tightly-held, and non-distorting. Spindles and systems are backed up by the expertise of Professional Instruments Company. We make it our business to help our customers use our products to

their best advantage.

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