

Large Motorized Machining Spindle Rebuilt

Speedy domestic spindle service saves time, money and trouble for U.S. machine tool builder

Application

Used in the automotive and heavy equipment industries to hold brake drums, fly wheels, hubs, and rotors, differential cases and housings while machining is performed, these spindles typically produce over 2,000 brake rotors per day, the spindles themselves acting as loading/unloading devices



Challenge

The machine tool spindle being used was foreign-made, and servicing the spindles was problematic for domestic installations. Because the spindles were of a proprietary design, spindle rebuild was difficult.

Solution

With complete capabilities to perform both the engineering and the manufacturing required for the spindles' rebuild, Gilman's Spindle Service Center was the logical choice for faster, more economical, on-shore rebuilding.

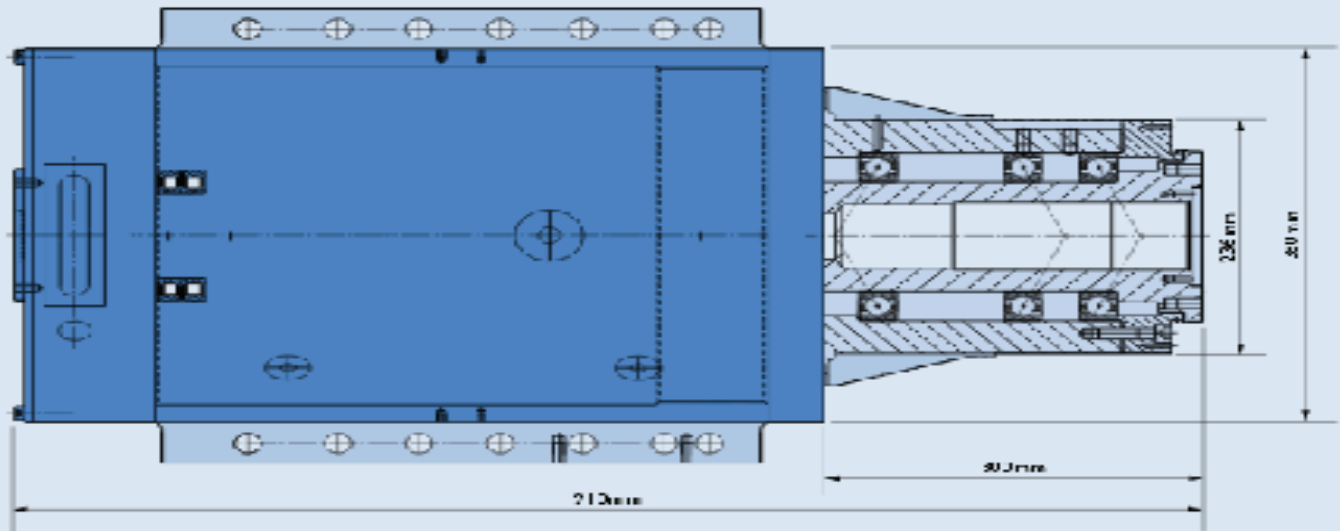


Cost Savings

By having Gilman Precision's Spindle Rebuilding Center do the work instead of shipping the spindles overseas, the manufacturer realized savings of thousands of dollars per spindle.

Time Line

By eliminating the time required to ship overseas, Gilman was able to reduce the turnaround time on rebuilt spindles by weeks.



Spindle Rebuild Process

- Disassembly and inspection of spindles
- Inspect shaft-bearing journal diameters for sizing and concentricity
- Inspect housing-bearing bores for sizing and concentricity
- Re-manufacturing spindle parts as necessary and align tolerances to original specifications
- Inspect motor parts and repair
- Each spindle receives a run-off test and carries a new spindle warranty upon leaving the Gilman Precision Spindle Service Center

Technical Specifications

Weight:	1,050 lbs.
Bearings:	110mm ball bearings - front 85mm cylindrical roller bearings - rear
Max. Speed:	4,000 RPM
Operating Speed:	3,000 RPM
Max, Forces:	Axial load: 2,300N Radial load: 9,000N
Lubrication:	Grease
Running Accuracy:	Axial and radial runout < 5µm
Balancing Quality:	G 2.5
Power (100% operation):	$P_{S1}=28$ kW between $n=900$ and 4,000 RPM
Torque (100% operation):	$M_{nom S1} = 340$ Nm at $n=900$ RPM