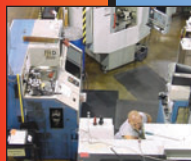
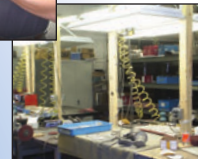
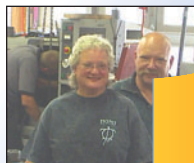




AMERICAN MACHINIST

EMPOWERING METALWORKING MANAGERS



GRINDING

**BOOST OPTIONS
WITH A B-AXIS**

Page 42

TOOLING

**MULTIFUNCTIONAL
INSERTS**

Page 18

MACHINING

**BREEZE THROUGH
COMPLEX PARTS**

Page 10

100 BEST MACHINE SHOPS

Meet the shops with the best
operating results in the U.S.



BEST MACHINE SHOPS

THE AMERICAN MACHINIST 2006 benchmark survey of the U.S. machine shop industry helped to uncover and determine shops that are using the ideas of systematic measurement and business improvement methods based on carefully measuring the factors that lead to success.

Finding who these shops are was just one step in the development of a tool that can help to make all metal-working shops more efficient and profitable. With this report, we are providing very strong examples of the shops that are doing so.

These shops are not giants in terms of sales. They are, for the most part, small- to mid-sized machine shops that are working hard to please their customers.

However, they are giants in their field. They are taking the business of owning and operating a machine shop to a new level, using advanced management techniques.

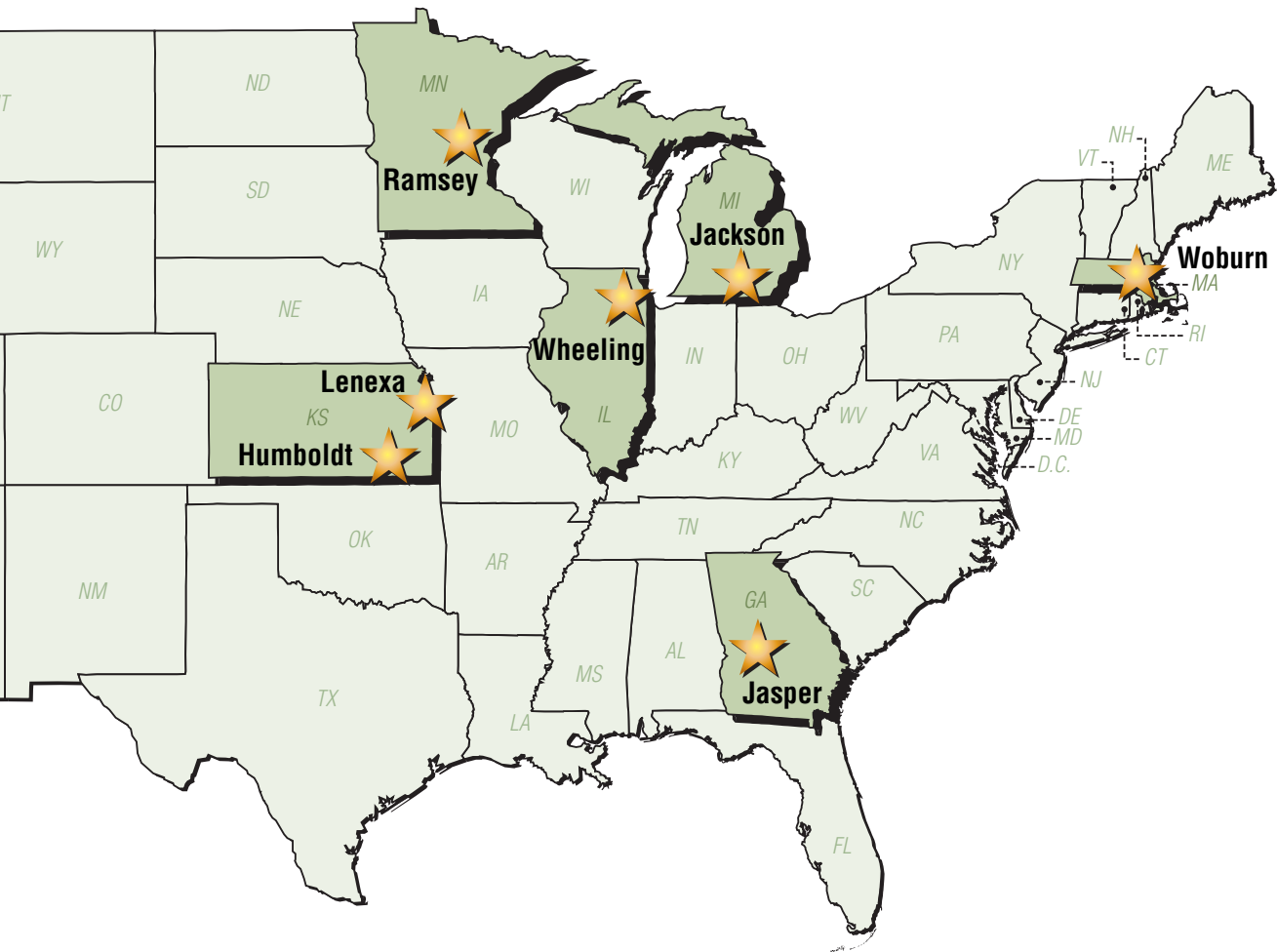
Here are the American Machinist
10 Best Machine Shops

BY BRUCE VERNYI | EDITOR-IN-CHIEF

PNM Company
Fresno, Calif.
www.pnmcnc.com

**Voted one of the
10 Best Machine Shops**





The shops range from a one-year old operation with sales of \$150,000 that is expanding with new equipment to a \$15 million operation with 75 employees. They are based across the United States, from Massachusetts to California and from Georgia to the State of Washington.

These shops use a variety of equipment, from the latest multi-axis, multifunctional CNC machine tools to a manual jeweler's lathe, and they serve an equally wide variety of markets, from the auto and aerospace industries to the medical and electronics industries, and their production runs range from one-piece to thousands. While these shops serve many domestic markets, they say orders from their customers come from all over the world.

Some common traits emerged from interviews with the management of each of these shops. American Machinist editors visited each of these shops since August 1, to talk about and to see their operations first hand. Each profile that follows is based on an editor's visit to the individual shop.

The most common feature that these shops share is the commitment that their management makes to their people

and the commitment that is returned to the shop from the personnel at the plants. Each of these shops - as the leading shops in the overall survey proved - have developed the ability to attract and retain good employees, and to motivate their employees to take ownership of the work they do.

American Machinist identified several factors in its benchmarking survey as best practices, and we found that these shops excel in each of those practices. But they do so as a matter of course, as a part of the business culture on which these shops were established. The 12 leading indicators that arose from the American Machinist benchmarking survey can be found in the June issue of American Machinist or on-line at (www.americanmachinist.com.)

The business philosophy for these Best Shops can be distilled as the idea that running a systematic, metric-based operation is better than running an operation with a haphazard business plan, and that such an organized method—no matter how much work it requires—is the first requirement for success. This report is merely recognition of their success in putting that business philosophy to work.



SHAVING SET-UP TIME GOAL FOR PNM

Investments in horizontal machining and pallet system boost productivity.

BY BRUCE VERNYI | EDITOR-IN-CHIEF

DAVE COUNTS CONSIDERS IT GREAT progress when he or one of his company's 52 employees can shave five or 10 seconds from their set-up time.

"We our of the mind-set that we have to make something 'twice-as-good,' so if we can get five seconds better at doing what we're doing, we are making progress," Counts says.

Counts is the president of PNM Company, a contract shop that serves the aerospace, electronics, medical, food processing, automotive, lighting, government, and commercial manufacturing markets.

While the shop runs a strong quality program and maintains a low scrap rate, Counts says he has been focusing on reducing set-up time to boost its productivity. "Set-up time is the key to everything. You have to reduce it as much as possible," he says.

PNM recently invested in and installed four horizontal machining centers and equipped them with a pallet-changing system as one way to address set-up times. The 19-year-old company operates four horizontal milling machines fed by a 13-pallet automatic changing system, four vertical milling machines, nine lathes/turning centers, two Bridgeport vertical mills and a broaching machine.

The company has sales of about \$7 million a year, and about 60 percent of its machined parts are low-volume runs, which Counts defines as parts that are in lots of less than 30 parts per day.

Its pallet system allows it to mount as many as 45 parts on each of the tombstone pallet faces that are fed



Dave Counts sees successes in shaving five seconds from set-up and machining times.

into the horizontal machining centers. Different parts can be pre-set on the same pallet faces, and the machines are programmed accordingly. Presetting parts on the pallets led to PNM cutting part set-up time for one job that typically has lot sizes of 90 parts by 75 percent, from two hours down to 30 minutes, Counts says. And, he has numerous similar stories about reducing set-up time.

Also, the pallet system and horizontal machines allow PNM to set up jobs so that they can run for eight-hour

attended by one machine operator — whose primary function is to do set-ups while the machines cycle parts — then run for 16 hours in a lights-out, unattended mode.

The operator typically can set up workpieces on 17 pallets in an eight-hour shift. With an average four-minute machine cycle time, each pallet has 12-hours of run time, and multiple pallets queued for the machine allow for well-over the 16 hours of unattended run time.

"We have been in the business of selling labor, and I think we have to get out of that. Now, I am viewing our operation as selling "real estate" on the tombstone," Counts says.

The shift to the pallet-changing system and horizontal machining centers has increased PNM's productivity, but Counts says he is working to boost the company's productivity to reach sales of \$200,000 per employee. Reaching that goal — which translates to about \$10.5 million in sales with 52 employees — will make the PNM operation world-class in Counts' eyes. With its current amount of sales, PNM now reports \$134,000 in sales per employee each year.

PNM Company
Fresno, Calif.

www.pnmcnc.com

Number of employees — 52

2006 sales — \$7 million

Markets served — Aerospace, electronics, medical, food processing, automotive, lighting, government, and commercial manufacturing

