

Second-Generation Job Shop Seizes Success in Medical and Aerospace Parts

What manufacturing recession? Since 1988, Mack Tool & Engineering (South Bend, IN) has been growing in the industrial heartland by embracing change and successfully taking on the challenges of supplying complex medical and aerospace parts.

Originally Mack Tool & Die, the company was started by Melvin Hartz, going out on his own after decades of experience in the machine tool trade. "Mack was my great-grandmother's maiden name, and incidentally my middle name," explains Paul Hartz, Melvin's son and Mack Tool's vice president of engineering and finance.

The company's expertise is in producing medical and aerospace parts and successfully proving its value to customers. "We make complicated parts, not four holes in a plate," says Paul Hartz. And although the parts are complicated, the business goal is simple. "Productivity," Hartz affirms. "The money is made on the shop floor, and the job is to keep the spindles turning."

The Move to Multi-Tasking

Survey Mack Tool & Engineering's capital equipment and you'll see a virtual timeline of the company's history. The inexpensive entry-level mills and machines of the company's early years have been sidelined in favor of the multi-tasking Integrex 200-III SY, five-axis Variaxis 630/5X, and the powerful PFH4800 four-axis horizontal machining center from Mazak Corp. (Florence, KY). You'll also see such productivity advancements as Mazak's Palletech material-handling automation, two-pallet changers where applicable, Mack-engineered six-sided tombstones, and 120-tool magazines on

the company's newest machines. Everything has been designed to keep the spindles running. "I don't buy equipment for a project," Hartz says, "I buy machines that better produce the parts I have."

Labor setups while the machines are running and the ability to produce complex parts in a single setup complete from a customer's CAD files allow Mack Tool & Engineering to aggressively separate itself from the pack. "Although there's been tremendous change over the past 15 years, we keep giving the customers what they want," says Hartz. "Right now, that's on-time delivery, small lot sizes, short lead times, and 100% quality."

Mack is also on a mission to convince selected customers to machine their parts from solids rather than wait weeks or months for castings or forgings. "We've shown we can cut total time for parts down from eight weeks to under a week," Hartz says.

The goal may be simple, but the firm's experience has been anything but. "The precision machined part market has changed more in the last 10 years than in the previous 50," Paul Hartz explains, calling the results a technology-induced depression. "Because of advances in CNC machine tools and CAD/CAM technology, the same amount of product can be produced with less manpower. Fewer machining companies are able to produce more products than are currently being produced."

Mack's mix of medical and aerospace customers also adds complexity. "The medical industry doesn't believe in level loading," Paul Hartz says. "It can soar, and it can stop." Although he describes his company's part mix as roughly 50/50 medical and aerospace, the shop is always pushing for more work to balance market fluctuations.

During market ups and downs, however, the Hartz family's strategy has been simple and straightforward: Build a quality shop and they will come. This strategy has three supporting concepts: Hire people that care and put them in an environment where they want to succeed; use technology to increase productivity; and use constant change

for continuous improvement. Says Hartz, "If you wait until you have to change, it may be too late."

The company also adds value for customers by performing pressure testing, power flushing, assembly, kitting, and shrink-wrap packaging.

Are customers paying attention? In an overall manufacturing slowdown over the past two years, Mack Tool & Engineering has grown without laying off people.

"Customers are always looking for high quality," Hartz explains. "Technology has made us competitive on higher-end parts, and when you deliver complex, high-value parts on time, you make the buyer look good."

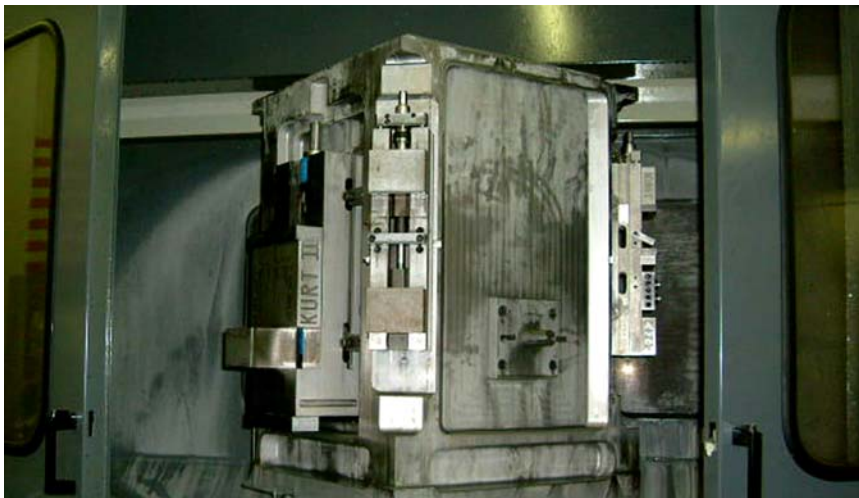
Mack's emphasis on technology and automation also allows the company to upscale or downscale quickly in response to business conditions. "With reliable equipment, we're safely cutting inspections and allowing a single operator to run more machines."

Hartz is quick to compliment his people, "non-button-pushers," as a key ingredient in the company's growth. "As long as we're creating a good business, my employees will back me up." This is confirmed by the company's processes being certified to ISO 9002 standards and AS 9100 for aerospace manufacturing.

"We're committed to turning a profit no matter what the yearly sales are," Paul Hartz boldly asserts. "This is accomplished by minimizing fixed costs and controlling variable costs based on manufacturing levels." And true to their objective of constant change, the company has broken ground on a 10,000-square-foot addition that will double its manufacturing space in 2005. "Companies want to decrease their supplier base to decrease administrative costs," says Hartz. "Technology and productivity will continue to give Mack Tool & Engineering a bigger slice of the machined parts pie, even though the pie itself is smaller."



Paul Hartz, VP, engineering and finance, Mack Tool & Engineering



A Mack-engineered six-sided tombstone helps keep the spindles running.



An aerospace component is machined from a solid on Mack's Mazak equipment.