

High Precision, High Stakes

DELTA RESEARCH BETS BIG ON THE FUTURE OF GEAR-MAKING TECHNOLOGY

by Mike Principato



When Bob Sakuta stepped into his father's shoes at Delta Research in 1987, he'd already learned one of the most important lessons of the contract machining business: Time waits for no one.

Bob's father, Alex, started Delta as the quintessential mom-and-pop machine shop in 1952, back in the day when the world was full of promise for entrepreneurs who knew how to crank the handles on a mill or a lathe on behalf of the booming post-World War II American automobile industry. Under Sakuta's leadership, Delta rose as a powertrain and transmission prototype developer and supplier to the Big Three. By the time young Bob took over the family business, the sun was already beginning to set on the salad days of that market, especially for automotive component suppliers that didn't

have an edge in engineering know-how or manufacturing technology. Sakuta's solution? Build an edge in both.

Twenty-three years later, Delta Research supplies high-precision gears, transmissions, powertrains, shafts and assemblies for automotive and aerospace industries. Delta has completed a successful transition from a small, general job shop to a 100-employee, design/engineering/contract manufacturer producing some of the most challenging automotive and aerospace components in the world.

Making the Impossible Possible

"As machine shops go, Delta is state-of-the-art in gear manufacturing technology, particularly in ring gears, which are among the more difficult automotive

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powertrain gears to make,” says Gregory Razook, quality engineer for Continental Automotive. A few years ago, Razook was sourcing a super-precise compound pinion gear for a transmission application that had to meet the super-quiet NVH (noise, vibration, harshness) standards required of a prototype hydrogen fuel cell vehicle under development at Continental.

“We’d already been using Delta to quality-screen another manufacturer’s gears during the first-generation prototype program of this fuel cell vehicle,” explains Razook, who says when the second-generation vehicle made the drawing board, Delta was in the right place at the right time and went from back-up to primary supplier of the new gear.

“Delta can produce extremely difficult, high-precision gears and parts in very low quantities with accuracy and consistency, and to a higher finish than other suppliers. They’re unique in that they were able to design and produce that complex second-generation gear for Continental in prototype quantities,” Razook says.

Bigger, Better, Faster, Newer

One of the keys to Delta’s ability to help customers like Continental is Sakuta’s commitment to continuously reinvest in the latest equipment. Recent acquisitions include the first Kapp 500 Flex CNC gear grinder installed in the United States; a Burri wheel dresser which allows Delta to quickly run generative gear grinding for small lots; and a Mitsui Seiki HU6A-5X trunnion system machining center, a true 5-axis CNC machine with a 36" cube work envelope. All in all, Delta boasts tens of millions of dollars’ worth of machine tools to cut, grind, hob, broach, shape, super-finish, EDM and inspect complex parts, all programmed and operated by craftsmen who average 20 years of experience.

After spending five minutes with Sakuta, it’s easy to detect the kind of confident, competitive drive that compels an already successful business owner to keep reaching for another brass ring. The genial Sakuta loves his work. He demands the best tools to help his company stay competitive in the industry.

Tony Werschky, who oversees marketing and sales for Delta, recalls a piece of company lore that perfectly captures Sakuta’s business philosophy and ambition and helps explain how Delta’s manufacturing facilities resemble working showrooms of the most advanced machining technology in the world.

“As the story goes, Bob was cleaning out his desk one day a while back and came across a dog-eared “Ten Year List” that he’d handwritten back in the ’80s with his late brother, Dennis Sakuta. The sheet was a listing of all of the machinery that they believed Delta would need to succeed

over the coming decade,” Werschky says. “And although some of those machines have already been replaced with new machines, every single machine on that list had been purchased, right on schedule.”

What’s Next?

Delta gained momentum over the past few years, even as other aerospace and automotive component suppliers struggled to survive. In 2004 Sakuta acquired Tifco Gage & Gear, a well-known niche manufacturer of master gears, spline gages and other precision gaging equipment. Formerly, Tifco was based in Wixom, MI but is now based in Livonia, Michigan, and is now named Delta Gear.

“We’re interested in long-term relationships with our customers, and with Delta Gear and Delta Research working as one, we’ve created a well-rounded organization that can handle challenging gear production, complex precision machining and gearbox assemblies from start to finish,” Sakuta says.

That’s exactly what customers like Razook, from Continental Automotive, want to hear. Fuel-cell-powered vehicle development is challenging enough without wondering about sub-suppliers’ performance. “Delta’s a problem-solver for us,” Razook says. “There are lots of complex issues surrounding the development of our products. With Delta, we don’t have to worry about the quality of our gears—we know they’re the experts.” ⚙️

