

## Revved Up

**ThinGap says its new take on the venerable electric motor is both lighter and more efficient**

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It's not every day you meet someone who claims to have reinvented the electric motor -- and has a U.S. patent to back it up. Then again, when Gerald Yankie hands you an object that fits in your palm and says that's the motor, you have to look. Surprisingly light, the motor lacks the traditional armature and wound copper wire that make conventional motors heavier. The electric motors made by Santa Barbara-based ThinGap Motor Technologies have coils made with machined copper sheets. They look hollow, weigh much less than traditional motors, and generate more power.



ThinGap's motors produce two to four times more power than a traditional motor of the same weight, with 15 to 20 percent more efficiency, said Douglas Crawford, chief marketing officer. That revolutionary improvement earned the company its first patent. Getting there was a home-grown effort. In 1998, Mr. Yankie and his partner, Greg Graham, set up shop in Mr. Graham's kitchen, experimenting with a pressure cooker to heat and pattern copper sheeting as a coil.

In January 2000, they raised \$750,000 in financing from their own savings, family, friends and some local investors. "We hatched this idea that a more efficient engine was needed," Mr. Yankie recalled. "Greg had worked on many electric motors for medical tools and found there was room for improvement. "Now that money is gone, invested in research and development and intellectual property. At this point, the employee-owned company is up to seven employees, two at headquarters in Santa Barbara and five in a Ventura production facility capable of making 1,000 motors a month.

The company is now seeking \$3 million from a lead or strategic investor to support growth in hiring, growing sales and marketing, increasing production capabilities and other expansions. Mr. Crawford said there is serious interest from investors who attended the Central Coast Venture forum in Santa Barbara on June 14. The firm is talking with large global manufacturers in the U.S., Asia and Europe about licensing its production technology. ThinGap is forecasting in excess of \$30 million in revenue and royalties from the sales and licensing of the motors by end of 2004, and predicts \$100 million in revenues by 2007. "We're going to expand a production facility in the tri-county area, and we plan to grow to 100 employees in the next three years," Mr. Crawford said.

Everybody uses electric motors. They're ubiquitous. Cars have a bunch. They're in appliances, in medical devices, in all sorts of tools. Mr. Yankie said the electric motor market is \$40 billion per year. "All we want is a small piece of it," he said. "The way electric motors were made in the last 60 years is not much different than today. We've reinvented the electric motor."

ThinGap motors have fewer parts than current motor designs and are manufactured with less labor input, according to the company. Mr. Yankie said the motors will be cost-competitive with traditional models. Now ThinGap is talking with companies that are exploring how its product fits their needs. The company already produces three styles of motors, which produce anywhere from nearly zero horsepower to four horsepower.

You can bet the company is protecting its designs. "We intend to be like a pit bull on a pork chop when it comes to defending our intellectual property rights," Mr. Crawford said.

The company's name is derived from an engineering term. Motors have a magnet and a housing. The copper coil is placed between them. ThinGap places its copper coil into that space to minimize the gap, resulting in peak efficiency. "Better efficiency means that a motor, running on a battery, could last twice as long as current products," Mr. Yankie said.

The company's growth plan has room for an IPO several years down the road. However, the company expects to pursue an earlier exit by selling to a motor manufacturer prior to its fifth year. Prior to forming ThinGap, Mr. Yankie was with Miravant Medical Technologies as vice president of operations. Before joining Miravant, Mr. Yankie was president of Techcon Systems, a manufacturer and distributor of specialty fluid dispensing equipment to the electronics, medical and aerospace industries.

Cofounder and chief technology officer Mr. Graham formerly was with Mr. Yankie at Miravant. There, he was the senior mechanical design engineer responsible for medical device engineering and manufacturing process development. He has experience in electro-mechanical design engineering, manufacturing and machine tool operations.

Mr. Crawford's startup planning, business development, financing, and managing successes are extensive. Prior to joining ThinGap, he was cofounder and chief marketing officer for Foodchains retail distribution and logistics business. Previously he was CEO of two mapping companies, Vicinity Corporation (pre-IPO) and Magellan Geographix; and vice president of business development and global sales and marketing for two computer software companies, Alias Wavefront and GTX, and a startup computer hardware company