pump water or generate electricity, are also expensive, and using them usually requires removing the engine from a vehicle. What's more, they do not measure the time it will take a real-world engine to accelerate a particular car or motorcycle from zero to 60 mph, or even how fast the engine can rev itself from idle to redline—the sorts of things hot-rodders and racers care about.

As it happened, Dobeck's new bike shop opened just in time for the arrival of factory Japanese superbikes equipped with constant velocity (CV) carbs, which were new to motorcycling. These carbs sensed load to provide excellent performance combined with improved economy and emissions, but they could not be tuned and jetted using traditional methods. Many people recommended replacing them, a $600 solution.

Dobeck, who understood hot-rodding CV carbs from his days of wrenching on English cars—MG and Triumphs had 'em—immediately set to work modifying the new motorcycle carbs to run right with aftermarket exhaust pipes and air filters. He was also using his home-built inertial dyno to tune the carbs for improved acceleration and responsiveness. Before long, bikers were traveling from all over the upper Midwest for Dobeck's dyno-jetting service. "I started to realize I was doing something that no one else was doing," says Dobeck. "Eventually, I built a few jet 'kits' to see what we could do with them."

The Big Time

In 1983, Dobeck and his brother drove west to K&N in California in a red pickup full of tools and CV carb parts. K&N was the Big Time, with performance air-filter kits and supporting products for pretty much everything in automotive and motorcycle performance.

Dobeck spent a month proving his skills on bike after bike at K&N. And suddenly, one day, K&N ordered 3,000 jet kits. "I didn't even know if we could mass-produce something; I'd really only been modifying parts of individual bikes," says Dobeck. "Of course, we didn't tell them that. I just went home and did it because I had to." Dobeck named his company Dynojet, and it wasn't long before it was supplying jet kits to everyone and growing 400 percent a year.

By and by, a new product arrived to compete with Dynojet's jet kits, easy to install and designed to fix fuel problems. There were full-page ads in the bike magazines. "They were selling them," says Dobeck. "The advertising was working. They were taking away sales. But the product didn't work. Not at all." Dobeck shakes his head. "I was young, and I couldn't understand how any company in their right mind could do such an injustice to people. It killed me. I couldn't frickin' sleep. I thought, 'How can I stop this?'"

Dobeck called engine dyno suppliers Superflow, Darcy and Servequip to see if he could interest them in helping to develop an affordable inertial chassis dyno that could live in the shops of Dynojet dealers to show the world what worked and exactly how well—something similar in concept to his dad's old home-built rolling road. "Every one of them laughed at me," Dobeck remembers.

Dynojet would eventually eviscerate all three companies.

The Zen of Inertia

One of the biggest headaches of Dynojet's go-it-alone chassis dyno project was figuring out how to assign meaningful power numbers in the face of unknown inertia from the moving parts of hundreds or thousands of engine, drivetrain and tire combinations.

Wrestling to fully understand inertia and powertrain losses, Dobeck and his team quickly realized that the standard physics formula of weight, time and distance for converting acceleration into horsepower simply didn't work right. Even after eliminating all drivetrain losses and attempting to account for all heat loss in the vehicle and dyno systems, the derived number was always lower than accepted numbers.

The Dynojet team poured on resources and burned up time and money investigating the Mystery of the Missing Power. But no matter what it did, the mathematics never added up.

Dynojet's final number fudge—which would eventually be applied to every vehicle strapped to a Dynojet chassis dyno—was arbitrarily based on a number from the most powerful road-going motorcycle of the time, a 1985 1,200-cc Yamaha VMax. The VMax had 145 advertised factory horsepower, which was far above the raw 90 horsepower number spit out by the formula. Meanwhile, existing aftermarket torque-cell engine dynamometers delivered numbers that clustered around 120.

Below left: Sun infrared exhaust analyzer forms the basis for the first home-built motorcycle dyno inside Dobeck's Wisconsin shop, circa 1980. Below right: Dobeck demonstrating the Dynojet 100 to motorcycle enthusiasts in Macao, China—he's traveled the world promoting his products and the notion of honest tuning.