

Makin' Hot-Rodding Honest

It wasn't long ago that dynamometer use was the sole preserve of car manufacturers and big-time speed shops. As a result, engine tuning was largely a black art. Mark Dobeck's Dynojet changed all that.

by JEFF HARTMAN

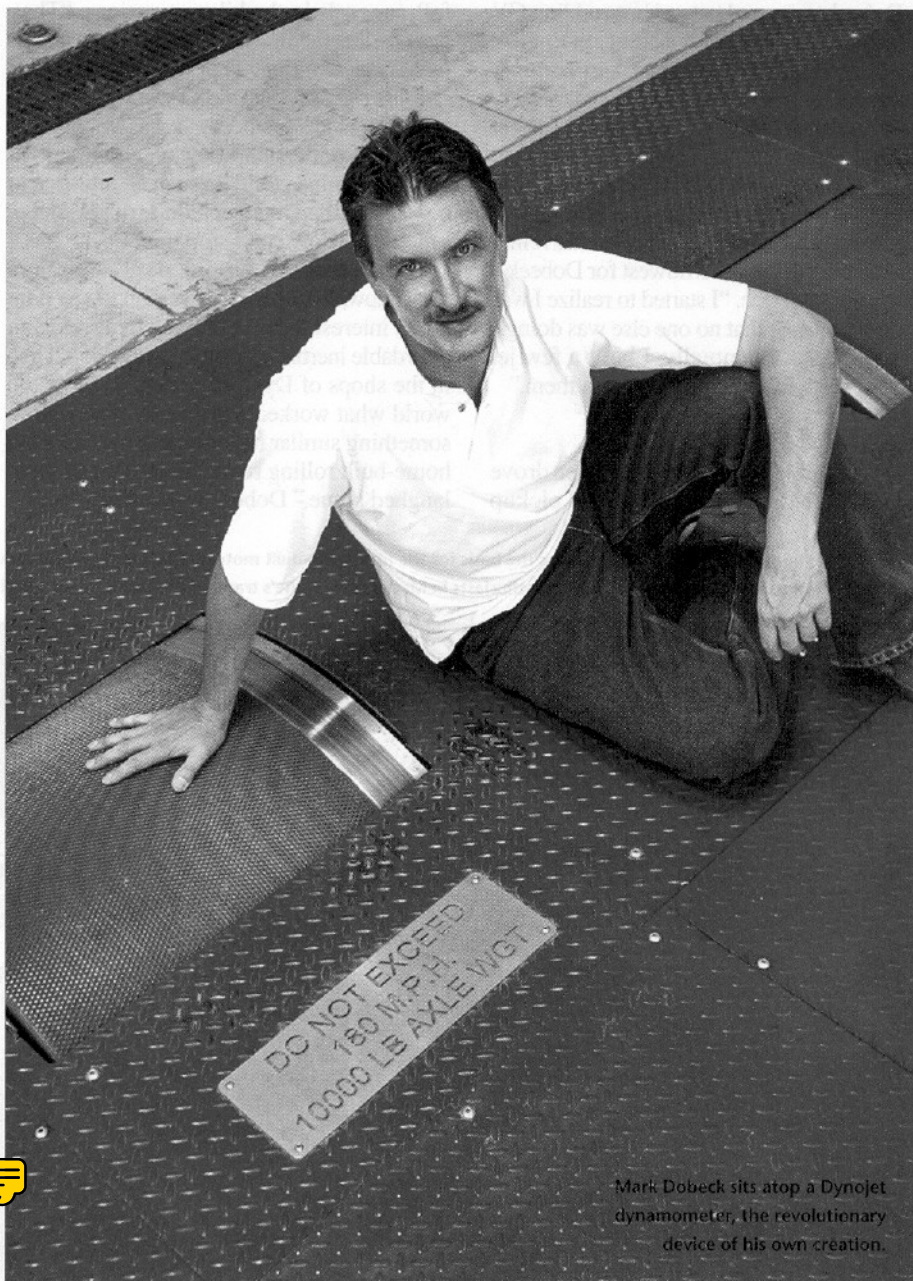
Mark Dobeck was working in a Portland, Oregon garage in the late '70s, tuning English sports cars, when, one day, an irritated customer returned with an inscrutable engine stumble that happened only while driving. The 19-year-old Dobeck decided to stick the probe of the shop's Sun infrared exhaust analyzer in the tailpipe of the car and dump the machine in the passenger seat so he could tune the air/fuel ratio on the go—something that just wasn't done. He not only fixed the problem, he made the engine run better.

Dobeck, who has been called both a genius and a wack job, soon became a whiz at using exhaust-gas carbon monoxide readings to optimize power under real-world conditions.

The trouble came later, when he opened a motorcycle shop in Wisconsin in 1980. Cars were one thing, but there was no way to haul around a gas analyzer as big as a decent-sized TV set on a motorcycle. Dobeck talked his inventor/fabricator father into building a stationary rolling road that could support the rear wheel of a motorcycle on a moving drum so he could continue tuning while "driving" with the big infrared analyzer.

Dad's rolling road was designed with a hydraulic system that could be adjusted to work a bike engine harder at a given speed, something like the resistance controls on a Stairmaster machine at a gym. But because Dobeck and his dad were mechanics rather than mathematicians, they made the rolling drum heavy, and the home-built device had a surprising amount of inertia. It was accidentally pretty good at simulating a motorcycle's ability to accelerate.

Dobeck was thus able to measure performance improvements that would be invisible on torque-cell-type dynos limited to displaying a snapshot of the instantaneous power an engine could exert against the dyno at one particular speed. Torque-cell dynos, which load an engine by forcing it to



Mark Dobeck sits atop a Dynojet dynamometer, the revolutionary device of his own creation.