

BONUS! 52-Page Towing Guide Inside



Powerboat

The World's Leading Performance Boating Magazine

RARE BREED

CIGARETTE TAKES CUSTOM V-BOTTOM TO A NEW LEVEL

CIGARETTE RACING 42X ▶

NORDIC, CHECKMATE
OFFERING MORE
FOR YOUR MONEY



EXCLUSIVE:
HOMELAND
SECURITY'S
GO-FAST ARSENAL



THE GUNK

Ethanol-Blended Fuel Problems & Fixes

DON'T GET STRANDED

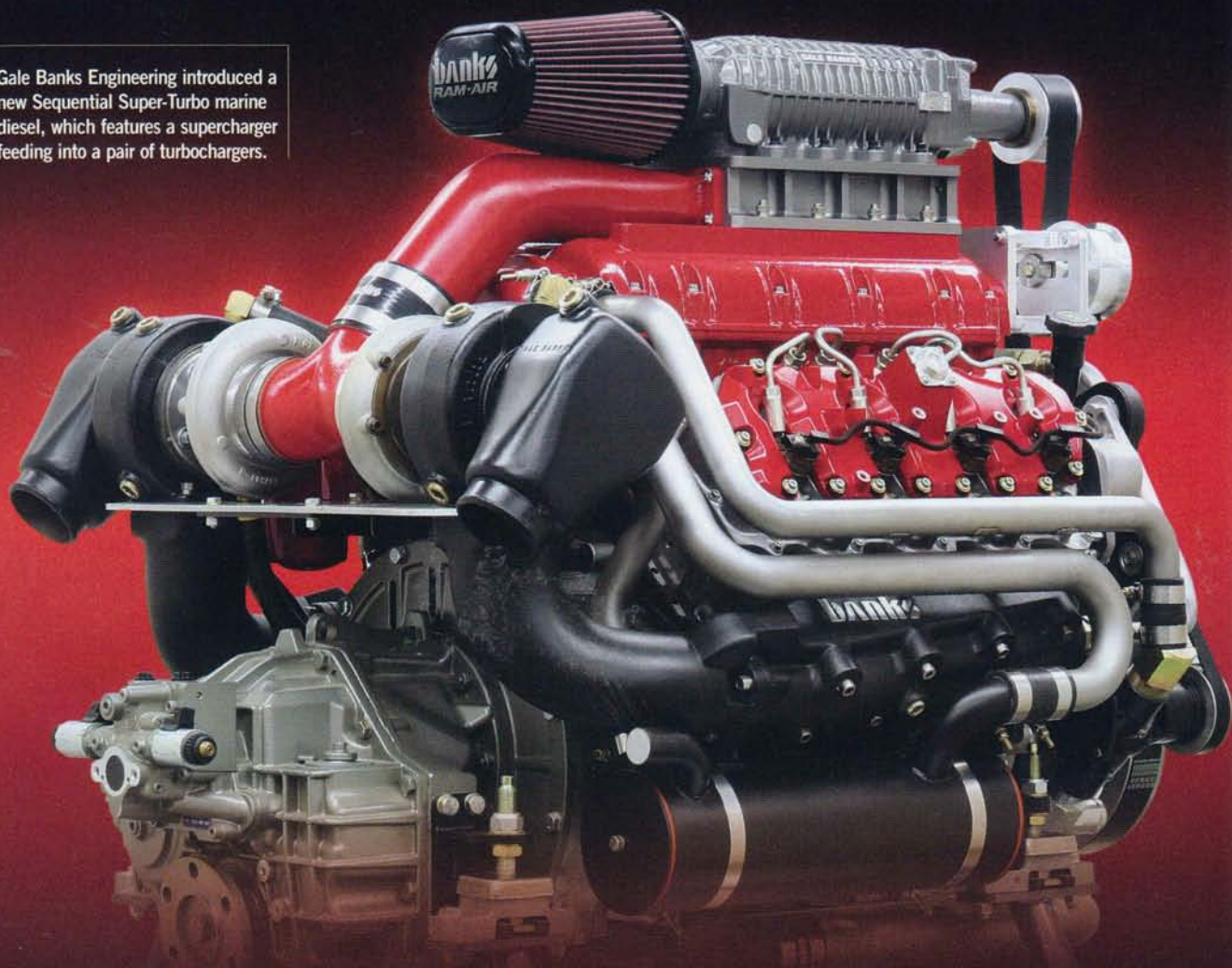
Inspect Your Water Pump

April 2010 | www.powerboatmag.com

\$5.99 US/CAN



Gale Banks Engineering introduced a new Sequential Super-Turbo marine diesel, which features a supercharger feeding into a pair of turbochargers.



DIESEL GONE WILD

It's turbocharged. It's supercharged. It's the Banks Sequential Super-Turbo diesel, and it could change the way you think about diesel power. By Matt Trulio

Any number of attempts to bring diesel power to a mainstream high-performance audience have been made over the years. But the truth is they've been met with only moderate success (at best). That's because the general performance aspects of diesel engines—gobs of low-end torque but relatively slow power delivery—simply don't match up with the average duty cycles of go-fast boat engines, much less the performance preferences of their drivers.

Without question, diesel engines are durable, reliable and

require less ongoing maintenance than their gasoline counterparts, but for the performance-minded boat owner that simply isn't enough. Go-fast boat owners demand crisp acceleration and the kind of top speed that translates to high engine-operating rpm, and the average diesel engine just doesn't offer that.

But the new-for-2010 Banks Sequential Super-Turbo Marine Diesel, which is based off a General Motors Duramax 6600 diesel engine, is far from "average." The engine employs both an Eaton TVS Supercharger with an intercooler and twin

turbochargers to create a condensed charge from both sides, if you will. That combination translates to more than 800 horsepower and 900 foot-pounds of torque at 4,500 rpm.

"This is a super-turbo," says Gale Banks of Gale Banks Engineering in Azusa, Calif. "These engines make so much torque down low that you can carry a big propeller for top speed, and still get on plane without it being lazy. We've got a supercharger feeding two turbochargers. The intercooler is inside the manifold. You don't even see it."

Banks developed the super-turbo diesel concept through his contract work for the United States government, more specifically the Federal Bureau of Investigation. The first Banks Sequential Super-Turbo diesel engines will be tested in an FBI boat that will be used in anti-terrorism activities and rescue work.

"They are interested in accelerating quickly, getting in and then getting the heck out of Dodge," Banks says.

As noted, the engine is equipped with an intercooler for the supercharger. Water-jacketing maintains reasonable operating temperatures for the turbochargers, as well as the exhaust manifolds. Though the engine is based on a GM platform, most of its internal parts were designed and developed by Banks. Proprietary products in the engine include the forged gallery pistons, the camshaft and CNC ported high-flow/swirl heads, the high-capacity wet-sump oil system, the high-flow piston cooling nozzles and more.

Managing and monitoring the Banks Sequential Super-Turbo diesel's functions is a Banks OttoMind Electronic Diesel Controller.

"Depending on the application, we can control this engine to run a peak of anywhere from 3,800 rpm to 5,800 rpm," says Banks, who started the company in 1958. "In a heavy cruiser or something like that, we might set the engine at 3,800 rpm. In a high-performance sport boat, we might go with 5,800. It just depends on the intended use, and we'll also adjust the way we build them internally for that use."

In standard dress, the Banks Sequential Super-Turbo diesel weighs approximately 1,100 pounds. That makes it slightly lighter than a Cummins diesel, and comparable to a marinated GM big-block.

"This kind of engine is what's been missing, honestly," Banks says. "There

have been marine diesel engines for years, and normally they're known for not being responsive. The darn things are just lazy—it's inherent in their design. Here we've got something that's a medium (duty) truck engine, but it's got automotive response. It breathes much better and responds much quicker."

Though dyno testing of the Banks Sequential Super-Turbo diesel has been ongoing for the past couple of years, the engine was scheduled for on-water testing as *Powerboat* went to press. Banks says he expects to learn even more from

the on-water evaluations. Pricing of the engine was not available at press time.

"Evolving the engine is going to take a few more years," he says. "We're evolving what's inside the engine, too. You've got to make a lot of the parts. It's like hot-rodding an engine that nobody's ever hot-rodded before" **P**

— Matt Trullio is a freelance writer for *Powerboat*.

Contact Information

Gale Banks Engineering, 546 Duggan Ave., Azusa, CA 91702, 800-601-8072, www.bankspower.com.

MARINE TECHNOLOGY
Shaping the Future of Offshore

36 RACE pleasure

MERCURY
Racing

Race Series 39•42•44•48•55 • Pleasure Series 36•39•40•42•44•48•55

See Us At The Miami Boat Show
February 12-16, 2010

www.marinetechologyinc.com
636.639.1166