LOOKING FOR A NEW JOB? START HERE PG. 152

# DIESEL POWER

THE VOICE OF THE TURBODIESEL ENTHUSIAST

## THE PERFECT DIESEL

OFF-ROAD • SLED PULLING
WORK TRUCK • DRAG RACING
DYNO KING • TOWING
FUEL ECONOMY


MARCH 2009 VOLUME 5, NO. 3

INSIDE THE WORLD'S QUICKEST 7.3L POWER STROKE

MIDNIGHT DYNO TEST IN TEXAS

WWW.DIESELPOWERMAG.COM

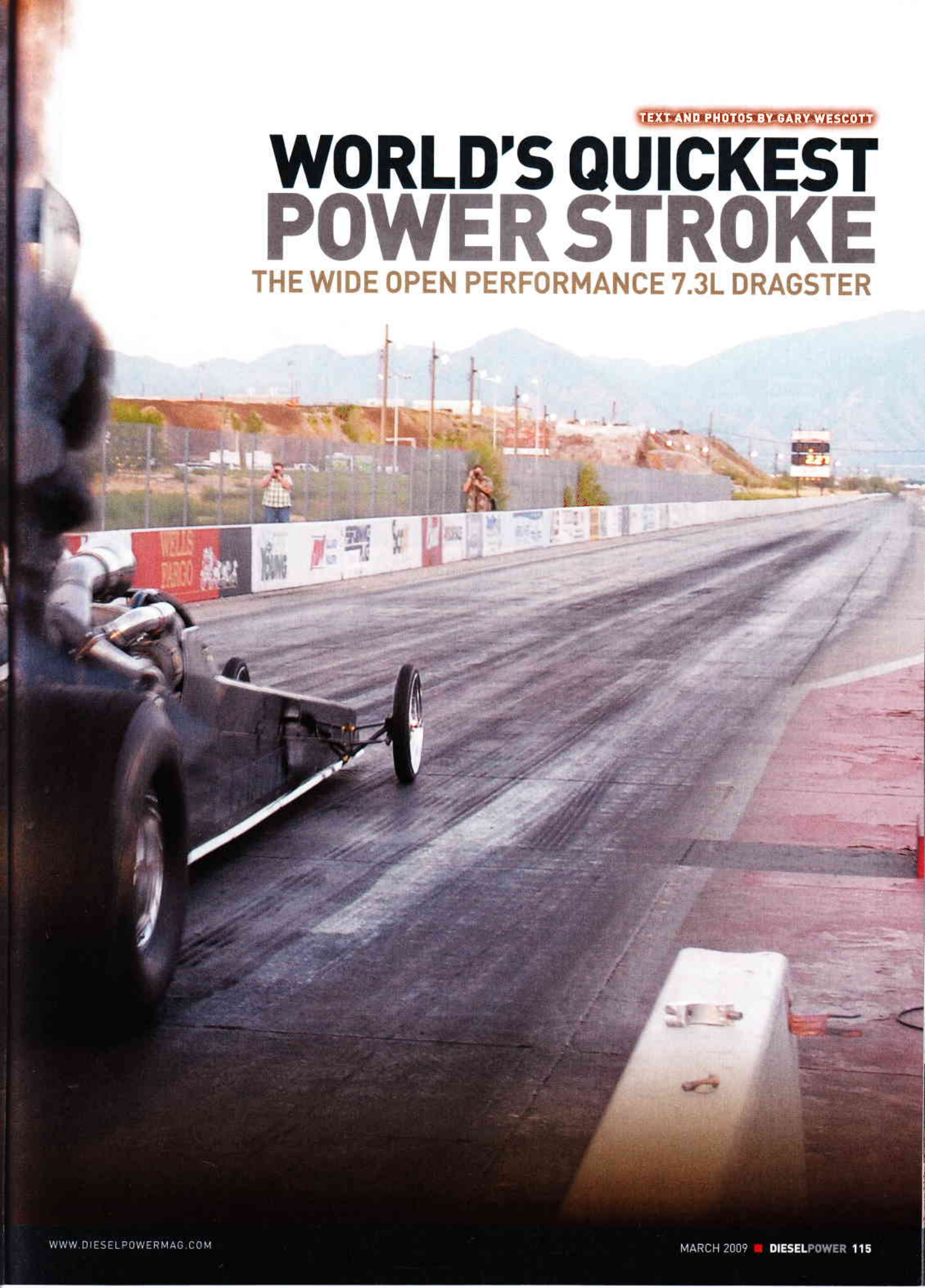
A SOURCE INTERLINK MEDIA PUBLICATION


AirMed
Harley-Davidson
of Salt Lake City
MOTORSPORTS

TEXT AND PHOTOS BY GARY WESCOTT

# WORLD'S QUICKEST POWER STROKE

## THE WIDE OPEN PERFORMANCE 7.3L DRAGSTER



# WORLD'S QUICKEST POWER STROKE

Over the last three years, the popularity of diesel drag racing has skyrocketed. The new muscle cars are ¾-ton pickups, and Cummins, Duramax, and Power Stroke diesels can be found on dragstrips across the country. But as Zane Koch, owner of Wide Open Performance in Sandy, Utah, will tell you, "There is only so fast you can make a 6,500-pound truck go."

Zane should know, he owns the world's quickest 7.3L-powered pickup. His best quarter-mile pass in the street-legal four-wheel-drive F-350 is 10.83 seconds at 124 mph. While that would be quick enough for most of us, Zane's different. He's one of those guys who always needs to go faster, so instead of pushing his race truck even further, he decided to build a proper race car.


Pius Eberle engineered the turbo system for the 7.3L dragster. Zane wasn't at liberty to discuss turbo specs with us but did confirm the small, high-pressure turbos have 2.6-inch-diameter inducers, and the big, low-pressure turbos use 3-inch-diameter inducers. He said the quad-turbo system was chosen over two big turbos in order to get the Power Stroke to spool up faster.

## WIDE OPEN 7.3L

Beginning with a Top Fuel dragster chassis, reworked and updated by Chip Nelson Enterprises, Zane's company built a 7.3L Power Stroke engine into a screaming


Off the line, Zane Koch's 7.3L-powered dragster is a totally different animal than his 10-second 7.3L Ford F-350. Surprisingly, Zane reports it's easier to hear the 7.3L in his pickup truck.

# WORLD'S QUICKEST POWER STROKE

banshee. All that's really left of the original 7.3L are the cylinder heads, the crank, and the block. The engine was fitted with Mahle pistons mounted on Cunningham connecting rods, and the water jackets were filled with cement to make the block more rigid.

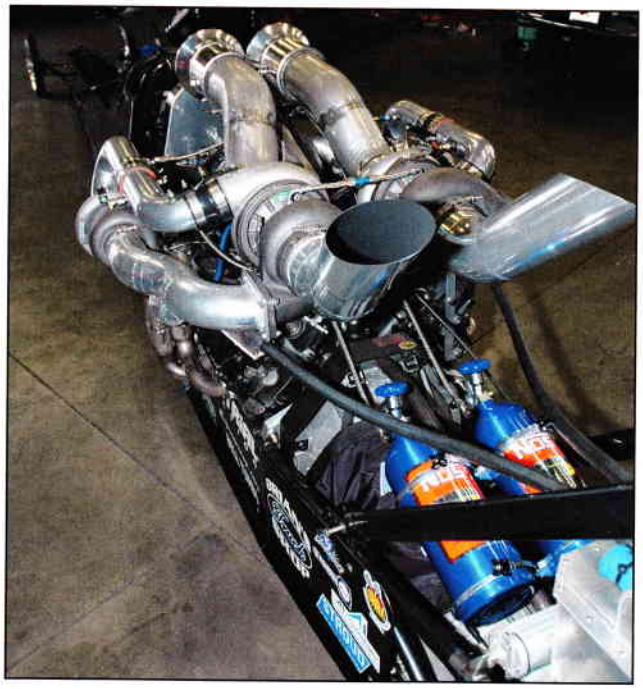
Of course the first thing you notice about the dragster's 7.3L engine are the four enormous Bell Turbos. Custom headers were fabricated at Zane's shop and Pius Eberle, of Bell Turbo, engineered two sets of compound turbos to feed the mighty 7.3L. Pius decided that two turbos wouldn't allow the dragster to build boost quick enough. The four-turbo compound system works by using two large turbos to compress the intake air before feeding it to the two small turbos, which then boost the intake pressure to around 80 psi at the intake manifold. And that's just for starters—the turbo system was designed for up to 130 psi.

Dual Terminator high-pressure oil pumps drive eight hydraulically actuated electronically controlled unit injectors (HEUI) that were modified by Industrial Injection. Wide Open Performance designed a custom camshaft to increase the engine's power band, and a laptop-programmable NOS Launcher progressive nitrous controller softens the engine's 1,000 hp and 1,800 lb-ft hit to the tires.


The 7.3L Power Stroke's quadruple-turbo system from Bell Turbo sucks in air over Zane's helmet through twin Scheid Diesel air shutoffs.

## TORQUE-PROOF DRIVETRAIN

All that power is fed into a Brian's Truck Shop (BTS) 4R100 four-speed transmission and a Precision Converter Industries torque converter. A custom BTS tailshaft couples the 4R100 transmission to a Strange Engineering 9 ½-inch diameter ring gear top-loader rearend, which runs 2.90 axle gears. For comparison, a gas dragster like this would typically run 4.56 axle gears.



Nitrous oxide is injected with a NOS Launcher progressive controller in four locations for more power and as a form of chemical intercooling. Two stages of nitrous are fed into the 7.3L's intake manifold, and the other two stages are injected into the air stream between the low- and high-pressure turbos.


The car has only made nine test passes in its current configuration, so we don't have any confirmed quarter-mile times to share with you yet. Zane is working with Brian Thompson and Precision Converter Industries to develop a lightweight lockup converter for the dragster's BTS 4R100 transmission before he returns to the track this spring.

# WORLD'S QUICKEST POWER STROKE

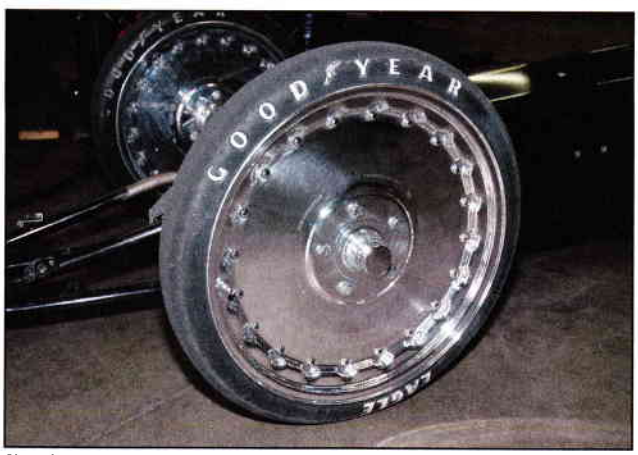
The transmission is automatically shifted through a computerized controller by Powertrain Control Solutions (PCS). The race car uses a small battery and alternator to power the computers and injectors, but starting the engine is done with a remote 12-volt power source.

The standard Top Fuel safety equipment was carried over to the diesel dragster: seatbelts, parachutes, and an engine diaper and coolant catch-can to keep parts and oil from a blown engine off the track and tires. When the Christmas Tree light turns green, Zane has two jobs—the steering wheel and the throttle. Seconds later, at speeds approaching 200 mph, he has a hand brake and a parachute deployment lever.

## HOW QUICK IS IT?

Though Zane admits it may be a lot to ask of a 7.3L Power Stroke, he hopes the car will run the quarter-mile in 7.5 or even 6.9 seconds, with a top speed of 200 mph. Will that be quick enough? We'll have to see. After all, Scheid Diesel already has a 200mph Cummins-powered dragster, and Gale Banks Engineering just debuted its Duramax-powered dragster that's gunning to take the record. In fact, rumor has it there may be six to eight diesel dragsters racing in 2009, all competing to be the quickest and fastest. Of course, none of the other dragsters will have a quad-turbo 7.3L Power Stroke! DP

Dragsters like this are often called rails because they are so long and thin. By placing the front wheels 14 feet in front of the driver, the car can transfer weight better and becomes much more stable at high speeds.




Since dragsters usually only go in a straight line, extremely thin, low-rolling resistance tires are used.

The dragster uses a Strange Engineering top-loader axle fitted with a 9 ½-inch ring gear and spool for optimum traction and strength.