IT'S BACK!

THE LONG-AWAITED 5.0 V-8 RETURNS

Text by Mary Jean Wesche
Photos by Mary Jean Wesche and courtesy of Ford Motor Company

One of the worst-kept secrets in the Mustang hobby was the return of the 5.0L V-8 for the 2011 Mustang GT. However, it's doubtful most knew about the advanced technology that would go into this motor.

The 2011 GT will deliver 412 horsepower and is projected to give the driver 25mpg in highway driving.

The updated 5.0 is a four-valve Twin Independent Variable Camshaft Timing (further to be known as Ti-VCT) V-8 engine.

With the original 5.0L V-8 Coyote Indy racing engine as inspiration, the development team of engineers continued to hone the performance and fuel rating of the long awaited powertrain.

Discussion on this engine began back in 2000. At that time the team began development with the objective to deliver in excess of 400 horsepower without compromised reliability, fuel economy, noise, or vibration. Test engines and benchmarks included 5.0L blocks, utilizing varying bore and stroke measurements, various manifold configurations, differing compression ratios, and even a deep-sump oil pan. They also evaluated Ford Racing's 5.0L "Cammer" crate engine. Extensive computer-aided engineering and engine experimentation and evaluation combined with machine work resulted in bringing this engine to life.

Ford states, "Enhanced Ti-VCT is a critical element in the engine's ability to deliver the improved drivability, tractability, and fuel economy over the 2010 Mustang GT. For a high-performance application, the design team specified cam-torque-actuated variable camshaft timing. Using existing cam torque energy, with assistance from pressurized oil, meant minimal upgrades to the oil pump were necessary. Increased volumetric and thermal efficiency gives faster Ti-VCT response at every engine speed.

"During development, the camshaft lift profile and port optimization started with higher-lift units from Ford Racing aftermarket, which were modified for compatibility with various 4V heads. Extensive testing was performed to fine-tune the camshaft and port flow for performance and fuel efficiency in conjunction with the camshaft timing.

"The resulting all-new aluminum 4V-per-cylinder heads feature a compact roller finger follower valvetrain layout leaving more room for high-flow ports for free-breathing performance. Head structure was designed to support higher cylinder head pressures and cross-flow cooling for sustained high-RPM use. The head bolt size was increased from 11 to 12 mm to contain the higher combustion pressures.

"The aluminum block was developed for optimized windage and oil drainback under lateral conditions and high RPM, such as a track-day outing for an en-

thusiastic owner/driver. Increased main bearing bulkhead widths and nodular iron cross-bolted main bearing caps with upsized bolts were also employed to accommodate the significant performance increase.

"An additional element is the increased capacity and baffling of the deep-sump stamped steel oil pan to enable sustained high-rpm use and offer 10,000-mile oil change intervals. Piston-cooling jets were incorporated for performance-minded customers and for faster oil warm-up on cold start.

"Specially designed tubular exhaust headers were developed to maximize exhaust pulse separation and improve flow. A team analyst actually fabricated the tubular headers in his home workshop, bringing the CAE design to life."

The exterior of the 5.0 was designed by Rob Gellardi, the designer of the interior of the 2010 Mustang. From every aspect, it's easy to describe this engine as "beautiful."

Ford's claim of 412hp and 390 lb-ft of torque on the 2011 is a significant increase from the output of the 2010 model. The weight on this powertrain is a reduction of 20% over Ford's prior 5.0L.

The 2011 GT is available with a six-speed automatic, which promises to deliver an estimated 25mpg highway, and 17 mpg city. This is also an increase from the 2010 model. The six-speed manual is projected to deliver one less mpg highway and city. Although this is the same as the 2010 model, the 2011 GT promises to deliver significantly more horsepower and performance feel.

Ford promises that the Electronic Power Assist Steering (EPAS) contributes dramatically to the driving dynamics of the 2011 Mustang GT giving it a quicker on-center steering response, increased effort at highway speeds, and a reduction in effort required in low-speed parking maneuvers.

The fender and engine cover wear the 5.0 badge we've long awaited. The speedometer increases to 160mph, and the tach redlines at 7,000 rpm. Upgrade options will include a Brembo brake package, Premium Wheels, Navigation System, Dual Power Seats, and a glass roof on the Coupe. This information is based on the GT Premium Coupe.

The Base MSRP for a Premium Coupe with Destination Charge is $32,845. Axle ratio is 3.31 w/limited slip standard, 3.55 or 3.73 is an additional $395. Additional, individual options include:

6-Speed Automatic w/overdrive	$995
Remote Start	$345
HID Headlamps	$525
Shaker 1000	$1,295
Glass Roof	$1,195
Hood & Side Stripes	$395
Over-the-Top Racing Stripes	$475
Premium Machined Cast Aluminum Wheels	$995
Polished Aluminum Wheels	$495
Premium Painted Luster Nickel Aluminum Wheels	$995

There are several Accessory Packages also available.

Exterior colors for Job 1 are:

Grabber Blue, Kona Blue Metallic, Ebony, Grey, Candy Red Metallic, Race Red, Ingot Silver Metallic, and Performance White. The Yellow Blaze Tri Coat on our center spread will be available on Job 2.

One nearly overlooked model that was on display at the Detroit Auto Show was the new 2011 GT/CS. Just sitting quietly next to the on-its-side displayed GT, a beautiful red GT/CS was almost invisible. The price increases $1,995

(MSRP) from the Base for this beauty. It includes GT/CS badging, unique lower fascia, premium floor mats with a logo, Premium unique chrome billet grille with color-keyed surround, unique interior trim, unique leather-surfaced seat trim with carbon inserts and contrast stitching, side scoops, pedestal spoiler, unique decklid and body-side stripes, and 19" Tires and Argent Painted Machined Aluminum wheels.

Dealers are taking orders now, with production scheduled for March 22, 2010. You should expect to see the 2011 GT at your local dealer by late April.

The race is on to see who is the first to take delivery. **MT**

Mustang Small-Block V-8 Evolution

World-Class Performance

The 2011 Mustang GT 5.0-liter will set a new standard for high-volume production engines. Delivering 412 hp and 390 ft.-lb. of torque on premium fuel, this new powerhouse provides in excess of 80 hp per liter. The objective was offering a Mustang GT engine, at the historically significant 5.0-liter displacement with more than 400 hp, but without compromises in drivability, fuel economy and noise, vibration and harshness (NVH) control.

Ti-VCT with Camshaft Torque Actuation

Twin Independent Variable Camshaft Timing (Ti-VCT) is a critical element in helping the Mustang GT 5.0-liter deliver an impressive combination of power and fuel efficiency. Ti-VCT rotates the camshafts to advance or retard the cam timing, based on several measures, including throttle opening. In addition to improved performance and fuel efficiency, Ti-VCT reduces part-throttle emissions.

Shelby Cobra

The original AC Cobra prototype was powered by a 260-cubic inch displacement (cid) version of Ford's small-block V-8. Production versions of the Shelby Cobra were powered by the 289-cid engine, scoring an impressive record of road and endurance racing victories.

Sunbeam Tiger

A Ford small-block 260-cid V-8 was offered in this British sports car. Shoehorning the V-8 into the Tiger's narrow engine bay required extensive modification to the vehicle, but resulted in surprising performance with docile, around-town manners.

2011

2005

Ford Racing offers a 5.0-liter V-8 "Cammer" crate motor for motorsports applications.

1996-2010

The Mustang GT offers an all-new modular 4.6-liter V-8 with 2V, 3V and 4V per cylinder.

1979-1995

The 5.0-liter V-8 becomes a showroom, racetrack and drag strip phenomenon. The lightweight Mustang LX even becomes the high-speed pursuit police car of choice.

1974-1977

The Mustang II offers a 302-cid V-8 as the top engine choice for performance-minded enthusiasts during this fuel-starved era.

1969-1970

The Boss 302 features 290 hp and a mandatory four-speed manual transmission. *Car and Driver* magazine puts a Boss 302 through the quarter mile in 14.57 seconds.

1968

The small-block V-8 grows to a displacement of 302 cubic inches. Ford engineers prepare a strengthened block, with four-bolt main bearings and "tunnel port" heads for high-performance duty.

1963-1965

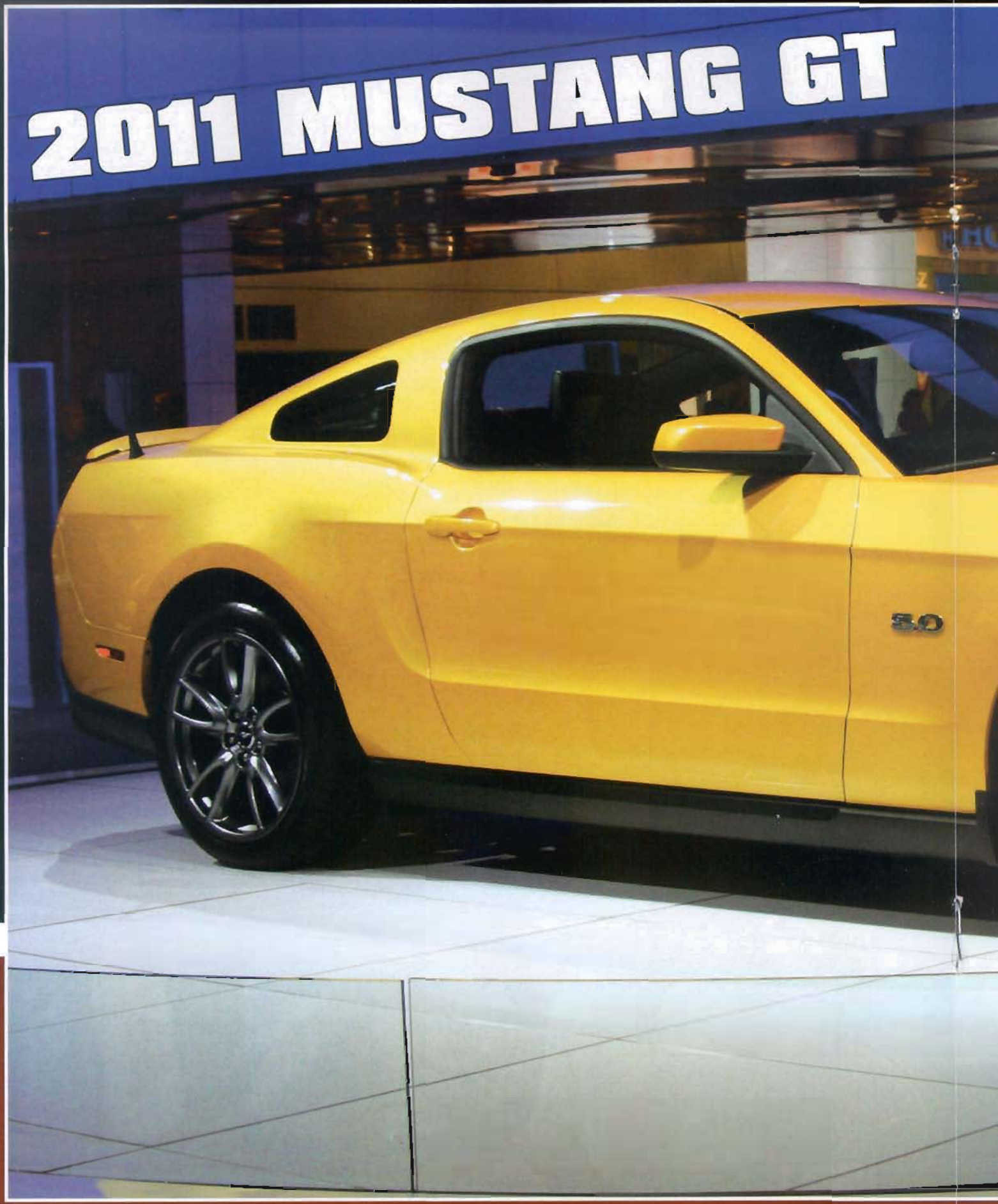
The small-block Ford engine quickly evolves into 260 and 289 displacements, powering the 1963 Falcon Sprint and the original Mustang, launched on April 17, 1964.

1962

The midsize Ford Fairlane is introduced, with an all-new "thin-wall casting" 221-cid V-8. The automotive enthusiast community takes note, due to the engine's light weight, free-revving valvetrain and compact overall dimensions.

Courtesy of Ford Motor Company

2011 MUSTANG GT

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