

2006 Fusion Special Features

"Ford Fusion brings real personality and attitude to the mid-size sedan."

– Steve Lyons, Group Vice President, North America Marketing Sales and Service

FORD FUSION FEATURE STORIES

- Bringing the Ford 427 concept to life
- Partly square, partly round – it's a "squircle"
- How clean is a Fusion PZEV?
- The PZEV 20-second solution
- All-new car, all-new key

BRINGING THE FORD 427 CONCEPT TO LIFE

Viewing the Fusion for the first time, drivers should be forgiven for thinking that something seems familiar. In 2003, Ford signaled a renaissance in the classic American sedan, showing the Ford 427 concept car at auto shows across North America. Powered by a 590-horsepower, 427-cubic-inch displacement engine, the Ford 427 concept hearkened back to the muscular Ford sedans of the Sixties.

The front fascia is vertical and linear with three powerful, thick, horizontal grille bars inspired by the mid-1960's Ford Galaxie. The front headlamps and rear taillamps are vertical, drawing from the same era but adding modern, rounded-square cues. The interior design is tightly wrapped in sophisticated black handcrafted leather with contrasting oatmeal-colored stitching.

"The 427 concept is a car that you take home, park in your driveway, sit back and let your neighbor eat his heart out," says Mays. "The 427 concept is unmistakably Ford and 100 percent American. It demonstrates that a sedan from a U.S. manufacturer can once again be exciting, sexy, sophisticated and powerful."

With rave reviews from the public, industry and dealers, Mays and the design team knew the Ford 427 concept's styling had to make it to production, and the Fusion provided the perfect opportunity.

PARTLY SQUARE, PARTLY ROUND – IT'S A "SQUIRCLE"

The Ford 427 concept was a hit with auto show crowds. It's hip, it's unique – and car enthusiasts of all persuasions agreed. Proving that it's hip to be squiracle.

The Ford Fusion's highly detailed headlamps are inspired by the limitless design bounds of the Ford 427 concept headlamps. Designers used a theme of squares with rounded-off, circular corners, a combination of a square and a circle that they dubbed "squircles."

The headlamp shape itself is a squiracle with its top outer corner pinched and stretched toward the A-pillar, giving a sweeping aero motion to the front appearance.

The angular shape results in a tough-looking, "angry eyebrow" appearance.

Behind the clear headlamp lenses are three-dimensional elements that add detail and interest to the units. The low beam is the dominant element with its lamp housed in a large squiracle bezel that

follows the pinched shape of the housing. The low beam is inset well behind the outer lens. The bright, thick edges of its bezels are chamfered surfaces that are employed repeatedly in the design.

The high-beam projector lamps are housed separately in long squircle barrels that intersect the corners of the low beams' squircle bezel. The amber turn indicators similarly repeat the squircle theme.

At the rear, the right-triangular taillamps help exaggerate the lift of the rear deck with straight-upward legs at the decklid edges. The steep downward legs wrap around the quarter panel and help communicate the rear-to-front rake of the design. The taillamps are framed in a chrome bezel shielded by a wraparound clear lens. The holistic theme is brought to the taillamps through the use of squircle barrels housing the backup lamps. These elements give the impression of barrels that run from the high-beam headlamps through the car to connect with the backup lamps – a subtle element that furthers the design's attention to fine detail.

HOW CLEAN IS A FUSION PZEV?

To be certified as a PZEV, Fusion had to meet three criteria:

- The Super Ultra-Low Emission Vehicle standard (SULEV)
- Engineers had to virtually eliminate fuel system evaporative emissions
- The powertrain limited warranty had to ensure that these stringent criteria will be met for an extended lifetime of 15 years or 150,000 miles

Compared with the Tier I emissions standard, the SULEV standard requires 97 percent fewer hydrocarbon emissions, 76 percent less carbon monoxide and 97 percent less nitrogen oxide. In practical terms, a SULEV – such as the Fusion PZEV – emits only one pound of smog-forming pollution during 15,000 miles of driving. That's good enough to earn a perfect "10" on the U.S. Environmental Protection Agency's "Green Vehicle Guide."

By comparison, each vehicle certified to the Tier I standard emits about 30.5 pounds over the same distance.

Outside of California, the Fusion PZEV has slightly higher tailpipe emissions – even though the car's electronics, powertrain and emissions equipment are identical – because other states have not adopted California's clean-fuels program.

Fusion's V-6 engine will be the cleanest Duratec 30 ever produced. The Duratec 30 V-6 will meet federal LEV II standards and ULEV II tailpipe emissions in California.

Outside California, the Duratec 30 and the Duratec 23 – with manual or automatic transmission – will qualify for Federal Tier II, Bin 5 or better tailpipe ratings, which rates a score of "8" on the U.S. Environmental Protection Agency's "Green Vehicle Guide."

THE PZEV 20-SECOND SOLUTION

Calibration supervisor Gary Zabkiewicz worked on Focus PZEV development and was asked to reprise his role for the new Ford Fusion. The team began by implementing a number of improvements to the induction, calibration and exhaust systems of the Duratec 23 to achieve LEV II certification. From that platform, the powertrain team targeted ignition and evaporative emissions to

qualify for PZEV certification.

"Ninety percent of the improvement in emissions is achieved in the first 20 seconds of startup," says Zabkiewicz. "As a result, most of our work on the Fusion PZEV targeted those first seconds after engine ignition."

Changes to decrease emissions at startup include a Ported Electronic Thermoactor Air system, which injects metered thermoactor air into the intake manifold. The warmer air and additional oxygen enable more combustion and decrease the amount of unconsumed gasoline in the system.

In addition, recycling cold-start exhaust back through the engine provides a second opportunity to trap emissions after the catalysts reach operating temperature.

To help the catalysts reach operating temperature faster, the team installed a stainless steel, dual-walled manifold that heats up faster than the standard Duratec 23 cast-iron manifold.

ALL-NEW CAR, ALL-NEW KEY

The 2006 Ford Fusion is all-new – right down to its key.

Fusion is the first Ford to feature integrated key-fob technology.

The new fob features three ergonomically spaced buttons, positioned in a U-shaped pattern in a concave recess that's thumb-friendly.

The button placement allows quick access to door lock and unlock functions, as well as the Fusion's trunk-lid release.

A smaller red panic button is located in the lower left corner.

In addition, to protect against theft, Fusion's key is equipped with Ford's SecuriLock™ passive anti-theft system. The system is designed to help prevent the engine from being started unless a coded key programmed to the vehicle is used. There are 72 million billion possible key code combinations. A remote perimeter vehicle alarm is optional.

About Ford Motor Company

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