

2006 Fusion Powertrain

FUSION POWERTRAINS DELIVER PERFORMANCE, REFINEMENT AND EFFICIENCY

- Standard 160-hp 2.3-liter I-4 and 5-speed manual or automatic transaxles
- Available 221-hp 3.0-liter V-6 and wide-ratio 6-speed automatic
- Partial Zero Emissions Vehicle status, plus up to 31 mpg

Fusion offers a choice of Ford's 2.3-liter Duratec 23 I-4 or 3.0-liter Duratec 30 V-6. Both feature all-aluminum construction, dual overhead cams, four valves per cylinder, intake Variable Cam Timing (i-VCT) and electronic throttle control to deliver smooth, spirited performance, along with good fuel economy and low emissions ratings.

Both engines employ four valves per cylinder and feature 150,000-mile tune-up intervals, utilizing coil-on-plug ignition and electronic throttle control. The I-4 features a direct-acting mechanical bucket-tappet valvetrain, while the V-6 engine features a hydraulically lash-adjusted roller-finger follower valvetrain. The throttle control works with both automatic transaxles to deliver smooth gear changes by adjusting throttle plate movement to tailor torque to the timing of each shift.

DURATEC 23 I-4

The Duratec 23 I-4 delivers 160 horsepower and 150 foot-pounds of torque. An inherently efficient design that has proven its durability, the world over, in a wide variety of vehicles; this engine delivers highway fuel-economy ratings of 31 miles per gallon.

To enhance efficiency, the Duratec 23 features Charge Motion Control Valves in the intake runners – similar to those found in the powerful F-150 pickup – to boost torque and improve combustion at low engine speeds. To reduce vibration, the inline four cylinder employs hydromounts in two positions – at the engine and the roll restrictor. It also has sump-mounted balance shafts for increased smoothness.

The exhaust system on the Duratec 23 uses a single muffler and dual tailpipe tips, designed to reduce backpressure.

DURATEC 30 V-6

The Duratec 30 delivers 221 horsepower and 205 foot-pounds of torque, paired with a standard six-speed automatic. This powertrain combination leads the class in acceleration during passing at freeway speeds. It's expected to be about a second faster than cars in its competitive set from 55-75 mph, and it records 0-60 mph times in less than 8.5 seconds.

The Duratec 30 V-6 has hydraulic mounts to isolate engine vibration, movement from the vehicle's chassis and to level out gearshifts. Hydromounts are filled with viscous fluid that is pumped from one internal chamber to another in response to the powertrain's movement.

The powertrain is suspended using three hydro-type mounts in a pendulum-style array above the engine within the front chassis structure, versus the more common "cradle" system in which the engine rests upon its mounts. The geometric placement of the mounts helps to isolate various forces acting on the engine and transmission so that the mounts can be tailored to absorb specific types of

vibration.

To further refine engine character and improve durability, both engines feature deep-skirted engine blocks. The Duratec 30 also uses a front engine cover made of a sheet metal "sandwich" to absorb sound through what is known as constrained layer damping.

The exhaust system – dual exhaust pipes behind the catalyst fitted with dual mufflers – provides a 10:1 ratio of exhaust volume to engine displacement to slow the flow of exhaust gases, resulting in a velvety, sophisticated exhaust note. The induction system features an electronically controlled communication valve to adjust its effective internal volume based on speed and load, contributing to consistently desirable sound levels.

FIVE-SPEED MANUAL, FIVE-SPEED OR SIX-SPEED AUTOMATIC

The Duratec I-4 comes with a standard five-speed manual transaxle or an optional five-speed automatic. Each of these transmissions provides an overdrive ratio for each of its two highest gears. For the five-speed manual, fourth gear has a 0.97:1 ratio and fifth gear has 0.76:1. For the five-speed automatic, fourth gear has a 0.90:1 ratio and fifth gear has 0.69:1. These overdrive gears help improve highway fuel economy because they reduce the number of revolutions per minute the engine is turning at cruising speeds.

The Duratec V-6 is equipped with a wide-ratio six-speed automatic transaxle, something rare in Fusion's market segment. This transmission's overall span of approximately 6:1 – versus 4.5:1 for a typical five-speed – allows this smaller, more fuel-efficient engine to deliver exceptional gas mileage along with a strong performance feel.

The six speeds allow the engine to stay closer to its most efficient rpm as the vehicle goes up and down through the gears. This aids fuel economy. Of course the greater number of gears leads to enhanced performance. During acceleration, the engine remains closer to its peak power level. And drive smoothness is enhanced as the change in engine RPM is reduced for each gear transition.

Another bonus is that the modern six-speed automatic is lighter than competitive four- and five-speed transaxles, boosting performance and economy further.

CLEAN AND GREEN

The EPA highway fuel economy rating for the V-6 is 29 miles per gallon (mpg), while the I-4 with manual transaxle is 31 mpg.

Also good news for the environment, the Duratec 23 I-4 with automatic transaxle will be rated as a Partial Zero Emissions Vehicle (PZEV) in states that have adopted California's emissions regulations. It will be the Ford brand's third PZEV application after the Escape Hybrid and Focus PZEV. The Duratec 30 V-6 will meet LEV II evaporative standards in federal states and ULEV II tailpipe emissions in California. The V-6 is the cleanest Duratec 30 ever produced qualifying for ULEV II tailpipe emissions.

HYBRID POWERTRAIN COMING SOON

In a 2008, Ford will offer Fusion with a hybrid powertrain – making it the fifth full hybrid in the Ford Motor Company stable, following the Ford Escape Hybrid, Mercury Mariner Hybrid and Mazda Tribute Hybrid, and Mercury Milan Hybrid.

About Ford Motor Company

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