

2005 Escape Powertrain

2005 FORD ESCAPE HAS NEW ENGINE, INTELLIGENT 4WD FOR INCREASED POWER AND PERFORMANCE

- All-new Duratec 23 four-cylinder engine with world-class refinement

Fully automatic Intelligent 4WD system

Actions to make the Duratec 30 V-6 engine smoother and more quiet:
Quieter interior and improved ride and braking

MIAMI, Nov. 7, 2003 - Ford has beefed up the 2005 Escape with an all-new four-cylinder engine with a newly available automatic transmission, a new Intelligent 4WD System and improvements in quietness, ride and braking. The original Escape set a new standard for fun-to-drive dynamics, all-weather confidence and off-road capability in a small sport-utility vehicle. Powertrain and chassis improvements to the redesigned 2005 model include :

- The all-new Duratec 23 four-cylinder engine, the latest application of Ford's global four-cylinder engine architecture
- A balance shaft on the Duratec 23 for world-class refinement
- An automatic transmission option with the Duratec 23
- An all-new fully automatic Intelligent 4WD System for even better traction and stability with smoother, more fuel-efficient operation
- A quieter interior and improved ride
- Standard anti-lock brakes with Quick Brake Assist and increased brake life

The New Duratec 23 Four-Cylinder Engine

The 2005 Escape is the latest Ford Motor Company vehicle to take advantage of the new global modular four-cylinder engine family. The base engine in the Escape displaces 2.3 liters and produces 153 horsepower and 152 foot-pounds of torque, an increase of 26 horsepower and more than 15 foot-pounds of torque compared with the 2004 model's 2.0-liter four-cylinder engine. The new engine produces its torque on a broader, flatter curve than the current powerplant, for better mid-range throttle response. For the first time, the four-cylinder engine will be available with a four-speed automatic transmission. The standard five-speed manual transmission is a new gearbox with short, positive throws and reduced shift efforts.

"The performance of this new engine makes it a great match with the newly available automatic transmission," says Kumar Galhotra, Escape Chief Engineer. "We think the automatic will greatly increase the popularity of four-cylinder Escapes."

The new engine increases the towing capacity of four-cylinder Escape models from 1,000 pounds to 1,500 pounds for 2005. V-6 models can tow up to 3,500 pounds, when properly equipped.

The Duratec 23's aluminum block and head are approximately 40 pounds lighter compared to the current iron and aluminum engine - leading directly to fuel economy and vehicle dynamics improvements. The cylinder head's Dual Overhead Cam (DOHC) design uses Direct Acting Mechanical Bucket (DAMB) tappets and an aluminum alloy (AA319) "high flow" cylinder head

with press-fit valve seats, which helps to improve long-term sealing.

A Smooth Operator

In addition to the Duratec 23's balance shaft - a gear-driven counter-rotating weight system that nearly eliminates the characteristic vibration of a four-cylinder engine - a host of low-noise features enhance engine refinement. These include a single, service-free poly-V accessory-drive belt made of composite rubber, an automatic belt tensioner, a low-noise alternator with dual internal cooling fans and a length-symmetrical intake manifold. Overall idle noise, vibration and harshness is improved, and powertrain noise during driving has been reduced by one to three decibels throughout the engine speed range.

Refined to the Last Detail

To "sculpt" the engine sound to be sporty yet refined, engineers made the computer-designed intake manifold in a fully symmetrical, lightweight plastic design that increases airflow and stays cooler than cast metal. A new four-hole fuel injector design delivers a highly atomized-spray pattern directly toward the twin inlet ports of each cylinder. This allows for more spray penetration, better atomization and less cylinder wall wetting than a single-hole injector. This translates into smooth drivability and low emissions.

Duratec 30 V-6 Improvements

Escape's V-6 engine, the Duratec 30, continues to be standard on XLT and Limited models, producing 200 horsepower and 193 foot-pounds of torque - among the best ratings in the class.

For 2005, this 3.0-liter V-6 has improved part-throttle and launch performance feel, a smoother idle and improved shift quality from its standard four-speed automatic transmission. Redesigned engine mounts have reduced the vibration of the steering wheel, while a retuned acoustic silencer helps reduce overall powertrain noise by one to three decibels.

Part-throttle driving feel and idle stability improvements are made possible by Ford Motor Company's new Black Oak powertrain management software. The new 32-bit Motorola PowerPC™ processor is more than five times faster than previous designs, can communicate more quickly with the automatic transmission and has adaptive capabilities - all of which provide more confident, refined performance.

With the V-6 engine, Escape can tow up to 3,500 pounds, when properly equipped. Both engines feature a new catalytic converter that provides tighter emissions control with less precious metal than used previously.

New Intelligent 4WD System

Four-wheel-drive Ford Escapes have an all-new, fully automatic four-wheel-drive system for 2005. The new Intelligent 4WD System replaces the current Control Trac II System for more positive traction and vehicle stability, improved fuel economy and smoother operation.

The automatic system requires no driver interaction and is so seamless in operation that most drivers will never notice that it has engaged - except by being impressed by Escape's capability in slippery conditions. Whereas current Escape models have two four-wheel-drive settings - either "AUTO" or "ON" to lock the center coupling - the 2005 models do not need the switch. The fully automatic system provides the maximum traction as driving conditions vary.

The Intelligent 4WD System is a fully computer-controlled clutch that engages the rear wheels as needed; in normal conditions Escape is driven by its front wheels. Using sensors at each wheel, at the accelerator, the system's computer is able to calculate dozens of times per second exactly how

much torque to send to the rear wheels to minimize slip - and can even predict slip and preclude it from happening at all.

The Intelligent 4WD System eliminates one of the drawbacks of other four-wheel-drive systems tuned aggressively for maximum traction, which is a binding effect during tight turns and driveline harshness when the system engages. The Intelligent 4WD System can sense tight turns and continuously varies the torque to the rear wheels at all speeds, offering the benefits of a "locked" four-wheel-drive system without any of the drawbacks.

When the Rubber Meets the Ice, Intelligent 4WD Delivers

The new Intelligent 4WD System has proven itself in demanding internal tests on ice, on dry pavement and on every surface in between.

- **Traction:** A full-throttle start on ice shows the system to be equivalent to "locked" four-wheel drive in terms of accelerating from rest
- **Stability:** It provides "neutral steer" characteristics, outperforming "locked" four-wheel-drive and front-wheel drive during cornering tests
- **Refinement:** During tight, low-speed turns on dry pavement, it delivers the refinement of front-wheel drive, with no binding or lurching
- **Convenience:** Confident performance without having to throw a switch or pull a lever
- **Fuel economy:** Lower friction results in approximately 0.2 mpg better fuel economy

A More Comfortable, Quieter Ride

The 2005 Escape has a smoother ride over road undulations and a quieter cabin. The dampers in the MacPherson strut front suspension have larger-diameter pistons (increased from 32 mm to 35 mm) and new tuning to improve ride over varying road conditions.

More effective sealing and increased sound insulation join the sound-deadening package for 2005. Key sound-deadening elements include an improved mat between the engine and passenger compartment, improved carpet insulation on the floorpan and better sound-absorbing trim panel mats for further noise isolation.

More Confident Braking and Longer Brake Life

Escape's brakes are improved for 2005. The newly standard anti-lock system features Quick Brake Assist, a power-assistance technology that can recognize hard braking and help the driver apply maximum braking force - for shorter stops. New friction materials provide reduced fade and up to three times longer life in internal tests. Six-cylinder four-wheel-drive Escapes have discs standard at all four wheels that measure 11.9 inches across - a full inch larger than before - for up to five times longer life.

A Focus on Dynamics

Despite its impressive capability off-road and in slippery conditions, Escape has become known for its dynamic on-road capability. The new front stabilizer bar system with low-friction links provides a subtle improvement to Escape's already agile, predictable and inspiring driving character. This performance stems from Escape's solid unitized body construction, its MacPherson strut front suspension, rack-and-pinion steering and independent rear suspension (IRS). Independent rear suspension once was a rarity among sport-utility vehicles, but now is used in the Escape, Explorer and Expedition. The IRS gives Escape precise steering and handling through dynamic toe control and the ability of each wheel to react separately to road imperfections.