

Toyota Highlander Adds New Options on Base Grade Models For 2010

September 24, 2009

The Toyota Highlander crossover sport utility vehicle continues to showcase Toyota value for 2010 by adding new options to Base grade models. The base four-cylinder model, which was added to the lineup for 2009, now offers a power tilt/slide moonroof, and the Base V6 model now offers a backup camera with a monitor in the multi-information display.

The second-generation Highlander is significantly larger, roomier and more powerful than the vehicle it replaces, yet still has excellent fuel efficiency. The new-generation Highlander is noticeably quieter and more spacious with enhanced versatility and ride comfort. It is among the leaders in providing standard active and passive safety equipment in a segment where safety is at the top of purchase considerations.

The 2010 Highlander is available in Base, Sport and Limited grades in both two-wheel (2WD) and full-time four-wheel-drive (4WD) models. The four-cylinder engine is standard on the Base grade with 2WD. All Highlander Hybrid models are equipped with four-wheel-drive with intelligence and available in Base and Limited grades.

Performance and Efficiency

The Toyota Highlander offers three distinct types of performance: a 2.7-liter four-cylinder engine joined the line in 2009, offering an EPA-estimated 26 MPG in highway driving. The new 2.7-liter engine produces 187 horsepower and 186 lb.-ft. of peak torque while providing excellent fuel efficiency. The engine is equipped with a variable intake manifold and dual variable valve timing with intelligence (VVT-i), which controls phasing on both the intake and exhaust camshafts to optimize torque and fuel efficiency. Both of these technologies help give the new 2.7-liter engine a broad torque curve for strong response at all engine speeds. The new four-cylinder engine is teamed exclusively with a standard six-speed electronically controlled automatic overdrive transmission.

Standard on Highlander Sport and Limited grades and optional on the Base grade is the 3.5-liter V6 that produces 270 horsepower at 6,200 RPM and 248 lb.-ft. of torque at 4,700 RPM. This engine, also, is equipped with dual VVT-i and a variable intake manifold. The V6 Highlander has an EPA estimate of 24 MPG in highway driving (2WD). Each engine is mated to a five-speed electronically controlled transmission (ECT), which offers fully automatic shifting as well as selectable manual sequential shifting.

The Highlander Hybrid continues with Hybrid Synergy Drive, which was extensively upgraded and refined for the second generation for both power and fuel economy. The system pairs a 3.3-liter V6 engine with its high-torque electric drive motor-generator and uses a second rear-mounted motor to provide automatic on-demand four-wheel drive with intelligence traction. The output of the Hybrid Synergy Drive powertrain is 270 net horsepower, while delivering impressive fuel economy ratings. The 2010 Highlander Hybrid receives EPA estimated fuel economy ratings of 27 MPG city/25 MPG highway/26 MPG combined. The combined figure is about 30 percent higher than the conventional V6 Highlander models.

The 4WD Highlander Hybrid uniquely generates rear-wheel power with a separate 45-kW electric motor (MGR) that provides up to 96 lb.-ft. of additional drive torque on demand. Thus, the Highlander Hybrid 4WD-i does not

require power-transfer gearing or a driveshaft from the front. The system electronically varies front and rear torque distribution depending on traction conditions.

Activating an EV mode switch located on the front center console allows the driver to operate strictly in electric-mode under certain conditions for a limited distance at low speeds, or in some stop-and-go driving conditions. The resulting benefit is reduced fuel consumption, emissions and noise. A new ECON drive mode switch activates a throttle control program that smoothes out the throttle response during acceleration, enhancing fuel economy.

A third new fuel saving feature is a Hybrid System Indicator located on the left side of the Optitron combination meter. This feature provides the driver with a guideline to help reduce fuel consumption. When the driver increases acceleration, the Hybrid System Indicator automatically switches to “acceleration mode” and encourages the driver to keep the power meter needle within white dash marks to help achieve maximum fuel economy.

Handling and Ride

The 2009 Highlander builds on the previous-generation model’s excellent reputation for providing agile handling and a smooth, quiet ride. Four-wheel independent suspension is via MacPherson struts in front and a dual-link strut rear suspension system. Sport-tuned suspension on the Sport grade sharpens handling responses. Base Highlander models are equipped with standard 17-inch alloy wheels with 245/65 R17 tires. Sport and Limited models get standard 19-inch alloy wheels with 245/55 R19 tires. A direct tire pressure warning system is designed to alert the driver if pressure in a tire drops to critical levels. All Highlander models are equipped with four-wheel disc brakes. On conventional Highlander 4WD models, full-time four-wheel drive is available on all grades.

As with all Toyota SUVs for the last five years, Highlander comes standard with Toyota’s Star Safety System?, which includes enhanced Vehicle Stability Control (VSC) and Traction Control (TRAC), an anti-lock brake system (ABS) with Electronic Brake-force Distribution (EBD), and Brake Assist (BA).

Enhanced VSC helps the driver maintain control by automatically adjusting engine output and braking force at each wheel under certain conditions while also providing steering assistance in the appropriate direction through Electric Power Steering (EPS). Unlike conventional ABS, TRAC, VSC and EPS, which operate independently of each other, the enhanced VSC system integrates all of these features to enhance vehicle maneuverability in all traction conditions. Gas Highlander models are also equipped with a straight-line steering feature. When varying traction causes ABS to apply different left/right braking force, the system can apply steering torque to help offset left/right pull.

The Highlander Hybrid employs the advanced Vehicle Dynamics Integrated Management (VDIM) system. VDIM system is designed to enhance handling, traction and braking systems that normally react to vehicle driving conditions by anticipating tire slippage before a skid, slide or wheel spin occurs and helps make corrections in a smooth, progressive way. In addition to integrating all of the Highlander’s dynamic control systems (VSC, TRAC, BA, EPS, EBD and ABS), the VDIM system also employs powerful proprietary software to integrate the Electronic Throttle Control with intelligence (ETC-i) and Electronically Controlled Brakes (ECB).

All Highlanders also incorporate a corner-braking feature. Also harnessing the integration of the vehicle’s dynamic control systems, this feature limits brake pressure on inside wheels during cornering to help provide control through the turn.

Two additional electronic/hydraulic systems, though not part of enhanced VSC, are also designed to help

improve driver confidence and control. Standard on all Highlander and Highlander Hybrid models, Hill-Start Assist Control provides braking pressure to all four wheels for approximately two seconds to help prevent the vehicle from rolling backward, , therefore helping to ensure a smooth start.

Downhill Assist Control (DAC), standard equipment on all gas 4WD models, helps control downhill speed when engine braking is not sufficient. The DAC feature is designed to maintain a constant speed, and maintain handling and steering control by reducing wheel lock under braking even at slow speeds on slippery descents.

Safety

Highlander comes standard with a total of seven airbags. These include advanced driver and front passenger airbags, front seat-mounted side airbags and a driver's knee airbag. Roll-sensing side curtain airbags help to protect the occupants of all three rows in the event of certain side collisions or vehicle rollovers. Additionally, all Highlander models are now standard equipped with front active headrests.

Comfort and Convenience

Standard features on all Highlander models include air conditioning; front seats with height-adjustable active head rests and eight-way (10-way on Limited) adjustable driver's seat; power door locks and windows with driver's window jam protection and auto-up/down feature; cruise control; multi-function keyless entry system; UV-reduction windshield and rear privacy glass; digital clock; dual sun visors with vanity mirrors and sliding extensions; conversation mirror; illuminated entry system; manual tilt and telescopic steering wheel; scheduled maintenance indicator light; full-size spare tire; and much more.

Base and Sport models feature a standard AM/FM/CD audio system with six-speakers; Limited models upgrade to an AM/FM/six-disc in-dash CD changer with six speakers, MP3/WMA playback capability and satellite radio capability. All audio systems are equipped with a universal mini-jack.

Sport and Limited grades feature a standard backup camera with a 3.5-inch multi-information display; this feature is newly optional for V6 Base grade models for 2010. The display includes a backup camera monitor, clock, outside temperature, warning messages, and cruise information that includes average fuel economy, average speed, distance to empty, current fuel economy, and trip timer. On models equipped with the optional navigation system, the backup camera's images are viewed on the seven-inch navigation screen.

Options

A variety of options and accessories are offered, including a power rear door that can be opened and closed with a key fob; a voice-activated touch screen navigation system with an eight-inch screen; JBL premium audio with a four-disc changer, nine speakers and Bluetooth® technology and satellite radio capability, a rear-seat entertainment system with a nine-inch screen; three-zone air conditioning; JBL premium audio with six-disc changer, nine speakers and Bluetooth® technology and satellite ready capability; leather seat trim and multi-stage heated seats, and a power tilt/slide moonroof. The optional tow package enables up to 5,000-pound maximum towing capacity (V6 gas models only) — one of the highest in Highlander's class — while the four-cylinder tow package enables up to 3,500 pounds of maximum towing capacity.

Exterior Design

The new-generation Highlander moves away from traditional SUV styling cues. Caltly Design Research in Newport Beach, Calif. sculpted clean, crisp lines, a wide, stable stance and muscular contours to give Highlander an advanced, contemporary, assertive and dynamic personality.

The Base grade Highlander could be mistaken for an upgrade model with its six-spoke 17-inch machined alloy wheels, color-keyed power remote outside mirrors, silver-painted front grille, silver-painted rear license plate garnish, a black rear lower bumper cover and black rear step bumper cover.

The Highlander Sport can be identified by its 19-inch five-spoke machined alloy wheels with a dark silver-painted insert finish, dark-silver painted roof rails, smoked chrome front grille surround and inserts, dark silver-painted rear license plate garnish, chrome exhaust tip, sport-styled rear spoiler, fog lamps, smoked head lamp and tail lamp lenses, color-keyed rear lower bumper cover and sport badging.

The upscale Limited looks the luxury part with chrome grille and inserts, chrome door handles, puddle lamps, fog lamps, light silver-painted roof rails, chrome grille surround and light silver-painted rear license plate garnish, and rear spoiler.

The Base grade Highlander Hybrid is distinguished by a front grille with chrome surround and silver-painted fins, silver-painted rear license plate garnish, blue-tinted headlight and taillight lenses, black fog lamp covers, silver-painted lower bumper cover, rear spoiler with LED stop lamp, 17-inch alloy wheels with 245/ 65 R17 tires, and Hybrid Synergy Drive badging. Highlander Hybrid Limited adds 19-inch, 10-spoke aluminum alloy wheels, light silver-painted roof rails, rear glass hatch, and a power rear door.

Interior Design

The second-generation Highlander provides an open, airy and versatile interior with seating for seven or up to 95.4 cubic feet of total cargo capacity (94.1 for Highlander Hybrid). Compared to the previous-generation Highlander, the new model's interior is more than four inches longer, front-to-back, and is also wider, yielding additional room between each of the three rows of seats. There are numerous storage compartments throughout the cabin, along with ten cup holders, four bottle holders, two front and one cargo-area 12-volt auxiliary power outlets and cargo area tie down hooks.

The Base and Sport grades feature a center console, shift knob with silver-painted accents and front driver and passenger assist grips. On the Sport grade the assist grips are accented in silver-painted trim. The center console, shift knob and assist grip on the Limited grade feature satin-mahogany wood grain-style trim.

The Highlander Hybrid is equipped with a unique instrument panel, including an energy monitor that adds new features to assist the driver in maximizing fuel economy. Styling features on the inside of the Highlander Hybrid include a silver and birch-wood grain-style interior trim with chrome door handle accents, Optitron meters with blue graphics and a power meter with a hybrid system indicator.

The headrests are adjustable in two ways on the Base grade and four different ways on Sport and Limited. The second row provides 40/20/40 split seatbacks. The seat functions as either a three-person bench or, by removing the Center Stow[®] seat, a pair of captain's chairs complete with armrests, creating a convenient walk-through area between the seats for easier access to the third row of seats. A Center Stow[®] center console can also be placed between the seats to provide additional storage. The second row also slides fore and aft 4.7 inches and reclines. Highlander offers available rear air conditioning for second- and third-row passengers.

Access to the third-row has been improved, not only by adding the Center Stow[®] seat, but also by placing the walk-in lever at an easy to reach position at the bottom of the second-row seat. Standard on Highlander Sport and Limited grades, one-touch levers inside the cargo area allow the second-row seats to fold forward and flat.

The third-row seats function in a similar manner, using a lever in the back of the seat. Highlander 2WD Base and both 2WD and 4WD Sport models are available with a two-row seat package. The rear door offers a power operation as an option (standard on Highlander Hybrid Limited and not available on gas Base grades). The four-cylinder model also comes standard with two rows of seats and an available third row seat package. Smart Start and Entry is standard on the Highlander Limited and Hybrid models.

#