

## THE NEW TOYOTA HIGHLANDER

- The new Highlander complements Toyota's SUV line-up, giving seven-seat flexibility, the longest load space in its class and up to 1,909 litres of boot capacity
- Premium equipment features include 20-inch alloy wheels, panoramic roof, 11-speaker JBL sound system, eight-inch multimedia display and smartphone integration with Apple CarPlay and Android Auto
- Fourth generation full hybrid electric powertrain with intelligent all-wheel drive (AWD-i) and two-tonne towing capacity
- Built on Toyota's GA-K modular platform, securing a confident and natural drive
- Latest Toyota Safety Sense systems, including Pre-Collision System with new Intersection Turn Assistance

### INTRODUCTION

Highlander, Toyota's largest SUV, is on sale in the UK and western Europe for the first time, offered in an all-hybrid model range.

To create the new Highlander Hybrid, Toyota has drawn on more than 20 years' experience in making hybrid vehicles and more than 16 million global sales. The model's fourth generation self-charging system provides up to 80 per cent emissions-free driving, combined with Toyota's renowned quality, durability and reliability.

Highlander joins RAV4, C-HR, Yaris Cross and the forthcoming Aygo X, bZ4X and Corolla Cross to provide a comprehensive Toyota European SUV line-up. In fact, it is Europe's largest hybrid SUV range; in the UK all these models are now hybrid-electric or plug-in hybrid electric only, while bZ4X will enter the line-up as a battery electric model.

Hitherto, electrification of large (E-segment) SUVs has tended to focus on plug-in hybrid (PHEV) technology. Despite the benefits this offers, customers in this part of the market tend to travel longer distances with a greater percentage of motorway miles that a PHEV's electric range may not be able to meet. Highlander's self-charging hybrid powertrain and an electric cruising speed of up to 78mph (125km/h) efficiently meet the segment's customer needs.

Built on Toyota's GA-K platform, Highlander has the large SUV attributes of seven seats on demand, comfort, drivability and safety. The all-wheel drive 245bhp/182kW hybrid powertrain is exceptionally quiet and offers fuel economy (WLTP combined cycle) from 39.2 to 39.7mpg

with 160 to 163g/km CO<sub>2</sub> emissions. Acceleration is smooth and powerful, and Highlander can tow loads of up to two tonnes.

## **DESIGN AND PACKAGING**

- Sleek and sophisticated SUV styling that evokes rugged, all-wheel drive power and durability
- Toyota's largest SUV with 2,580mm wheelbase giving space for flexible seven-seat interior and a 180mm sliding range for the second row of seats
- Seven-inch TFT multi-information, eight-inch multimedia and head-up displays
- Longest load space in segment and load capacity of up to 1,909 litres

### **Exterior design**

New Highlander Hybrid is 4,966mm long, 1,930mm wide and 1,755mm high and has a 2,850mm wheelbase. It has the sleek and sophisticated styling of a premium urban SUV while communicating the power, strength and durability of a rugged and versatile all-wheel drive model.

The wide front and rear tracks (1,662 and 1,690mm respectively) are given extra emphasis by flared wheel arches and the trapezoid shape of the upper and lower front grilles, reinforcing the car's broad and powerful stance.

In profile, there is a strong sense of dynamism generated by a sturdy, forward-leaning lower body and a rear-sloping, tapering cabin with blacked out pillars. Large, 20-inch alloy wheels add to the premium quality appearance – silver five-triple-spoke for the Excel model and dark grey/machined 10-spoke with the Premium.

The powerful look is further expressed in the wide flaring of the rear wheel arches, while the rear end is characterised by sharp, slim rear light clusters and large under-run.

Seven exterior paint colours are available, including a new Moondust blue pearlescent which uses a two-layer coating process. This gives a solid look with the lustre of pure metal.

### **Interior design**

The interior is designed with all the practicality, durability and flexible space-on-demand expected of a seven-seat family SUV, while offering a comfortable and luxurious environment for everyone on board.

The instrument panel has a solid central element that houses the eight-inch multimedia display and flows across the full width of the dashboard, framed by smooth, soft-touch padding. It is visually supported by a wide, square centre console.

The switchgear is shaped to flow seamlessly from the panels and for ease of use. Satin and wood grain trim finishes add to the prestigious ambience, while the soft-touch padding uses finely textured leather with precise stitchwork. The interior is upholstered in black perforated leather with textured silver ornamentation and dark wood trim.

## **Packaging**

Highlander's generous 2,850mm wheelbase allows it to be a true seven-seater. A 180mm sliding range for the second row seat means there is spacious and accessible accommodation in the two third row seats, comfortable for adults to use. Legroom for front seat passengers is up to 1,067mm; 1,043mm in the second row; and 703mm in the third row.

The power tailgate has a kick-sensor function on the Excel Premium model giving easy hands-free access to the load compartment. When all seven seats are in place, this provides 332 litres of storage, including 27 litres beneath the floor. When second and third row seats are folded flat, the space increases to 1,909 litres.

There are further storage spaces throughout the cabin, together with power, USB and external HDMI sockets and ports in the front and second row seat areas.

## **UK MODEL RANGE AND EQUIPMENT**

- Two Highlander versions available – Excel and Excel Premium
- Both grades provide triple-zone air conditioning, Skyview panoramic roof, LED headlights, wireless phone charging, heated front seats and 11-speaker JBL sound system
- Excel Premium features include hands-free tailgate operation, head-up display and digital rear-view mirror

Highlander is available in two high-specification versions in the UK: – Excel and Excel Premium.

The Highlander Excel equipment features include seven-inch TFT multi-information display in the driver's instrument binnacle; multimedia system with a central eight-inch display, satellite navigation and smartphone integration (Apple CarPlay and Android Auto); wireless

smartphone charger; triple-zone air conditioning; heated and ventilated front seats; heated steering wheel; power tailgate; Skyview panoramic roof, black leather seat upholstery; and 11-speaker JBL Premium Sound System.

Customers choosing the Excel Premium further gain kick-activated (hands-free) tailgate operation; ventilated front seats; heated outer second row seats; digital rear-view mirror; Panoramic View Monitor; and a head-up display.

Options (available for both models) include an Essential Protection Pack (boot liner and chrome bumper protection plate); black side steps with stainless steel grips; and seven/13-pin towbars.

On-the-road prices are £50,595 for the Highlander Excel and £52,575 for the Excel Premium. Both are protected by Toyota's five-year/100,000-mile new vehicle warranty.

## **DRIVING DYNAMICS**

- Fourth generation Toyota self-charging hybrid electric system, equipped with intelligent all-wheel drive (AWD-i)
- 245bhp/182kW power output, with 160 to 163g/km CO<sub>2</sub> emissions
- All-wheel drive system's rear electric motor adds 121Nm of torque, giving up to 1,300Nm to the rear wheels – with quiet performance and no penalties in emissions or fuel economy
- GA-K vehicle platform architecture supports nimble handling and comfortable motorway cruising

Highlander uses Toyota's fourth generation self-charging hybrid electric system, combining a 2.5-litre Atkinson cycle engine with front and rear electric motors (giving the SUV intelligent all-wheel drive) and a nickel-metal hydride battery, located beneath the second row of seats.

Smooth, powerful acceleration is delivered on demand and the car can cruise on all-electric power at speeds up to 78mph (125km/h). Appropriate for its size and status, Highlander can tow braked trailers of up to two tonnes.

The hybrid system's maximum power output of 245bhp/182kW enables 0-62mph acceleration in 8.3 seconds and a maximum speed of 111mph. WLTP combined cycle fuel consumption is from 39.2 to 39.7mpg, while CO<sub>2</sub> emissions are 160 to 163g/km.

The driver can select their preferred drive mode to suit the occasion or conditions – Eco, Normal, Sport and Trail. All four modes can still be used when the vehicle is operating in its (separately selectable) EV all-electric mode.

The four-cylinder, 16-valve DOHC 2,487cc Atkinson cycle engine has a world-class 41 per cent thermal efficiency. Its D-4S fuel injection system provides direct cylinder and port injection, the method changing according to the driving conditions to optimise power output and fuel efficiency. The engine's Dual VVT-i intelligent variable valve-timing uses electric motor operation on the intake side rather than oil pressure control, which enhances output and fuel efficiency and reduces emissions.

The long bore and stroke ratio (87.5 x 103.48mm) and innovative cooling system combine to further improve the engine's overall efficient performance.

The hybrid system uses a smaller, lighter transaxle than its predecessor, adopting a dual-axis structure for the motor and generator. This delivers a low-loss gear train with a narrower width. The parallel axis design allows for a reduction in the motor's size and an increase in its rotation speed.

The gear ratio has been optimised for maximum fuel efficiency and dynamic performance. Resonance and noise have been suppressed by measures including polishing of the gear teeth and a new gear structure design, making the hybrid system quieter than ever before.

### **Noise and vibration**

Noise and vibration levels are addressed with acoustic glass for the windscreen and front glazing, the positioning of silencers in the roof, dashboard and floor, and liners in the wheel arches and load space. These measures help ensure a noticeably quiet cabin environment.

### **Ride and handling**

Highlander displays engaging, nimble handling and comfortable motorway cruising thanks to the high body rigidity and low centre of gravity delivered by the GA-K platform, sophisticated MacPherson strut front and trailing wishbone rear suspension systems and rack-mounted steering.

The ride characteristics are made even more comfortable thanks to the Ride Control with Torque Demand. This controls drive torque to the front wheels to reduce vehicle pitch caused by fluctuations in the road surface and reduce the bonnet lift that can occur under hard acceleration.

## **Intelligent all-wheel drive**

The intelligent all-wheel drive (AWD-i) uses a new rear transaxle to improve maximum torque at the rear wheels. The rear electric motor system can provide 121Nm of torque and can transmit up to 1,300Nm to the rear wheels, boosting vehicle performance when moving from standstill, under acceleration and in slippery road conditions, without compromising noise, vibration, CO<sub>2</sub> emissions or fuel economy.

Torque distribution to the front and rear wheels is precisely controlled, anywhere between 100:0 and 20:80, according to the driving conditions. The distribution ratio is shown on the multi-information display when AWD-i is in operation.

## **Aerodynamics**

Numerous aerodynamic measures contribute to Highlander's superior stability, controllability and ride comfort and help improve fuel efficiency.

The body shell and underbody are optimised for aerodynamic performance. The bottom edge and side of the front bumper, the rear pillar, rear wings and roof spoiler are all shaped to smooth the flow of air over and away from the vehicle.

An air guide ensures airflow is directed efficiently and with minimum resistance to the radiator. When additional cooling isn't needed, the grille shutters close, reducing airflow resistance and helping speed engine warm-up.

In a first for a Toyota vehicle, the aero-ventilating alloy wheels provide both brake cooling and aerodynamic performance. The underbody has a large, flat undercover, which, together with front and rear wheel arch spats, smooths the passage of air beneath the car.

There are also mechanisms in the wheel arches that direct air flow away; reducing air pressure in the wheel arches increases the tyres' contact load, improving grip and vehicle stability.

## **SAFETY**

- Toyota Safety Sense fitted as standard
- Pre-Collision System with pedestrian detection by day and night and daytime cyclist detection
- Daytime Oncoming Vehicle Detection, Emergency Steering Assist and Intersection Turn Assistance

- Full-range Adaptive Cruise Control with Curve Speed Reduction, Road Sign Assist, Lane Tracing Assist/Lane Departure Alert and Adaptive High-beam System

Highlander is equipped with the latest Toyota Safety Sense active safety and driver assistance technologies, designed to help prevent or mitigate collisions in a wide range of traffic scenarios.

Elements include a Pre-Collision System that can detect pedestrians by day and night and cyclists during daytime driving, with Emergency Steering Assist and Intersection Turn Assistance; intelligent Adaptive Cruise Control with curve speed reduction; Lane Trace Assist and Lane Departure Alert with steering control; Road Sign Assist; and Adaptive High-beam System.

### **Updated Pre-Collision System**

When the Pre-Collision System automatically activates braking, having determined a risk of colliding with a pedestrian, cyclist or other vehicle, Emergency Steering Assist is triggered simultaneously. This provides additional steering torque when the driver swerves the car to avoid the obstacle. After collision avoidance, the system provides deviation restraint to help keep the car in its traffic lane.

Intersection Turn Assistance recognises collision risks with oncoming traffic or pedestrians crossing the road the car is about to turn into, when making a turn at a junction. It warns the driver with an audible alert and applies automatic emergency braking if they do not respond.

### **Intelligent Adaptive Cruise Control with curve speed reduction**

The intelligent Adaptive Cruise Control has automatic adjustment linked to the driver's use of the turn indicator. If the signal on the overtaking side is used while ACC is in operation, the system will apply preliminary acceleration to reduce the distance to the vehicle ahead, in preparation for changing lanes. After changing lanes, the vehicle will smoothly return to its pre-set speed.

The ACC is linked to the car's Road Sign Assist, so that vehicle speed can be automatically adjusted in line with changing speed limits. Curve speed reduction will slow the vehicle when it determines speed needs to be reduced through a bend.

## **Lane Trace Assist**

Lane Trace Assist builds on the functionality of the Lane Departure Alert system to give uninterrupted, smooth driving support on motorways, even when there are frequent bends and in congested traffic.

When the system detects the possibility of the car deviating from its current lane, Lane Trace Assist will apply steering force to help the driver keep the car to its correct path. When the ACC is operating, it will provide steering support to keep the car centred in its traffic lane.

The system has been improved with faster reactivation following a lane-change; an increased counter-steer angle to address any air turbulence and maintain a straight line when overtaking a large truck; earlier notice of a bend ahead with a radius beyond the system's capability; and increased steering force to keep the system active at higher speeds.



## TOYOTA HIGHLANDER TECHNICAL SPECIFICATIONS

<b>2.5-litre HYBRID ENGINE</b>		
Engine code	A25A-FXS	
Engine type	4 cylinders in-line	
Valve mechanism	16-valve DOHC, VVT-iE (intake) and VVT-i (exhaust)	
Fuel injection	D-4S direct and indirect	
Displacement (cc)	2,487	
Bore x stroke (mm)	87.5 x 103.48	
Compression ratio	14.0:1	
<b>Total system output (bhp/DIN hp/kW)</b>	<b>244/248/182</b>	
Max. engine power (bhp/DIN hp/kW @ rpm)	188/190/140 @ 6,000	
Max. engine torque (Nm @ rpm)	239 @ 4,300 – 4,500	
Emissions certification	Euro 6d RDE2	
<b>HYBRID SYSTEM</b>		
<b>Electric motor (front)</b>		
Type	AC permanent magnet, synchronous motor	
Max. power (kW)	134	
Max. torque (Nm)	270	
<b>Electric motor (rear)</b>		
Type	AC permanent magnet, synchronous motor	
Max. power (kW)	40	
Max. torque (Nm)	121	
<b>Hybrid battery</b>		
Type	Nickel-metal hydride	
Nominal voltage	288	
System voltage	650	
<b>TRANSMISSION</b>		
Type	CVT, planetary gear system	
Differential gear ratio	3.605:1	
<b>PERFORMANCE</b>		
Max. speed (mph)	111	
0-62mph (sec)	8.3	
<b>FUEL CONSUMPTION, EMISSIONS &amp; INSURANCE</b>		
Combined fuel consumption – WLTP data (mpg)	Excel	39.2-39.7
	Excel Premium	39.2-39.7
Fuel tank capacity (l)	65	
CO <sub>2</sub> emissions – combined, WLTP data (g/km)	Excel	160-163
	Excel Premium	160-163
Insurance groups	TBC	
New vehicle warranty	5 years/100,000 miles	

<b>SUSPENSION</b>	
Front	MacPherson strut
Rear	Trailing arm, double wishbone
<b>BRAKES</b>	
Front (diameter, mm)	Ventilated discs, 457
Rear (diameter, mm)	Ventilated discs, 457
<b>STEERING</b>	
Type	Rack and pinion, electric power steering
Turns lock to lock	2.82
Min. turning radius – tyre/body (m)	5.7/6.2
<b>TYRES AND WHEELS</b>	
Wheel size	20-inch
Tyre size	235/55R20 102V
<b>WEIGHTS</b>	
Kerb weight (min/max kg)	2,050-2,105
Towing capacity - unbraked (kg)	700
Towing capacity - braked (kg)	2,000
Gross Vehicle Weight (kg)	2,720
<b>DIMENSIONS – EXTERIOR</b>	
Overall length (mm)	4,966
Overall width (mm)	1,930
Overall height (mm)	1,755
Wheelbase (mm)	2,850
Front track (mm)	1,662
Rear track (mm)	1,690
Front overhang (mm)	988
Rear overhang (mm)	1,128
Ground clearance (mm)	202
Angle of approach (deg)	18.1
Angle of departure (deg)	22.7
Break-over angle (deg)	16.7
Wading depth (mm)	400
<b>DIMENSIONS – INTERIOR</b>	
Interior length (mm)	2,548
Interior width – front/row 2/row 3 (mm)	1,499/1,484/1,398
Interior height (mm)	1,212
<b>DIMENSIONS – LUGGAGE COMPARTMENT</b>	
Load space length (mm)	520
Load space width (mm)	1,138
Load space height – to roof (mm)	800
Load space height – to upper rear seat (mm)	458
Capacity to tonneau cover – 7 seats in place, inc. underfloor box (l)	268
Capacity to tonneau cover – 5 seats in place, row 2 at rearmost slide position, inc. underfloor box (l)	579
Capacity to tonneau cover – 5 seats in place, row 2 in mid-position, inc. underfloor box (l)	658
Capacity to tonneau cover – 2 seats in place, inc. underfloor box (l)	1,177

Capacity to roof – 7 seats in place, inc. underfloor box (I)	332
Capacity to roof – 5 seats in place, inc. underfloor box (I)	865
Capacity to roof – 2 seats in place, inc. underfloor box (I)	1,909

## TOYOTA HIGHLANDER EQUIPMENT SPECIFICATIONS

<b>SAFETY</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
Toyota Safety Sense: Pre-Collision System with night/daytime pedestrian detection, daytime cyclist detection, emergency steering assist and Intersection Turn Assist, Lane Departure Alert with steering control, Lane Trace Assist, Adaptive High-beam System, Road Sign Assist, Lane Trace Assist, intelligent Adaptive Cruise Control	✓	✓
Supplemental Restraint System airbags – x7	✓	✓
Front passenger airbag occupant detection	✓	✓
Front passenger airbag on/off switch	✓	✓
Seatbelts with pre-tensioners and force limiters	✓	✓
Front and rear seatbelt reminders	✓	✓
Driver and front passenger whiplash injury-lessening seats	✓	✓
ISOFIX child seat fixings on outer second row seats	✓	✓
ABS with Electronic Brakeforce Distribution	✓	✓
Brake Assist	✓	✓
Emergency brake light signal	✓	✓
Vehicle Stability Control	✓	✓
Active Traction Control	✓	✓
Hill-start Assist Control	✓	✓
Trailer Sway Control	✓	✓
Tyre pressure Monitoring system	✓	✓
Adjustable speed limiter	✓	✓
Blind Spot Monitor and Rear Cross Traffic Alert with auto braking	✓	✓
Child-proof door-locking	✓	✓
eCall	✓	✓
<b>COMFORT AND CONVENIENCE</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
Triple-zone air conditioning with pollen and clean air filters	✓	✓
Rear cabin air conditioning control panel	✓	✓
Heated steering wheel	✓	✓
Blue ambient lighting for door panels, dashboard and open storage tray	✓	✓
Electric power steering	✓	✓
Intelligent parking sensors with clearance sonar & auto brake	✓	✓
Manual steering wheel tilt and telescopic adjustment	✓	✓
Power windows	✓	✓
Front centre arm rest	✓	✓
Front footwell lights	✓	✓
Floor mats	✓	✓
Auto-dimming rear-view mirror	✓	x
Digital rear-view mirror	x	✓

Panoramic view monitor	x	✓
12v power outlets in front cabin x2	✓	✓
Wireless smartphone charger	✓	✓
<b>INSTRUMENTS &amp; CONTROLS</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
Drive Mode Select	✓	✓
Rear-view camera with washer	✓	✓
Automatic wipers	✓	✓
Automatic headlights	✓	✓
Smart entry and push-button start	✓	✓
Follow-me-home headlights	✓	✓
Electronic parking brake with hold function	✓	✓
Headlight height adjustment (manual)	✓	✓
Paddle shifts	✓	✓
<b>AUDIO, INFORMATION &amp; ENTERTAINMENT</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
Toyota Touch 2 with Go: 8in touchscreen, DAB tuner, satellite navigation, voice recognition	✓	✓
Audio, telephone and multimedia switches on steering wheel	✓	✓
7in colour TFT multi-information display	✓	✓
Head-up display	x	✓
JBL premium 11-speaker audio system	✓	✓
Access to MyT connected and ownership services	✓	✓
Smartphone integration via Apple CarPlay and Android Auto	✓	✓
USB ports – x3 front, x2 rear	✓	✓
Aux-in	✓	✓
<b>SECURITY</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
Remote central locking with double locking	✓	✓
Alarm system with anti-tamper and tilt-detection sensors	✓	✓
Speed-detecting automatic door locks	✓	✓
<b>STORAGE</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
Locking glovebox	✓	✓
Double-sided load space deckboard	✓	✓
Light in load space	✓	✓
Underfloor storage in load space	✓	✓
Front and rear bottle holders	✓	✓
Pockets in front seat seatbacks	✓	✓
Underfloor storage in load space	✓	✓
Retractable tonneau cover	✓	✓
<b>SEATING, UPHOLSTERY &amp; TRIM</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
Heated front seats	✓	✓
Heated outer rear seats	x	✓
Ventilated front seats	x	✓
Reclining rear seats – second and third row	✓	✓

Power-adjustable front seats with electric lumbar support on driver's seat	✓	✓
Memory setting for driver's seat	✓	✓
60:40 easy-flat folding second row seats	✓	✓
Easy-flat folding third row seats	✓	✓
Black leather upholstery	✓	✓
Leather steering wheel trim with grey stitching	✓	✓
Carbon fibre-look dashboard trim insert	x	✓
Grey headlining	✓	✓
Leather shift lever trim with satin chrome surround	✓	✓
Highlander-branded scuff plates	✓	✓
<b>EXTERIOR AND BODYWORK</b>	<b>EXCEL</b>	<b>EXCEL PREMIUM</b>
20in alloy wheels – 5-triple-spoke	✓	x
20in alloy wheels – grey/machined 10-spoke	x	✓
Rear privacy glass	✓	✓
Chrome roof rails	✓	✓
Body-colour rear spoiler	✓	✓
Body-colour door handles	✓	✓
Body-colour side protection mouldings	✓	✓
Projector LED headlights	✓	✓
LED rear light clusters	✓	✓
Headlight cleaners	✓	✓
LED front fog lights	✓	✓
LED daytime running lights	✓	✓
Power-adjustable heated, auto-folding, reverse-tilting door mirrors with memory function	✓	✓
Power tailgate	✓	✓
Hands-free tailgate kick-sensor	x	✓
Shark fin antenna	✓	✓
Silver rear under-run	✓	x
Grey rear under-run	x	✓
Temporary spare wheel	✓	✓
Power opening Skyview panoramic roof	✓	✓

## ENDS

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