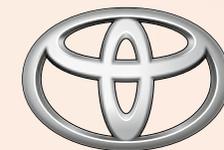


Geneva 09



TOYOTA



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Toyota

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World Premiere of the New Verso



World premiere of the new Verso

- Dynamic Lounge concept combining MPV practicality and flexibility with passenger car comfort, style and dynamism
- Improved Toyota Easy Flat-7 seating system, with more space, greater comfort and easier operability
- Toyota Optimal Drive technology - engine power increased by up to 20%, CO₂ emissions and fuel economy improved by up to 12%
- Enhanced driving dynamics with improved ride comfort, agility and noise suppression
- Designed to achieve Euro NCAP 5-star crash test rating



"In developing the new Verso, we gave it an exterior design that expresses both sportiness and stability, a fresh new interior with excellent convenience and attention to detail. We also pursued a high level of comfort and utility that we believe will be appreciated by European users. The new Verso enjoys a high range of interior storage solutions and user-friendly flexibility, enabling it to respond easily to the varying needs of the owner. We have enhanced the handling performance of the new Verso and, thanks to the support of our European engineering teams, we have been able to fine-tune the vehicle to ensure it delivers stable and smooth performance on every type of European road."

Verso Chief Engineer, Masato Katsumata.



Combining true Multi-Purpose Vehicle flexibility and practicality, with the style, quality, comfort and driving pleasure of a conventional passenger car, the new Toyota Verso is the no-compromise choice for compact MPV customers.

Toyota's unique, 'Dynamic Lounge' concept combines state-of-the-art exterior and interior styling with the ultimate in space, comfort, practicality and flexibility, class leading occupant and pedestrian safety features, and the ride quality, acoustic comfort and dynamic abilities of a conventional passenger car.

Within an all-new interior, an improved Toyota Easy Flat-7 seating system offers more space, greater comfort and easier operability, with a particular focus on enhanced second and third row accommodation.

Toyota Optimal Drive technology has been introduced throughout the new Verso range offering engine power increases of up to 20%, and fuel economy and CO₂ emission reductions of up to 12%. A five engine line-up features 126DIN hp 2.0 litre, and 150 and 177DIN hp 2.2 litre examples of Toyota's D-4D turbodiesel technology, as well as 1.6 and 1.8 litre Valvematic petrol units offering class-leading power and CO₂ emissions.

With a class-leading drag coefficient of just Cd 0.295, a 30mm longer wheelbase, front and rear tracks increased by 23 and 48mm respectively and extensively revised suspension geometry, the new Verso's improved driving dynamics offer all the agile handling, body control, stability and ride comfort of a conventional passenger car.

Combining upgraded active, passive and pedestrian impact safety features with a highly rigid, impact absorbing body shell incorporating an increased percentage of high tensile steel, the new Verso is designed to achieve a maximum, 5-star rating in the more stringent Euro NCAP crash test programme.

Capitalising on an investment of more than 1 billion Euros and reinforcing the Adapazari plant's reputation for exceptional build quality, the new Verso will be built at Toyota Motor Manufacturing Turkey.





Dynamic lounge concept

- **Dual-zone exterior design reinforcing a combination of functionality and dynamism**
- **Smart Wave dashboard design for superior ergonomics and visibility**
- **Improved Toyota Easy Flat-7 seating system, with more interior space, greater comfort and easier operability**
- **Increased loadspace with new Trunk Management system**
- **Class-leading NVH characteristics on a par with D-segment passenger cars**
- **Largest, one-piece, panoramic sunroof in the C segment MPV class**

Far from simply an interior styling and packaging exercise, Toyota's 'Dynamic Lounge' concept focuses on every key attribute of a C segment MPV to ensure that the new Verso combines state-of-the-art exterior and interior styling with the ultimate in space, comfort, practicality and flexibility, class leading occupant and pedestrian safety features, and the ride quality, acoustic comfort and dynamic abilities of a conventional passenger car.

The 'Lounge' element of this unique concept is reinforced through the comfort, quality, convenience, atmosphere and roominess of an all-new interior, whilst the Verso's 'Dynamic' content is expressed through powerful external and interior design elements and outstanding driving dynamics.

Dual-Zone Exterior Design

In comparison to the model it replaces, the new Toyota Verso has increased in length by 70mm to 4440mm, increased in width by 20mm to 1790mm, and remains 1620mm in height.

Building on the dynamic character of the previous model, the new Verso takes Toyota's distinctive design language a stage forward, giving it a fresh and unique interpretation. Innovative, dual-zone exterior styling divides the vehicle into two distinct zones, clearly expressing the combination of functionality and dynamism inherent in the new MPV's 'Dynamic Lounge' concept.

Seen in profile, the new Verso's dual-zone styling is clearly expressed by a strong character line which flows from the leading edge of the front bumper, rising through the lower edge of the doors before sweeping upwards through the 'C' pillar to define the roof mounted spoiler. Two distinct zones are thus delineated; Zone 1, the bonnet and cabin, and Zone 2, the chassis and rear loadspace.

The front of the new Verso is characterised by distinctive bonnet lines that flow from the base of the 'A' pillars, a confident, horizontal twin-bar grille which curves down and around a prominent Toyota emblem, large, powerful headlamp clusters pulled tightly back into the front wings and a deep air dam which reinforces the new MPV's broad, muscular stance.

In profile, sharply delineated front wheel arches compliment the dual-zone character line, blending softly into the upper wings to generate a second character line which reinforces the wheel arch before locating the aerodynamic door handles as it runs back along the vehicle waistline.

To the rear, a practical, top-hinged tailgate flanked by generous, high-visibility lamp clusters, is rebated deeply into the rear bumper, both continuing as a feature line along the upper flanks before tapering away at the rear lights helping to accentuate the car's silhouette.

A range of newly designed 16" and 17" wheels compliment the new Verso's dual-zone design, and ten body colours are available including five new colours: Silver Metallic, Red, Blue Metallic, Dark Blue Metallic and Dark Purple.





Smart Wave Interior Design

Further reflecting the Verso's 'Dynamic Lounge' concept, the all-new interior is dominated by the 'Smart Wave Dynamism' of the dashboard design, lifting the cabin styling far above the conventional functionality of a traditional MPV.

Offering superb switchgear ergonomics and placing the gear lever as close as possible to the steering wheel, the powerful, vertical definition of the centre console separates the focused functionality of the driver's zone from the relaxed comfort of the front passenger's zone.

The two zones are interconnected by a crisp 'wave' line running the full width of the fascia, which houses the driver's instrument binnacle. The binnacle, containing cylindrical speedometer and rev' counter dials, is offset to maximise the driver's view of the road ahead whilst still remaining within his field of vision.

Ambiance, colour choice and the quality of materials are all fundamental to the 'Dynamic Lounge' concept. As the Verso is approached and opened via the remote key fob, door mirror-mounted puddle lights illuminate the ground beside the car, and discreet, orange LED front footwell lighting welcomes occupants as the doors are opened.

Complimented by titanium-finish highlights to the instrument panel, centre console steering wheel and door handles, a blend of soft-touch, technical grain on the upper dashboard and leather grain on the darker lower dashboard accentuates the sense of space and roominess within the cabin.

The airy, spacious atmosphere of the cabin is further reinforced by the largest, one-piece, panoramic sunroof in this MPV class. Stretching from the windscreen head to beyond the B pillars, the sunroof is 1160mm long, 1180mm wide and features an electrically powered lamella blind which may be opened to any point within the length of the sunroof.



Toyota Easy Flat-7 Seating

Offering 32 different seating permutations and already acknowledged as one of the most practical, flexible and intuitive seating designs available, the *Verso's* 'Toyota Easy Flat-7' system had been substantially revised to benefit from the new MPV's 30mm increase in wheelbase length. Providing individual seats in both second and third rows, it offers simplified operability, a larger seat sliding range, more legroom and improved seat comfort throughout.

Height adjustable front seats benefit from improved shoulder support and a seat base that has been lengthened by 20mm. The height of the seat cushion has been raised by 40mm which, combined with reach and rake adjustment to the steering wheel, offers drivers of all sizes an ideal driving position with significantly improved visibility.

Accessed through rear door openings of identical size to those in front, the second row seats also benefit from improved cushioning and support. Second tier sliding distance has been increased by 30mm, to both improve legroom and third row access, and each of the three middle row seats may be independently moved over 195mm, and memory function returns each backrest to its previously selected angle.

Benefiting from a new, low profile headrest design which eliminates the need to remove headrests at any time, all second and third row seats may be individually folded flat. Third row folding has been simplified through a one-handed, single-action pull-strap mechanism, and third row seatbacks also now include reclining pitch adjustment for added comfort.



Loadspace and Storage

Completely flat with second and third row seats folded, the new Verso's loadspace has been extended in length by 185mm to 1830mm, and widened by 240mm to 1585mm. With all three seating rows in place, luggage volume has increased from 63 to 155 litres, amongst the best in segment.

Beneath the rear loadspace, a new, Trunk Management system is ideal for storing valuable items out of view. Its capacity varies according to five or seven seat usage, and the choice of full-size or emergency spare wheel. This space also provides storage for the luggage tonneau cover when not in use.

As befits a true Multi-Purpose Vehicle, the new Verso offers a comprehensive range of storage compartments including a twin compartment glovebox featuring a cooled upper section large enough to hold a 1.5 litre bottle and an 8.2 litre lower section. It also has a spacious centre console box, generous door pockets, seat back storage beneath aviation-style, fold out tables with integral cupholders, a drawer beneath the front passenger seat, second row underfloor storage, an overhead console and driver and passenger pockets for mobile phone and MP3 player storage.

Noise, Vibration and Harshness

Particular attention has been paid to the minimisation of Noise, Vibration and Harshness intrusion into the cabin of the new Verso, resulting in a vehicle which not only offers best-in-class NVH properties for a C-segment MPV, but also matches those of many D-segment passenger cars.

In addition to the use of traditional acoustic damping techniques, the new Verso features the world's first application of a two-piece upper and lower liner on the cabin side of the bulkhead, the density of which is optimised only at the most critical points, thus minimising unnecessary weight gain. A second acoustic liner on the engine side of the bulkhead combines with under-bonnet insulation to further reduce engine noise intrusion.

Tuned floor silencing panels have been installed beneath the seats and in the spare wheel well, and the new Verso also introduces Toyota's first application of a new acoustic material with an isolation film that combines insulation and absorption of noise in the foot wells.

Dashboard vibration has been minimised through cruciform bracing which ties the instrument panel structure to the 'A' pillar, cross car beam and floor. A second beam, bracketed to the floor, runs across the car beneath the rear seats. In addition, fender liners and resin rocker mouldings help reduce stone chip clatter, and an insulator between the 'A' pillar and the inner wing further isolates the cabin from noise intrusion.

In conjunction with a comprehensive aerodynamics package which awards the new Verso a class-leading drag coefficient of just Cd 0.295, these extensive NVH measures combine to reduce cabin noise by a significant 2.5dBA over the previous model.





Minimise & Maximise

Toyota Optimal Drive technology

- **Toyota Optimal Drive technology applied to the full engine range**
- **Engine power increased by up to 20%, CO₂ emissions and fuel consumption reduced by up to 12%**
- **New 6-speed manual and Multidrive S transmissions**
- **New automatic transmission for 2.2 D-4D 150 diesel engine**
- **All diesel engines meet EURO 5 standards when fitted with DPF or Toyota D-CAT**

Toyota Optimal Drive showcases a combination of wide-ranging advanced technologies and internal improvement programmes designed to optimise the balance of performance and driving enjoyment with fuel economy and low emissions.



These diverse core technologies focus on three key aspects of powertrain development:

Firstly, the reduction of powertrain weight through the use of super-lightweight and highly compact engine components and transmissions.

Secondly, the minimisation of mechanical losses through the adoption of Valvematic – a further development of VVT-i, new roller rocker technology, smaller, lighter pistons, low viscosity oil and new, manual and Multidrive S transmissions.





Minimise & Maximise

And thirdly, the maximisation of combustion efficiency. This has been achieved within the **Verso** petrol engine range through the adoption of high, 11.5:1 compression ratios, the refinement of intake port and combustion chamber design, and the introduction of piston cooling by oil jet. All new **Verso** diesel units benefit from an upgraded fuel injection system.

The new **Verso** is the ninth model to benefit from Toyota Optimal Drive. A five engine line-up features 126DIN hp 2.0 litre, and 150 and 177DIN hp 2.2 litre examples of Toyota's D-4D turbodiesel technology, as well as 1.6 and 1.8 litre Valvematic petrol units offering class-leading power and CO₂ emissions.

Mated to a new, 6-speed manual transmission, the new 1.6-litre Valvematic develops 132DIN hp, 22DIN hp more than the 1.6 VVT-i unit it replaces, whilst torque has been increased by 10 Nm to 160 Nm at 4400 rpm. Conversely, CO₂ emissions have been reduced by 20g to 158g/km and combined fuel consumption is a frugal 6.7l/100km.

The new 1.8 litre Valvematic affords similar power increases over its 1.8 litre VVT-i predecessor. Power has been increased by 18DIN hp to 147DIN hp, and torque boosted by 10Nm to 180Nm at 4400 rpm. The engine may be mated to a new 6-speed manual transmission or a new Multidrive S transmission, an example of Toyota's latest continuously variable transmission technology. Equipped with 6-speed manual transmission, the engine's CO₂ emissions have been reduced by 22g to 162g/km and combined fuel consumption is only 6.9l/100 km. When combined with the Multidrive S, CO₂ emissions are 164g/km and fuel consumption is 7.0l/100km.

The next generation **Verso** diesel engine range features a newly available 2.0 D-4D turbodiesel, available with a Diesel Particulate Filter (DPF). Mated to a 6-speed manual transmission, it delivers 126DIN hp and 310 Nm of torque from 1800 to 2400 rpm. CO₂ emissions are as low as 140g/km on units fitted with a Catalytic Converter, and 146g/km on those with a DPF. The **Verso** 2.0 D-4D 7-seater has the best-in-class CO₂ emission levels for the 110-140DIN hp range, the core of the C-MPV segment.

The revised 2.2 D-4D diesel engine block now delivers 150DIN hp, and 340 Nm of torque between 2000 and 2800 rpm. This engine features a new 6-speed automatic transmission and Toyota Diesel-Clean Advanced Technology (Toyota D-CAT), delivering CO₂ emissions of 178g/km and fuel consumption of 6.8 l/100km.

Carried over from the previous model range, a second 2.2 D-4D turbodiesel, also available with a 6-speed manual transmission, delivers 177DIN hp and 400Nm from 2000 to 2800 rpm. CO₂ emissions have been reduced by 19g to 159g/km.

All diesel engines meet EURO 5 standards when fitted with DPF or Toyota D-CAT.

Driving Dynamics

- **Longer wheel base, and front and rear track, for enhanced stability**
- **Class-leading aerodynamics with Cd 0.295 for improved stability, body control and acoustic comfort**
- **Revised suspension geometry for improved ride comfort, agility and noise suppression**
- **Electric Power Steering with active steering force compensation**
- **Improved braking system with reduced stopping distances**

With an all-new, high-rigidity body shell offering improved torsional stiffness, a longer wheelbase, increased front and rear tracks and extensively revised suspension geometry, the new **Verso** has been designed to offer all the agile handling, body control, stability and ride comfort of a conventional passenger car.

Class-leading Aerodynamics

With a class-leading drag coefficient of just Cd 0.295, the new **Verso**'s carefully considered aerodynamic design is fundamental to body control, high speed stability and the reduction of wind noise.

Particular attention has been paid to the flow of air beneath the car. A smooth underfloor, wheel spats and wing-shaped vertical fins to the rear all contribute to the control of vertical body movement and the optimisation of both front and rear lift coefficients. The result is a flatter straight line ride, a more controlled yaw response, and enhanced rear stability, most notably in cross-winds.

Revised Suspension

A re-engineered MacPherson strut front suspension system now features dual top mounts: a stiffer, outer mount locating the spring and a softer inner mount locating the damper. Combined increases in both caters angle and roll rigidity, the dual mount format combines optimum handling with low noise transmission and first class ride comfort.

Chosen for its compact, lightweight design offering minimal intrusion into the loadspace, the rear torsion beam suspension system with integral anti-roll bar has also been revised. The trailing arm angle has been optimised to enhance steering response, whilst separating the spring and damper mounts has improved packaging efficiency, ride comfort and handling.

Electric Power Steering

A first for Toyota in Europe, the variable assistance Electric Power Steering now features active steering force compensation. If the system detects a steering input speed too high for the required vehicle response, it will automatically reduce power assistance delivery to limit steering input and, hence, promote smoother driving.

In addition, when the steering column torque sensor detects vibration from the wheels, an active vibration control programme within the ECU can produce a compensating signal to reduce the vibration before it reaches the steering wheel.

Brakes and Tyres

The new **Verso** is equipped with the latest ABS and ESP braking and stability systems which incorporate Electronic Brakeforce distribution (EBD) and Brake Assist to promote significantly reduced stopping distances.

Helping further shorten stopping distances, the **Verso**'s tyres have been chosen for low rolling resistance to lower fuel consumption, whilst their reduced vertical stiffness further improves ride comfort.



Safety

- Design to achieve Euro NCAP 5-star crash test rating
- ABS with EBD, Brake Assist, VSC+ incorporating Steering Torque Control, TRC and Hill-start Assist
- Seven airbags, including full length, three seating tier curtain airbags
- Energy absorbing pads for improved second and third row occupant safety
- Improved pedestrian impact safety

With upgraded active, passive and pedestrian impact safety features and a highly rigid, impact absorbing body shell incorporating an increased percentage of high tensile steel, the *Verso* is designed to achieve a maximum, 5-star rating in the more stringent Euro NCAP crash test programme.

Active Safety

The new *Verso* may be equipped with the full range of active safety systems, including a latest generation Anti-lock Brake System (ABS) with Electronic Brake force Distribution (EBD) which takes into account road conditions, speed, load and bodyshell dynamics to automatically distribute braking forces more effectively.

Brake Assist (BA) monitors brake pedal depression speed to determine whether an emergency-braking manoeuvre is intended. If the driver applies insufficient braking force yet the system recognises the need for emergency braking, it will automatically increase the hydraulic pressure in the system to optimise braking efficiency.

Vehicle Stability Control plus (VSC+), incorporating Steering Torque Assist, counteracts understeer or oversteer by independently applying appropriate braking force to any of the four wheels, whilst simultaneously applying counter-steering torque to help the driver stabilise the vehicle.



A Traction Control System (TRC) contains wheel spin on low or split surfaces, whilst Steering Torque Assist further helps to counter yaw moments under braking and acceleration.

Hill-start Assist Control (HAC) increases vehicle control on steep upgrades when stopping and starting on slippery surfaces. The HAC system is designed to help prevent the vehicle from rolling backward as the driver's foot moves from brake to throttle pedal when pulling away on a gradient.

Passive Safety

The new **Verso** is fitted with seven airbags, as standard: driver and front seat passenger front and side airbags, a front passenger knee airbag, and side curtain airbags that now extend the full length of the cabin, incorporating the third seating row.



The front seats are equipped with cable-operated anti-whiplash headrests, and there is a seat belt reminder in the instrument binnacle for all seats. In addition, driver and front passenger energy absorbing pads are built into the front foot wells to reduce lower leg injuries.

Side impact shock is channelled across the car's floor pan and roof strengthening beams whilst, a first for Toyota, energy absorbing pads are fitted at the rear door belt line and the rear passenger's hip-point to reduce injuries. A high resistance seat rod located beneath the rear seats and secured on each side of the cabin by aluminium and resin hybrid stiffeners further helps to absorb side impacts and reduce injuries to the rear seat occupants.

Pedestrian Impact Safety

The new **Verso**'s bonnet features an energy absorbing structure and a crushable cowl at its rear edge. Significantly, the wiper motor and attendant linkage has also been relocated lower on the firewall, allowing for a longer impact stroke if a pedestrian is hit.

Furthermore, the bonnet hood lock is well distanced from the upper bonnet surface, the vehicle front incorporates upper and lower leg impact absorbers, and additional absorbers located where the rear edge of the bonnet meets the upper fender are designed to further mitigate pedestrian impact injuries.

Model Grade and Equipment Specification

Available in Entry, Mid, High and High Plus model grades, the new **Verso** offers a comprehensive standard equipment specification, even on entry level models. All grades benefit from the Toyota Easy Flat-7 seating flexibility system.

Verso

The entry grade Verso is equipped with: 7 airbags (including side airbags for the third row seats), front active headrests, Vehicle Stability Control plus (VSC+) and Hill-start Assist Control (HAC), LED rear lamps and welcoming puddle lights, a CD/MP3 compatible stereo with 4 speakers and automatic door locking. Further features to enhance comfort and convenience include an overhead storage console, 2nd row under floor storage, a loadspace management system and a conversation mirror enabling drivers to establish eye contact with rear passengers. Options on this grade include front fog lamps and driver/passenger seat heating.

Verso Luna

To the comprehensive Verso grade specification, Verso Luna grade adds manual air-conditioning, front fog lamps, a leather steering wheel and gear lever, rear electric windows, a CD/MP3 compatible stereo with 6 speakers and Bluetooth

connectivity, a bespoke seat trim, and passenger seat under tray and second row aviation tables. Further comfort and convenience features include a cooled glovebox, a middle console box, a larger armrest and a rear 12v plug. Options include cruise control with speed limiter (not available with the Multidrive S transmission), dual-zone automatic air-conditioning, entry level full-map navigation with DVD, panoramic sunroof and 16" alloy wheels.

Verso Sol

To the Verso Luna grade specification, the Verso Sol grade adds dual-zone automatic air conditioning, 16" alloy wheels, cruise control with speed limiter, rear view camera display (shown within the rear view mirror), smart entry with push start button, rain and dusk sensors and a seat trim upgrade. Further comfort and convenience features include door courtesy lamps, integrated sunshades for rear side windows and driver/passenger seat heating. Options include a more advanced full-map navigation system with a 10 Gb hard disk drive (incorporating rear parking camera), panoramic sunroof, privacy glass and 17" alloy wheels.

To the Verso Sol grade, **Verso Premium** grade adds 17" alloy wheels, an in-dash 6 CD changer, High-Intensity Discharge headlamps with auto levelling and cleaning, a panoramic sunroof and rear privacy glass. Options include an advanced full-map navigation system with a 10 Gb hard disk drive (incorporating rear parking camera).



Specifications

Engine	1.6 Valvematic	1.8 Valvematic	2.0 D-4D 125	2.2 D-4D 150	2.2 D-4D 180
Engine code	1ZR-FAE	2ZR-FAE	1AD-FTV	2AD-FHV	2AD-FHV
Type	4 cylinders in line	4 cylinders in line	4 cylinders in line	4 cylinders in line	4 cylinders in line
Engine block material	Aluminium alloy	Aluminium alloy	Aluminium alloy	Aluminium alloy	Aluminium alloy
Fuel type	95 Octane petrol	95 Octane petrol	48 Cetane diesel	48 Cetane diesel	48 Cetane diesel
Injection type	EFI	EFI	Common rail Piezo injection	Common rail Piezo injection	Common rail Piezo injection
Injection pressure (MPa)	-	-	200	200	200
Valve mechanism	16-valve DOHC with VALVEMATIC	16-valve DOHC with VALVEMATIC	16-valve DOHC	16-valve DOHC	16-valve DOHC
Displacement (cm ³)	1598	1798	1998	2231	2231
Bore x stroke (mm)	80.5 x 78.5	80.5 x 88.3	86 x 86	86 x 96	86 x 96
Compression ratio (:1)	10.7	10.5	15.8	15.7	15.7
Max. power (DIN hp) kW/rpm	(132) 97/6400	(147) 108/6400	(126) 93/3600	(150) 110/ 3600	(177) 130/ 3600
Max. torque (Nm/rpm)	160/4400	180/4000	310/1800-2400	340/2000-2800	400/2000-2800
Emissions level	EURO IV	EURO IV	EURO IV (Cco) EURO V (with DPF)	EURO V	EURO V

Transmission	1.6 Valvematic	1.8 Valvematic		2.0 D-4D 125	2.2 D-4D 150	2.2 D-4D 180
Gearbox type	6-speed manual transmission	6-speed manual transmission	Multidrive S	6-speed manual transmission	6-speed automatic transmission	6-speed manual transmission
Drive type	Front wheel drive	Front wheel drive	Front wheel drive	Front wheel drive	Front wheel drive	Front wheel drive
Clutch type	Dry/ Single plate/ Diaphragm system	Dry/ Single plate/ Diaphragm system	-	Dry/ Single plate/ Diaphragm system	-	Dry/ Single plate/ Diaphragm system
Gear ratios	1st 3.538	3.538	3.538	3.818	3.300	3.538
	2nd 1.913	1.913	1.913	1.913	1.900	1.913
	3rd 1.392	1.392	2.386–0.411	1.218	1.420	1.218
	4th 1.029	1.029	1.029	0.860	1.000	0.880
	5th 0.875	0.818	0.818	0.790	0.713	0.809
	6th 0.743	0.700	0.700	0.673	0.608	0.638
	Reverse 3.333	3.333	2.505	4.139	4.148	3.831
Differential gear ratio	4.562	4.562	5.698	4.058 - 3.450	3.685	4.058 - 3.450

Performance	1.6 Valvematic	1.8 Valvematic		2.0 D-4D 125	2.2 D-4D 150	2.2 D-4D 180
Transmission type	6-speed manual transmission	6-speed manual transmission	Multidrive S	6-speed manual transmission	6-speed automatic transmission	6-speed manual transmission
Max. speed (km/h)	185	190	185	185	195	210
0-100km/h (s)	11.7	10.4	11.1	11.3	10.1	8.7
0-400m (s)	17.9	17.1	17.9	17.8	17	16.4

Fuel consumption	1.6 Valvematic		1.8 Valvematic			2.0 D-4D 125		2.2 D-4D 150	2.2 D-4D 180
Transmission	6-speed manual transmission		6-speed manual transmission		Multidrive S	6-speed manual transmission		6-speed automatic transmission	6-speed manual transmission
Hand Drive	Left	Right	Left	Right	All	Left	Right	All	All
Combined (l/100km)	6.7	6.8	6.9	7	7	5.4 (DPF 5.5)	5.5 (DPF 5.7)	6.8	6
Extra urban (l/100km)	5.6	5.7	5.7	5.8	5.9	4.5 (DPF 4.7)	4.6 (DPF 4.8)	5.8	5.2
Urban (l/100km)	8.6	8.7	8.9	9.1	8.7	7.0 (DPF 7.1)	7.1 (DPF 7.2)	8.4	7.4
Fuel tank capacity (l)	60	60	60	60	60	60	60	60	60

Exhaust emissions		1.6 Valvematic		1.8 Valvematic			2.0 D-4D 125		2.2 D-4D 150	2.2 D-4D 180
Transmission		6-speed manual transmission		6-speed manual transmission		Multidrive S	6-speed manual transmission		6-speed automatic transmission	6-speed manual transmission
Hand Drive		Left	Right	Left	Right	All	Left	Right	All	All
CO ₂ (g/km)	Combined	158	161	162	165	164	140 (DPF 146)	143 (DPF 148)	178	159
	Extra urban	133	136	134	137	140	119 (DPF 124)	119 (DPF 126)	153	138
	Urban	203	206	210	212	205	178 (DPF 184)	184 (DPF 187)	220	195

Suspension

Front	MacPherson strut
Rear	Torsion Beam

Brakes	1.6 Valvematic	1.8 Valvematic	2.0 D-4D 125	2.0 D-4D 150	2.2 D-4D 180
Type	Front: Ventilated disc / Rear: Drum-in solid disc				
Front disc size (mm)	Ø 295x26	Ø 295x26	Ø 295x26	Ø 320x26	Ø 320x26
Rear disc size (mm)	Ø 297x11	Ø 297x11	Ø 297x11	Ø 297x11	Ø 297x11
Additional features	ABS, BA, VSC+, TRC, HAC	ABS, BA, VSC+, TRC, HAC	ABS, BA, VSC+, TRC, HAC	ABS, BA, VSC+, TRC, HAC	ABS, BA, VSC+, TRC, HAC

Steering	1.6 Valvematic	1.8 Valvematic	2.0 D-4D 125	2.0 D-4D 150	2.2 D-4D 180
Type	Rack & pinion				
Ratio (:1)	15.8 (16 inch wheel) / 16.0 (17 inch wheel)				
Turns (lock to lock)	3.15 (16 inch wheel) / 3.05 (17 inch wheel)				
Min. turning radius – tyre (m)	5.4 (16 inch wheel) / 5.6 (17 inch wheel)				

Exterior dimensions		
Overall length (mm)		4440
Overall width (mm)		1790
Overall height (mm)		1620 / 1630 (17 inch alloy wheel)
Wheelbase (mm)		2780
Tread (mm)	Front	1535
	Rear	1545
Overhang (mm)	Front	915
	Rear	745
Drag coefficient (Cd)		0.295 (0.297 for Petrol)

Interior dimensions		
Seating capacity (persons)	5-seater / 7-seater	
Length (mm)	2385	
Width (mm)	1520	
Height (mm)	1260 (1220 with panoramic sunroof)	
Headroom (mm)	Front	115
	2nd row	75
	3rd row	15
Hip-point distance (mm)	Front, side to side	705
	Front to 2nd row	975
	Front to 3rd rows	1610
Front hip-point height (mm)	640	

Luggage compartment		2nd and 3rd row seats up	2nd row up/3rd row stowed	2nd and 3rd row stowed
VDA capacity, loaded to seat back (l)	5-seater		484	1026
	7-seater	155	440	982
VDA capacity, loaded to roof (l)	5-seater		743	1689
	7-seater	198	699	1645

Luggage compartment	5-seater	7-seater
Length (mm)	1575	1575
Width (mm)	1585	1585
Height (mm)	765	765
Loading height (mm)	675 (16 inch wheel)	675 (16 inch wheel)

Weights		1.6 Valvematic	1.8 Valvematic		2.0 D-4D 125	2.2 D-4D 150	2.2 D-4D 180
Transmission type		6-speed manual transmission	6-speed manual transmission	Multidrive S	6-speed manual transmission	6-speed automatic transmission	6-speed manual transmission
Kerb weight (kg)	5-seater	1420 – 1505	1420-1505		1540 - 1625	1595 - 1650	1575 - 1635
	7-seater	1440 – 1505	1440 – 1505	1470 – 1525	1560 - 1625	1615 - 1650	1615 – 1650
Gross vehicle weight (kg)		2125	2125		2260	2260	2260
Towing capacity (kg)	With brakes	1300	1300	1300	1300	1300	1300
	Without brakes	450	450	450	450	450	450

disclaimer

1. The fuel consumption and CO₂ values are measured in a controlled environment, in accordance with the requirements of Directive 80/1268/EEC incl. its amendments, on a basic production vehicle. For further information about the basic production vehicle, please contact your local PR-officer.
2. The fuel consumption and CO₂ values of your vehicle may vary from those measured. Driving behaviour as well as other factors (such as road conditions, traffic, vehicle conditions, installed equipment, load, number of passengers, ...) play a role in determining a car's fuel consumption and CO₂ emissions.

New Prius



New Prius: the most advanced expression of mass mobility

- Next generation Hybrid Synergy Drive[®], the undisputed reference point for hybrid technology
- Power increased by 22%, fuel economy improved by 14%, CO₂ emissions of just 89 g/km
- EV, ECO and POWER 'on-demand' drive modes
- Exceptionally low drag coefficient of Cd 0.25
- Ergonomic, dual-zone cockpit design with “display” and “command” zones
- High technology innovations including Solar Ventilation system, Head-up and Touch Tracer displays
- Pre-Crash Safety System with Adaptive Cruise Control
- World's first injection-moulded Ecological Plastic, derived from plants for reduced product cycle CO₂



“The new generation Prius is the most advanced expression of mass mobility on the market. Prius builds on more than ten years of history and will remain the undisputed reference point for hybrid technology. Beyond confirming its environmental leadership, the new generation Prius sets new standards in terms of status, innovation, design and driving pleasure. The new Prius will further enhance the appeal of the Toyota brand by creating affinity with an even broader audience.”

Andrea Formica, Senior Vice President, Toyota Motor Europe.

The first generation Prius was the world's first mass-produced hybrid vehicle. Launched in Japan in 1997 and in Europe in 2000, the unique Toyota hybrid established a major industry milestone in vehicle powertrain development and sustainable mobility.

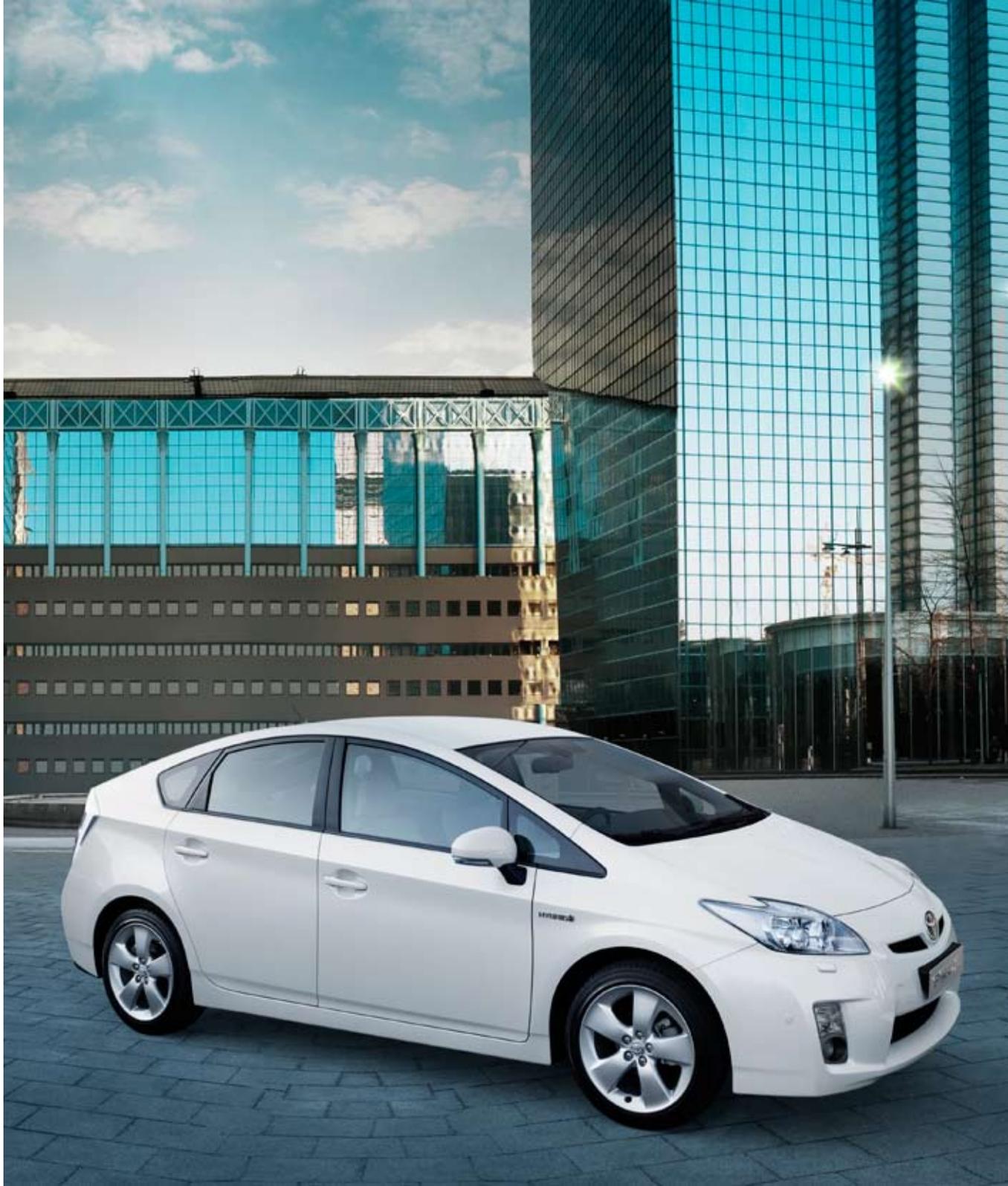
The name **Prius**, 'to go before' in Latin, became symbolic of a car that was launched even before environmental awareness had become a mainstream social issue.

Anticipating the 21st century's need for vehicles of exceptional fuel efficiency, successive generations of **Prius** have showcased Toyota's commitment to environmentally-conscious forward thinking, and lead the company's drive towards the creation of the ultimate eco-car.

Representing an unparalleled synergy of high technology and ecological responsibility in powertrain design, Toyota's full hybrid, series/parallel Hybrid Synergy Drive® system has been fundamental to the global success of the **Prius**. While the car itself was named 2005 Car of the Year by the European media, the Hybrid Synergy Drive® powertrain was dubbed International Engine of the Year in 2004, and has been awarded the title Green Engine of the Year for the last five consecutive years.

Today, the new **Prius** remains the undisputed reference point for mass-mobility hybrid technology, setting new standards in innovation, design and driving enjoyment. Its next generation Hybrid Synergy Drive® system features comprehensive improvements to the award-winning powertrain. 90% of the hybrid drive components have been redesigned to create a lighter, more compact system, with a focus on the delivery of increased power, further reductions in real-life fuel consumption and improved cold weather operation. System power has been increased by 22%, fuel economy improved by 14%, and CO₂ emissions reduced to just 89 g/km.

The third generation **Prius** should not, however, be seen as a niche model to be evaluated only against specialised criteria. Despite delivering CO₂ emission levels below A and B segment cars, its on-road performance and dynamic abilities bear comparison with any D-segment competitor. And continued customer approval is exemplified through the **Prius**' top ranking in JD Power's German, French and UK customer satisfaction surveys for the last two years.



Within a striking, ECO-ICON concept vehicle-inspired design boasting an exceptionally low drag coefficient of Cd 0.25, the new Toyota's ergonomically advanced interior features an innovative, dual-zone dashboard design and numerous segment-unique driver assistance technologies including a head-up display, a unique 'touch tracer' vehicle information access system, a solar powered ventilation system and an Intelligent Parking Assist system.

Global sales figures continue to reflect the Toyota Prius' status as the world's most technologically and environmentally advanced mass-mobility car. By the end of 2008, cumulative worldwide sales of the planet's most popular hybrid vehicle have exceeded 1.2 million units, while European sales of the Prius stand at almost 130000.

Despite increased competition, Prius sales have clearly accelerated in recent years, with more than 41,000 units being sold in Europe in 2008 alone. With a target of 60,000 sales in 2010, European Prius sales will make a strong contribution to Toyota's target of achieving worldwide annual sales of one million Hybrid Synergy Drive® vehicles by early 2010s. Toyota plans to sell the new generation Prius in 80 countries worldwide, nearly doubling the existing, 44 country markets.



Next Generation Hybrid Synergy Drive®

- Full hybrid, series-parallel system architecture
- 90% component redesign for a lighter, more compact and efficient hybrid drive system
- Fuel economy and CO₂ emissions improved by 14%, power increased by 22%
- CO₂ emissions of just 89 g/km
- New 1.8-litre VVT-i Atkinson cycle petrol engine with cooled Exhaust Gas Recirculation
- EV, ECO and POWER 'on-demand' drive modes
- Eco Drive Monitor for more fuel-efficient driving

Named International Engine of the Year in 2004 and Green Engine of the Year for the fifth consecutive year in 2008, Toyota's Hybrid Synergy Drive® represents the ultimate synergy of high technology and environmentally-conscious forward thinking in powertrain design.



The new Prius' next generation Hybrid Synergy Drive® system features comprehensive improvements to this award-winning powertrain. 90% of the hybrid drive components have been redesigned to create a lighter, more compact system with a focus on delivering increased power, further reductions in real-life fuel consumption and improved cold weather operation.

System power output has been increased by 22%, from 110 to 136DIN hp. Offering performance to match any conventional 2.0 litre vehicle, the new Prius will accelerate from 0-100km/h in 10.4 seconds.

At the same time, overall fuel economy has been improved by 14%, the Prius returning only 3.9l/100 km in the combined cycle. In addition, the adoption of a larger, 1.8 litre engine reduces rpm during high speed driving for a 10% gain in long-haul cruising fuel efficiency.

The new Prius easily exceeds Euro 5 emissions standards, producing CO₂ emissions of just 89 g/km, and zero emissions when operating in EV mode at speeds of up to 50km/h.



Hybrid Synergy Drive® System Components

Unlike parallel, or 'mild' hybrids -which employ supplementary electric motor power purely to boost petrol engine performance- or series hybrids -which rely on electric motor power alone to drive the wheels- the new Prius is a full hybrid capable of operating in petrol and electric modes alone, as well as a combination of both.

Hybrid Synergy Drive® delivers the energy-saving benefits of a series hybrid combined with the performance benefits of a parallel hybrid, equipping the new Toyota with impressive, seamless acceleration and remarkably quiet operation, yet returning class-leading fuel efficiency and the lowest possible emissions.

The next generation Hybrid Synergy Drive® series/parallel hybrid system features a 1.8 litre petrol engine, a powerful electric motor, a generator, a high performance battery, a power control unit, and a power split device which employs a planetary gear set to combine and re-allocate power from the engine, electric motor and generator according to operational requirements.

Key to the successful installation of Hybrid Synergy Drive® within the Prius' front-engined platform, the electric motor, generator and power split device are all housed in one lightweight, highly compact transmission casing directly comparable in size to that of a conventional gearbox. The new transaxle itself is smaller, 20 kg lighter, and benefits from a 10-20% reduction in drive shaft energy losses.

1.8-litre Atkinson cycle petrol engine

60 kW electric motor

High output battery



1.8 Litre Atkinson Cycle Engine

A new, 4-cylinder, 1.8 litre Atkinson cycle petrol engine replaces the 1.5 litre unit of the current Prius. Generating 98DIN hp at 5200 rpm and 142 Nm of torque at 4000 rpm, the new engine delivers higher torque at lower revolutions –a reduction of 300 rpm at 120km/h- combining quieter running with a 10% improvement in long distance cruising fuel economy.

Combined with a new cooled Exhaust Gas Recirculation system, the adoption of the Atkinson cycle offers significant gains in fuel efficiency and the reduction of emissions.

Because the intake valves close late in an Atkinson Cycle engine, compression is delayed. This creates a high expansion ratio for less compression, reducing intake and exhaust energy losses and converting combustion energy to engine power more effectively. As a result, the exhaust temperature is lower than that of conventional engines. Cooled Exhaust Gas Recirculation reintroduces cooled exhaust gas into the intake system, further reducing engine operating temperatures.

Together, these technologies minimise situations when the cooling effect of ‘fuel enrichment’ is necessary to protect the catalytic converter from overheating damage, thereby improving fuel economy and lowering emissions.

Improving cold weather fuel economy and cabin comfort, a new engine heat management system combines a heat recovery system with an electric water pump. To reduce mechanical losses, an electric system replaces the water pump drive belt. As a result the coolant flow rate can be controlled with greater precision, contributing to greater fuel efficiency.

60 kW Electric Motor

Working in tandem with the petrol engine to improve acceleration and powering the driven wheels alone when the Prius is operating in EV mode, a new 60kW electric motor offers a 20% increase in power and a 33% reduction in size over that of the current Toyota hybrid.

During deceleration and under braking, the electric motor acts as high-output generator to effect regenerative braking, optimising energy management in the Hybrid Synergy Drive® system by recovering kinetic energy (normally wasted as heat under braking and deceleration) as electrical energy for storage in the high performance battery.

Power Control Unit

The Hybrid Synergy Drive® power control unit consists of a voltage boost converter, an inverter and a DC/DC converter, controlled by a motor control ECU which receives commands from the hybrid vehicle control ECU.

A new, 36% lighter, 37% more compact inverter has faster switching for improved efficiency, and now converts the battery’s direct current into a higher, 650 (+150 volt) volt alternating current to drive the electric motor and, occasionally, the generator, offering significantly improved PCU performance.

High Output Battery

Using proven and reliable nickel-metalhydride technology, the Hybrid Synergy Drive® battery output has been increased to a maximum of 27kW (+2kW) to allow the new Prius to operate in EV mode, driving under electric motor power alone.

The battery itself has been further reduced in size to minimise impact on cabin accommodation and a significant increase in fan capacity has improved cooling system efficiency.

Three On-Demand Drive Modes

Supplementing the new Prius' seamless, e-AT intelligent electronic transmission, three alternative, 'on-demand' drive modes may be selected to further increase driving efficiency, performance and fuel economy.

From start-up and at speeds of less than 50km/h the new Prius automatically operates in EV mode, driving under electric motor power alone. The driver may also select EV mode manually. This unique driving mode is not available to drivers of mild hybrid vehicles, requiring the full hybrid technology of Hybrid Synergy Drive®. With vehicle range dictated by battery charge, the EV drive mode allows for urban driving with minimal noise and zero emissions. Because the petrol engine is switched off throughout its operation, the EV drive mode contributes to a significant reduction in the new Prius' overall fuel consumption.

In ECO mode, throttle response to aggressive accelerator pedal inputs is reduced and air-conditioning control optimised for improved fuel economy. Depending on driving conditions, the ECO mode can help drivers achieve a 10% -15% reduction in fuel consumption.

A POWER mode also modifies the response of the Prius to throttle inputs, here boosting power to improve acceleration and enhance driving pleasure.

Eco Drive Monitor

Supported by a range of four instrument binnacle displays, the Eco Drive Monitor has been developed to help drivers maximise the fuel efficiency of Toyota's Hybrid Synergy Drive® system.

An Energy Monitor displays the current operating conditions of the engine and the flow of electric power. Operating in real time, this monitor helps the driver to understand the basic energy flow of the Hybrid Synergy Drive® system.

A Hybrid System Indicator displays real-time accelerator use, helping the driver to modify his throttle inputs and driving style for maximum fuel efficiency.

A 1min/5min Consumption monitor displays fuel consumption and energy recovery results in one and five minute intervals, providing drivers with instant feedback on the fuel, efficiency of their driving style.

A Past Record monitor displays trip computer mileage and average fuel consumption records.



Improved Driving Dynamics

Allowing drivers to fully exploit the improvements to the next generation Hybrid Synergy Drive® powertrain, the new Prius is built on an all-new platform which features extensive revisions to the geometries of the MacPherson strut front and torsion beam rear suspension systems.

Further front suspension improvements include increased roll stiffness and caster angle to give a more natural steering feel. In combination, these revisions have significantly enhanced the driving dynamics of the new Prius, offering marked improvements in handling agility, stability and ride comfort.

Exterior Design

- **Faithful interpretation of ECO-ICON design concept**
- **Exceptionally low drag coefficient of Cd 0.25**
- **Improved front and rear visibility**
- **Higher roofline for improved rear passenger headroom**

Instantly recognisable as the latest version of Toyota's remarkable hybrid, the third generation [Prius](#) draws strongly on the styling cues of the ECO-ICON design concept.

In order to fully benefit from the new [Prius](#)' light-weight construction and Hybrid Synergy Drive® powertrain, the distinctive exterior design focuses on maximising aerodynamic efficiency to further improve fuel economy.

Maintaining the characteristic, sweeping monobox profile of the [Prius](#), particular attention has been paid to the minimisation of panel gaps, the smooth profiling of door and glazing seals, and the aerodynamic efficiency of the door mirrors, door handles and rear spoiler, as well as the vehicle underbody. Even the lamp clusters and front air intakes have been painstakingly detailed to optimise airflow and minimise wind turbulence.

The result is one of the world's most aerodynamic mainstream vehicle, the [Prius](#)' already excellent coefficient of drag improving from Cd 0.26 to Cd 0.25.

Significant improvements have been made to the car's proportions and packaging. The overall length has been increased by 15mm to 4460mm, all of which is accounted for by the lengthening of the front overhang. The wheelbase length remains the same. Width has been increased by 20mm to 1745mm, helping to give the car better stability and a more robust, dynamic stance. To maintain aerodynamic efficiency the overall height has been kept at 1490mm, but the highest point of the roof has been moved backwards, helping to improve rear passenger headroom by 12mm.

Further dynamism has been added to the design through the moving forward of the A pillar to increase the rake of the windscreen. The resultant increase in size of the front quarterlight improves visibility, whilst the extended rear roofline also improves rear visibility.

Hybrid blue Toyota badging identifies the presence of Hybrid Synergy Drive® within the [Prius](#), and three new hybrid-specific exterior colours have been introduced, White Pearl, Abyss Grey and Dark Blue, bringing the total number available to seven.

The third generation Toyota [Prius](#) is available with a choice of bespoke, 15" or 17" alloy wheels, both featuring low roll-resistance tyres.



Interior Design

- **Ergonomic cockpit, with “display” and “command” zones**
- **New front seats for increased comfort**
- **Extensive storage, increased boot space**

The dominant feature of the third generation Prius' all-new interior is a dual-zone dashboard designed to both minimise the need for driver eye movement while viewing vehicle information and provide ergonomically superb functionality of all controls and switchgear.

The upper, 'display zone' focuses on the combination of a new head-up display and a rebated centre meter cluster positioned at an ideal distance for at-a-

glance reading of vehicle status information. As well as vehicle speed and other conventional instrumentation, the LED meter also incorporates the ECO Drive Monitor, which gives access to the Energy Monitor, Hybrid System Indicator, 1min/5min Consumption and Past Record displays.

Characterised by a distinctive 'bridge' construction which not only places the transmission lever within the closest possible reach of the driver's hand but also creates a generous additional storage compartment below, the lower 'command zone' focuses on the full-colour multi-information display screen, placing the control of air-conditioning, audio and satellite navigation systems within easy reach of the driver.



A new front seat design offers improved comfort and adjustability. The seat adjustment range has been improved in every dimension; base sliding distance has been increased by 20mm to 260mm and, via a side lever redesigned for easier operation, height adjustment has been increased by 15mm to 60mm. Despite boasting more efficient lumbar support, the seat back structure has been reduced in thickness by 35mm to increase rear passenger knee room, and the front seats now feature active headrests for improved rear collision protection.

Benefitting from improved legroom and a 15mm increase in headroom, the rear seats now feature integrated headrests offering drivers improved rear visibility.

There is extensive storage throughout the new interior, including upper and lower glove boxes with 3.0l and 6.0l capacities respectively, a console tray located under the dashboard 'bridge' and a centre arm rest box with a 3.7l capacity, containing a 12 V power source and an audio input mini-jack socket.

In addition, the luggage compartment has been increased by 30 litres, due to re-packaging of the more compact Hybrid Synergy Drive® battery pack.





High Technology Innovations

- Solar ventilation system
- Head-up display for line-of-sight vehicle information
- Touch Tracer display
- Extensive use of Light Emitting Diode (LED) technology
- Pre-Crash Safety System with Adaptive Cruise Control
- Intelligent Parking Assist System
- World's first ecological plastic, derived from plants for reduced product cycle CO₂

Already a benchmark in automotive powertrain development, the third generation Prius also introduces numerous high-technology innovations and active safety features to the D segment for the first time.

Solar Powered Ventilation

A solar powered ventilation system prevents the interior air temperature from rising whilst the Prius is parked. Integral to an optional, sliding, glass sunroof, solar panels located at the rear of the glazing power an electrically operated air circulation fan without the need for the engine to run. The world's first solar powered ventilation to function on battery power alone, the system reduces the cool-down time when the driver returns to the Prius, minimising the use of air-conditioning during vehicle start-up.

Integral to the new solar powered system, the air-conditioning itself may be remotely operated via the key fob, allowing the driver to cool the Prius interior for up to three minutes before the start of a journey.

Head-up Display

A new Head-up Display will be fitted, as standard, across the Prius range. The Head-up Display projects key vehicle information onto the base of the windscreen enabling the driver to read it without taking his or her eyes off the road. Displayed information includes vehicle speed, the Eco Drive Monitor, Active Cruise Control status and the optional, Pre-Crash system. Prius versions equipped with satellite navigation also benefit from the head-up display of turn-by-turn and distance-to-exit information. The display can be adjusted for height and brightness, or may be switched off altogether.



Touch Tracer Control

New, steering wheel-mounted Touch Tracer switches allow the driver to control various on-board systems without the need to look down, or remove his or her hands from the wheel. As the driver touches the top of the switch, a control function layout is automatically illuminated on the centre meter cluster. The switch may then be used to select and control the audio system, the air-conditioning and the ECO Drive Support Monitor.

LED Technology

Light Emitting Diode technology is now used for the low beam headlamps, as well as the tail and stop lamps, in the new Prius. This Toyota first can reduce vehicle electricity consumption by up to 30%, further improving the performance of the Prius' Hybrid Synergy Drive® powertrain. LED lamps have a far longer lifespan than conventional halogen or High-Intensity Discharge (HID) lamps.

Pre-Crash Safety System

The Prius' Pre-Crash Safety (PCS) system sets a new benchmark for anticipatory, preventive safety in the D segment. It employs a millimetre wave radar sensor to scan the road ahead, recognising potentially dangerous objects and assisting the driver in reducing the chances of a collision.

If there is a high possibility of a collision, PCS will alert the driver and, when he begins to brake, provide braking assistance to supplement his own braking effort, simultaneously activating the seatbelt pre-tensioners.

Adaptive Cruise Control

Adaptive Cruise Control (ACC) works in tandem with the PCS system. It will automatically maintain a selected distance from the vehicle in front. Once the road ahead is clear, the Prius automatically returns to its original cruising speed.

Intelligent Parking Assist

Intelligent Parking Assist (IPA) can assist the driver of the Prius in entering either parallel or series parking places. IPA employs a rear camera and front-wing mounted ultrasonic sensors to identify viable parking spaces and then input the appropriate steering angle when either parallel or serial parking. The system controls the steering to automatically guide the vehicle into the target parking position. No steering input is required of the driver, who merely controls vehicle speed during the manoeuvre.



An improved IPA system has been fitted in the next generation Prius, offering greater ease of use and significantly reduced operation times.

Plant Derived Eco-Plastic

Toyota engineers have developed the world's first injection-moulded material to be derived from plants. Toyota plans to increase the usage of plant-derived carbon neutral plastic - known as Ecological Plastic- in future vehicles; a process begun with the next generation Prius.

There are two types of Ecological Plastic; those produced completely from plant-derived materials, and those produced from a combination of plant and petroleum-derived materials. Because plants constitute a percentage of both types, Ecological Plastic emits less CO₂ during a product's lifecycle because most of the CO₂ emitted at disposal was originally captured during photosynthesis while the plant was growing.

Plant-based foam and injection-moulded parts are found in numerous locations throughout the new Prius, including the scuff plates, deck trim and seat cushions.

Specifications

Engine	
Engine code	2ZR-FXE
Type	4 cylinders in line
Fuel type	Petrol
Fuel system	EFI
Valve mechanism	16 valve DOHC with VVT-i
Displacement (cm ³)	1798
Bore x stroke (mm)	80.5 x 88.3
Compression ratio (:1)	13.0
Max. power (DIN) KW /rpm	(98) 73/5200
Max. torque (Nm/rpm)	142/4000

Motor	
Type	Permanent magnet synchronous motor
Operating voltage (v)	650
Maximum output (kW/rpm)	60
Maximum torque (Nm/rpm)	207

Battery	
Manufacturer	Panasonic EV Energy
Type	Nickel-metal hydride
Nominal voltage (V)	201.6
Max Power (KW)	27
Capacity (Ah)	6.5

Hybrid powertrain	
Manufacturer	Toyota Motor Corporation
Type	Series-parallel layout
Torque transfer type	Planetary gear unit
Combined max. power (SAE hp)	136

Transmission	
Type	Electric Continous Variable Transmission (CVT)

Brakes	
Type	Electronically Controlled Brake system (ECB)
Front	Ventilated disc (ø 255 x 25mm)
Rear	Solid disc (ø 259 x 9mm)
Additional features	ABS
	EBD
	BA
	VSC+
	E-TRC

Steering	
Type	Rack and pinion with electric power-assist
Ratio (:1)	17.6 / 14.6*
Turns (lock to lock)	3.7 / 2.8*
Min. turning radius – tyre (m)	5.2 / 5.5*

* with 17" Alloy wheels

Suspensions	
Front	MacPherson strut
Rear	Torsion beam

Performance	
Max. Speed (km/h)	180
0-100km/h (sec)	10.4

CO ₂ emissions		
Urban (g/km)	15" tyre	90
	17" tyre	93
Extra urban (g/km)	15" tyre	86
	17" tyre	87
Combined (g/km)	15" tyre	89
	17" tyre	92

Fuel consumption		
Urban (L/km)	15" tyre	3.9
	17" tyre	4
Extra urban (L/km)	15" tyre	3.7
	17" tyre	3.8
Combined (L/km)	15" tyre	3.9
	17" tyre	4
Fuel tank capacity	45L	

Exhaust emissions	
Euro class	Euro 5

Exterior dimensions	
Overall length (mm)	4460
Overall width (mm)	1745
Overall height (mm)	1490
Wheelbase (mm)	2700
Tread (mm) front	1526
Tread (mm) rear	1522
Front overhang (mm)	905
Rear overhang (mm)	855
Drag coefficient (Cd)	0.25

Luggage compartment	
VDA luggage capacity, under parcel tray (L)	356
VDA luggage capacity, full load (L)	440
Length with rear seat up (mm)	910
Length with rear seat down (mm)	1830
Max. width (mm)	1556
Height (mm)	645

Weight	
Kerb weight (kg)	1370
Gross vehicle weight (kg)	1805

disclaimer

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New iQ 1.33



New 1.33 / 99 hp petrol engine for the incredible iQ

- New 1.33 Dual VVT-i petrol engine featuring Toyota Optimal Drive technology
- 6-speed manual transmission with new Toyota Stop & Start technology fitted as standard
- Exclusive iQ³ grade
- Maximum 5-star Euro NCAP safety award

Less than 3 metres long, the incredible **iQ** is the world's smallest 4-seater. Showcasing a revolution in compact design and ergonomic packaging, the **iQ** is the ultimate expression of refined yet environmentally friendly mobility. Practical, agile and highly manoeuvrable in urban environments, the new Toyota also offers all the long-range comfort, refinement and dynamic ability of compact segment vehicles.

iQ was launched in January with a choice of two powertrains: a 1.0 litre, 68DIN hp, VVT-i petrol engine and a 1.4 litre, 90DIN hp, D-4D turbodiesel. For customers requiring greater engine power and responsiveness, a new 1.33 litre, Dual VVT-i petrol powertrain featuring Toyota Optimal Drive technology will be available from late June 2009.

This advanced, 1.33 litre engine generates an impressive 99DIN hp and maximum torque of 125 Nm at 4400 rpm. The new powertrain may be mated to choice of two transmissions: a 6-speed manual transmission fitted, as standard, with Toyota's economical Stop and Start system, and an optional, Multidrive transmission. Multidrive delivers an incredibly smooth, step-free shift feel, while optimising the balance between performance and fuel economy.

Toyota's new Stop & Start system can reduce fuel consumption by up to 3%, depending on driving conditions. It automatically stops the engine when the shift lever is moved to the neutral position and the clutch pedal is released, enhancing fuel economy. The engine will automatically restart, within less than half a second, when the clutch pedal is depressed.

Such a rapid restart is made possible through the use of a permanently engaged gear mechanism in which the starter motor and the flywheel are linked, via a ring gear, by a one-way clutch. This maintenance-free system not only eliminates the torque limitations of a belt-driven starter motor, but also reduces engine start noise levels within the cabin, and seat vibration levels.

Equipped with the standard 6-speed transmission, the 1.33 litre **iQ** returns a frugal 4.8l/100km* in the combined cycle, while generating CO₂ emissions of just 113g/km*. Toyota's seamless, Multidrive transmission limits fuel consumption to only 5.1l/100km*, and CO₂ emissions to 120g/km*.

1.33 Dual VVT-i engined versions of the new Toyota feature an exclusive new **iQ**³ grade, with unique 16" alloy wheels and an exclusive ash grey launch colour.

Despite its highly compact dimensions, the **iQ** has been designed to offer the highest levels of occupant protection and is fitted, as standard, with a comprehensive range of active and passive safety equipment. Benefiting from a Multi-load path body structure, nine airbags and Toyota's advanced VSC+ traction control and dynamic stability technology, the **iQ** has been awarded a maximum, 5-star safety rating under the more stringent Euro NCAP test criteria introduced in January 2009.

*Subject to final homologation



Geneva Motorshow 2009/iQ



Specifications (Subject to final homologation)

Engine	1.33 Dual VVT-i
Engine code	1NR-FE
Type	4-cylinder, in-line type
Fuel type	Premium (95 RON)
Valve mechanism	16-valve DOHC, chain drive with dual VVT-i
Displacement	1329
Bore x stroke (mm)	72.5 x 80.5
Compression ratio (:1)	11.5
Max. power (DIN hp) KW /rpm	(99)73/6000
Max. torque (Nm/rpm)	125/4400
Emissions level	EURO IV

Transmission		
Type	Front wheel drive	
Engine	1.33-litre Dual VVT-i	
Operation type	6-speed M/T	Multidrive
Gear ratios	1st	3.538
	2nd	1.913
	3rd	1.310
	4th	1.029
	5th	0.875
	6th	0.743
	Reverse	3.333
Differential gear ratio	3.736	5.403

Performance		
Transmission	6-speed Manuel Transmission	Multidrive
Max. Speed (km/h)	170	170

Fuel consumption		
Transmission	6-speed Manuel Transmission	Multidrive
Combined (l/100km)	4.8	5.1

CO₂ emissions		
Transmission	6-speed Manuel Transmission	Multidrive
Combined (g/km)	113	120

disclaimer

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Environmental Leadership



Environmental leadership through Toyota Optimal Drive and Hybrid Synergy Drive®

Consistently improving the efficiency of its vehicles, Toyota is committed to addressing global environmental issues through a wide variety of research and development activities. Recognising the importance of energy diversification, Toyota is leading the drive towards sustainable mobility through the goal of the ultimate Eco Car.

The continuous development of powertrain technology is crucial to improving the environmental performance of vehicles, and Toyota has identified three key goals:

- Improved fuel efficiency and reduced CO₂ emissions
- Cleaner exhaust emissions for improved air quality
- Energy diversification to counter decreasing oil reserves

Toyota Optimal Drive



Minimise & Maximise



Toyota is taking an environmental lead through the simultaneous development of new technologies on two fronts: Toyota Optimal Drive, which focuses on optimising the efficiency of the current petrol and diesel engine line-up, and Hybrid Synergy Drive®, which will serve as a core technology applicable to all future models.



Introduced at the 2008 Paris Motor Show, Toyota Optimal Drive showcases a combination of wide-ranging advanced technologies and internal improvement programmes designed to optimise the balance of performance and driving enjoyment with fuel economy and low emissions.

Incorporated, as standard, in every Toyota, these diverse core technologies focus on three key aspects of powertrain development: the reduction of engine weight, the reduction of unnecessary mechanical losses and the maximisation of combustion efficiency.

Reduced Engine Weight

Weight is the enemy of fuel consumption. Toyota has developed super-lightweight and highly compact engine blocks and transmissions. For example, featuring a lightweight resin cylinder head cover and intake manifold, the 1.33 litre petrol engine in the Yaris is the lightest and most compact powertrain in its class, weighing 13kg less than the 1.4 VVT-i engine it replaces.

Reduced Mechanical Losses

Further engine efficiency has been achieved by the painstaking reduction of friction throughout the new powertrain range. Revised roller rocker technology incorporates new camshaft profiles for friction reduction in the valve gear. Enhanced bore circularity and lightweight, coated pistons reduce friction in combustion chambers. Increased engine block rigidity, the adoption of a water jacket spacer and the use of low-viscosity oil further reduce mechanical friction.



Maximised Combustion Efficiency

Every Toyota drivetrain incorporates several key technologies to maximise combustion efficiency and fuel economy. Petrol engine efficiency is enhanced through a high, 11.5:1 compression ratio, the refinement of intake port and combustion chamber design, and the introduction of piston cooling by oil jet.

Newly developed Valvematic technology further improves performance through the optimisation of valve timing and lift across the widest possible engine revolution band. Toyota Valvematic can reduce CO₂ emissions by up to a quarter, whilst generating 20% more power than VVT-i.

Toyota's proven D-4D common rail diesel technology reduces intake mixture temperature, allowing for a higher compression ratio and the generation of increased torque. Every D-4D unit in the Toyota range has now been upgraded with advanced Piezo high-pressure injectors to further improve combustion efficiency.

Performance, driving pleasure and fuel efficiency are further enhanced through a range of technologically advanced, highly responsive Multidrive and 6-speed manual transmissions. And a newly refined Stop & Start system automatically switches off the engine when the vehicle is stationary, reducing fuel consumption by up to 15% under urban driving conditions.



Hybrid Synergy Drive®

Hybrid Synergy Drive® is a core Toyota technology contributing to increased fuel efficiency and cleaner emissions with a lower CO₂ content. Toyota is committed to increasing the availability of hybrid drive train technology within its product range.

With the launch of the [Prius](#) in 1997 (2000 in Europe), Toyota introduced the world's first mass-produced hybrid vehicle. Today, despite increased competition, the [Prius](#) remains the world's most widespread hybrid, with sales of over 1.2 million achieved by the end of 2008. European sales of the [Prius](#) stand at almost 130,000, with sales of more than 41,000 in 2008 alone, and a target of 60,000 units in 2010.

The next generation [Prius](#) features a revised Hybrid Synergy Drive® powertrain, combining lower fuel consumption and CO₂ emissions with increased power for enhanced driving pleasure.

Toyota is committed to a further reduction in the size, weight and cost of key hybrid components such as the electric motor, inverter and batteries.

Already manufacturing hybrid vehicles in China and the United States, Toyota intends to expand overseas production to include Thailand and Australia, with the goal of selling 1 million hybrid vehicles by early 2010s.

Preparing For Tomorrow

Plug-in Hybrid Vehicle

Verification tests are currently being conducted in Japan, the United States and Europe on a new, Plug-in Hybrid Vehicle (PHV). Toyota's plug-in hybrid functions as an electric vehicle on short trips and a conventional hybrid when travelling longer distances.

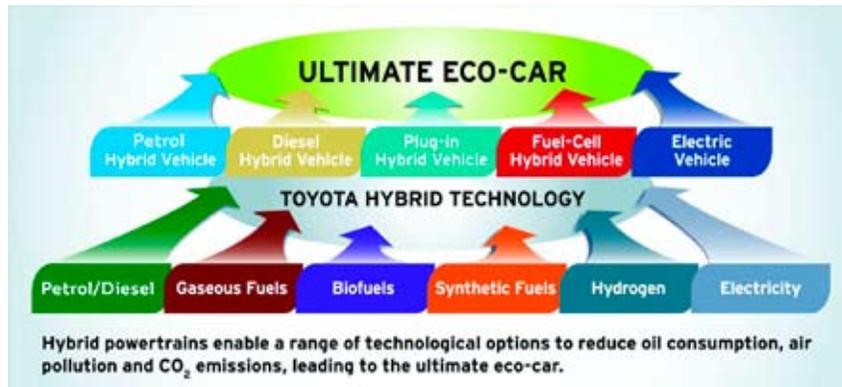
As with Toyota's Hybrid Synergy Drive® vehicles, the PHV runs on both a petrol-powered internal combustion engine and an electric motor. What sets the plug-in apart from current hybrids, however, is an increased battery capacity that enables a longer electric-only cruising range, and a battery charging function that allows users to fully recharge the batteries externally, using an ordinary household electrical supply, in less than two hours.

The Plug-in Hybrid's enhanced EV mode offers significant driver benefits. Compared to the Prius, the PHV is able to run more often in petrol-free, electric-only mode, thus reducing CO₂ emissions even further.

Targeting the fleet market in Japan, the United States and Europe, Toyota will introduce a Plug-in Hybrid Vehicle equipped with a lithium-ion battery by 2010.

Hydrogen Fuel Cell Hybrid Vehicle (FCHV)

Producing electricity through a chemical reaction between hydrogen (stored in the vehicle) and oxygen (from the air), with water the only emission, a fuel cell structure comprises electrodes and polyelectrolyte films sandwiched between separators. When hundreds of cells are stacked together, the result is a fuel cell 'stack', known as an FC stack.



Toyota began work on FCHVs in 1992, developing its own hydrogen fuel cells and high-pressure hydrogen storage tanks in house. The company applies its own hybrid drive technology to FCHV development, replacing petrol engines with fuel cells, and its FC stack is a performance leader in fuel cell technology. The world's first production fuel cell vehicle, the Toyota FCHV, was introduced to the market in 2002 and obtained type certification in 2005.

Toyota's next generation fuel cell hybrid, the FCHV-adv, featuring a newly designed, high-performance Toyota FC Stack fuel cell, received vehicle-type certification from Japan's Ministry of Land, Infrastructure and Transport on 3 June 2008.

The Toyota FCHV-adv offers a 25% improvement in fuel efficiency and, through the use of Toyota-developed, 70Mpa high-pressure hydrogen storage tanks, has a single-fill-up cruising range of approximately 830 km -more than twice the cruising range of its predecessor, the Toyota FCHV. Furthermore, the TOYOTA FCHV-adv will operate in -30 degrees Celsius, greatly improving its cold weather performance.

Future Toyota Electric Vehicles (FT-EV) Concept

Through the development of its hybrid, RAV4-EV and e-com vehicles, Toyota has accumulated an unprecedented depth of knowledge and engineering capability in the field of eco-vehicles.

The demand for short distance commuter vehicles is expected to increase in the coming years, and the new FT-EV concept is a fully electric vehicle based on the Toyota iQ's highly compact platform. Its powerful electric motor generates 45 kW and 160 Nm at 2690rpm. It has a top speed of 110km/h, a range of 80 km before recharging and a zero emission rating.



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