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# iQ: The new car for tomorrow's low carbon society

- iQ development started about 5 years ago
- Toyota's vision of a prosperous, low carbon society
- Reducing CO<sub>2</sub> in Europe, on sale early 2009
- A cornerstone of Toyota's sustainability plan



The iQ is a revolutionary new vehicle that will enhance Toyota's range of urban compact cars that already includes AYGO and Yaris. Toyota expects iQ to attract many new customers to the brand through the car's breakthrough design, packaging and driving dynamics. From the environmental perspective iQ strategically enhances Toyota's position to offer exciting and desirable vehicles with low fuel consumption and emissions.

"We wanted to create the world's first, sophisticated fourseat car, less than three metres long, using ultra-effective packaging, a unique design, ultra-low fuel consumption and high driving and safety performance. To achieve this, iQ had to have a similar size to an A-segment car, its performance would have to surpass the B-segment, and interior and exterior quality being on C-segment level."

Hiroki Nakajima, Chief Engineer of the iQ



#### The iQ is born

The iQ story began about five years ago, when a team of Toyota engineers led by Chief Engineer Hiroki Nakajima were given the unique chance of creating one of the most important cars ever launched by Toyota. Just as Prius set a new benchmark for innovative drivetrain engineering, the iQ is intended to act as a catalyst to reshape thinking about the packaging of compact, environmentally friendly cars. The team set itself the tough goal of developing a revolutionary sophisticated compact car that was at the same time kind to cities.

The iQ project first focused on packaging and miniaturisation, but later designers in Japan and from Toyota's ED<sup>2</sup> Design Centre near Nice worked to create this sensational looking sub-3m car. About three years ago, Toyota top management gave the green light, and the iQ concept was showcased at the 2007 Frankfurt Motor Show.

For maximum commercial success the team designed iQ to appeal strongly to new-to-Toyota customers. These are the kind of people who usually follow a more emotional approach to car buying. And while they might admire Toyota for being a successful and innovative carmaker, they might not have connected with the Toyota brand on an emotional level. iQ is here to change this. Right from its inception it has been specially designed to connect to the needs of this audience.

"Before putting pen to paper, we carefully researched who will buy the iQ. In the customer clinics we came across dynamic people who demonstrate great independence in their choice of lifestyle and values. You could say that this group has a strong sense of who they are and what they want; they are confident in their sense of style and seek a car through which they can communicate their individuality."

Hiroki Nakajima, Chief Engineer of the iQ

iQ is also designed to enhance choice in Toyota's impressive range of compact cars. While the AYGO is positioned in the A-segment with an exterior length 420mm longer than the iQ, it is clearly an entry model – simple and accessible, yet cool, fresh and colourful. Yaris on the other hand is at the heart of the B-segment, also targeting families, who purchase it as the main family car. iQ represents a milestone breakthrough in automotive engineering and radical new thinking, that differentiates it from all other small cars. iQ brings a high level of sophistication through many advanced features which are usually only found on larger cars.

### On sale in Europe, early 2009

Production of the new iQ begins in November 2008 at the Takaoka Plant in Japan. The iQ will go on sale in Japan in November 2008 and throughout Europe in early 2009. The main European markets are expected to be Italy, Germany, France and the UK. At the moment Toyota plans to produce around 100,000 units on a full year basis, selling 80% of them in Europe. The iQ will be built on a completely new platform.

However, to really understand the importance of the new Toyota iQ, one has to take a deeper look at the society it was designed for.

Worldwide awareness is growing daily concerning issues such as global warming, resource depletion, fuel prices, and atmospheric pollution, and there are now strong demands for carmakers to develop more harmonious relationships with society and the global environment.

On the 11th of December 1997 the Kyoto Protocol was agreed upon by the 3rd Conference of the Parties, and entered into force on the 16th of February 2005 and as of May 2008, 182 parties have ratified the protocol. The objective of the Kyoto Protocol is to achieve "stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."



# **CO**<sub>2</sub> reductions in Europe

Action has already been taken in Europe. On the 19th of December 2007, the European Commission adopted a proposal for legislation to reduce the average  $\mathrm{CO}_2$  emissions of new passenger cars. And Toyota is determined to reduce the environmental impact of its cars too.

"Since it was founded over seventy years ago, the Toyota Motor Company has conducted its business based on the guiding principle of contributing to the development of a prosperous society through the manufacture of automobiles. However, now Toyota must seek to combine the power of people and technology to help create a society that maintains a balance between corporate activities and environmental preservation."

Katsuaki Watanbe, President of Toyota Motor Corporation

### iQ will support Toyota's sustainability plan

In 2007, Toyota announced that it would pursue three areas of sustainability as part of efforts to contribute to the continued development of society and the planet we live on. The three areas are research and development in more environmentally friendly products, manufacturing and social contribution. Already, the new iQ directly contributes to the first and second areas.











#### Sustainability through research and development

- Toyota hybrid research began in 1965
- 1.5 million Toyota hybrids sold since 1997
- Plug-in Hybrid Vehicles to be launched by the end of 2009
- Hybrid has already saved seven million tons of CO<sub>2</sub> emissions
- Toyota Optimal Drive, including Valvematic, Dual VVT-i breakthroughs
- iQ breakthrough packaging technology
- Launch of smaller, lightweight vehicles like the Urban Cruiser

New environmentally friendly vehicles, such as the iQ, will further support Toyota's overall  ${\rm CO_2}$  reduction plan. The iQ is part of a new line-up of small cars from Toyota that provide additional consumer choice with lower vehicle emissions. Thanks to increased sales of Toyota's fuel-efficient cars, such as the iQ (as low as 99g/km), Prius (104g/km), AYGO (as low as 106g/km) and Yaris (as low as 115g/km), the company's  ${\rm CO_2}$  average is already declining. (\* ${\rm CO_2}$  figures on the 1st November 2008)

At the core of Toyota's emission reduction programme is their pioneering Hybrid Synergy Drive® technology. Hybrid technology not only assists in the reduction of harmful emissions and fuel consumption, it also delivers noise pollution reduction benefits, on top of providing a high level of driving pleasure.

Toyota first started experimenting with hybrid technology in 1965, and was the first manufacturer to introduce mass produced hybrid cars. It's now well over ten years since the first generation Prius was launched. Worldwide cumulative sales of the Prius reached one million units in April 2008 and global cumulative sales of hybrid vehicles reached 1.5 million in June 2008. By the end of 2009, Toyota will launch a Plug-in Hybrid Vehicle, or PHV. Research and development of PHVs is already at an advanced stage, with testing being carried out on Japanese, American and European roads.

What Prius is to drivetrain technology, iQ is certainly to packaging, and it heralds the launch of a new range of compact Toyota cars, that offer sophisticated mobility and performance, yet at the same time being kind to our cities. Rather than downsizing or making do with less, these breakthrough new cars use radical new packaging concepts to offer big car refinement in a smaller car.

Further important developments include the Toyota Optimal Drive concept with Valvematic, Dual VVT-i engine technology, D-4D common rail, and as a mid-term outlook Plug-in Hybrid Vehicles, alternative fuels and lightweight construction methods.

# Sustainability in manufacturing

- Since 2001, 44% reduction in the energy used to build a Toyota in Europe
- Energy-efficient Japanese iQ production facility

Reducing running emissions is critical since these contribute to 80% of a vehicle's total lifecycle emissions. However, further reductions to benefit the environment can be made at the manufacturing stage. In Europe, Toyota has reduced the average energy required to build a car by 44% since 2001. Emissions have been reduced by using renewable energy including biomass and natural energy sources, such as solar and wind power. Meanwhile, all Toyota manufacturing plants in Europe have achieved the ambitious target of delivering zero waste to landfill.

Meanwhile, at its Takaoka Plant, where the iQ is being built, Toyota installed a new innovative assembly line. By introducing innovative technology and further streamlining current production systems such as the Global Body Line and Set Parts System, Toyota intends to greatly improve both productivity and energy efficiency.



# Radical iQ Design, influenced by Toyota's Japanese roots

- J-Factor = Japanese design heritage
- Harmony of three design approaches: 'Perfect imbalance', 'Integrated components architecture' and 'Freeform geometrics'
- iQ interior design inspired by the manta ray fish
- Stylish chocolate-plum interior

The new Toyota iQ represents simple, bold, forward-looking Japanese design. Reducing everything to a minimal level is actually much more complex than it seems. Consider the traditional Japanese Zen Garden that combines the roughness of raked gravel with the smoothness of geometrically positioned stones. Japanese aesthetics function by creating contrasts within design – contrasting the empty and the full, the smooth and the rough. The iQ design is full of contrasts; it is simple yet intriguing and this is applied throughout the car.

"Like the Prius, we view this car as a major milestone in Toyota's vehicle development. It will offer a unique proposition to urban customers - a new mode of urban transport - small yet spacious, refined yet small. iQ is a wonderful example of what we call 'J-Factor' design, which combines Japanese authenticity with engineering ingenuity. In this respect, iQ is the "Quintessential Toyota".

Andrea Formica, Senior Vice-President of Toyota Motor Europe

However, to fully understand how contemporary Japanese design influences the stunning new iQ, one needs to delve a little deeper into the past to discover a land that, apart from sporadic contacts with China, was historically a "world of its own".

#### J-Factor = Japanese design heritage

Japan only really started to open up to the rest of the planet after the arrival of United States Commodore Matthew Perry and the US Fleet in 1853. Change then came rapidly. In 1869, the Imperial government moved from Kyoto to Edo, whose name was then changed to Tokyo, and Japan started its own Industrial Revolution, moving forward at exponential speed. During the later part of the 19th Century Japanese designers also started developing new styles that blended traditionalism with these foreign influences.

Japanese product design has always been exquisite. This is perhaps because right up to the Meiji, or so-called "Enlightened Period" from 1868-1912, there was no Japanese word for "Fine Arts". In other words, Japanese culture could not differentiate between "Art to be use" and "Art to be admired". This is most certainly the reason why finely crafted Japanese objects such as bowls, vases and furniture have always captivated Western architects and designers.

This heritage of making beautiful objects, despite a bout of blueprint copying work in 1960-1970s to fuel post war reconstruction, has produced a much acclaimed portfolio of product design. A few design highlights over the last 50 years include: 1958 Sony TR-610 transistor radio, 1966 Nikon F SLR camera, 1998 Sony VAIO laptop, 1999 SINKANSEN high-speed bullet train, and of course the award-winning 2003 Toyota Prius.

"At Toyota our design philosophy is based on a belief that design should emphasise endurance, in a philosophy that connects the past to the future. We believe that design should touch people's hearts and represent a dream that has come true. To achieve this we believe we should first go back to our origins. We are a Japanese company and we should never hide this fact. We see this as an advantage and we believe we can use it as an advantage in our approach to design. This is what we call our J-factor. J-factor is quite simply Japanese originality that will have global appeal."

Wahei Hirai, Managing Officer in charge of design

#### "Perfect imbalance"

This prevalent use of asymmetry in Japanese aesthetics can be described as Perfect Imbalance. An unexpected element in an otherwise perfect composition is often the element that makes it more natural, enthralling and dynamic. Stereotype notions of vehicles, which look 'balanced', are often easy to understand at first, but soon become boring. Creating energy and vitality in the overall proportion of a vehicle is essential in design which endures.

On the new iQ perfect imbalance was applied to the car's proportions: a simple and daring exterior with a strong contrast between the stable and robust stance provided by the iQ's width and the shortness of its overall length. The concern in making a car less than three metres in length is that it will appear weak and unstable. The Toyota designers felt the iQ must deliver a sense of strength and stability powerful enough to break away from this association. This resulted in the "Stability and Dynamism" idea that can be seen in the wide and stable body – a total width of 1,680 mm and a height of 1,500 mm contrasting with the total length of less than three metres – and in the design which places the wheels at the extreme corners of the car.

Through daringly uprooting the conventionally prescribed proportions of a small car, Toyota has retained a delicate balance of proportions – a "perfect imbalance", one might say – to realise a car with a radical new sense of form, strength and a robust stance. Above all, the compact form, with almost zero overhangs results in a car that is exciting and fun to drive.



# "Integrated component architecture"

The iQ employs modern integrated component architecture where each unit contributes to the overall design: the structure around the wheels forms part of the minimal front and rear overhangs, a synergy that conveys both strength and agility.

At the front of the car, smoked headlamp units with projector-like high-intensity bi-halogen bulbs are set deep into the bonnet and wings. Large door mirrors, heated and retractable with integrated turn indicators, usually only seen on C-segment or D-segment cars, further reflect the iQ's refined urban appeal.



# "Freeform geometrics"

A new Toyota design technique called "freeform geometrics" was developed to sculpt the iQ. Here designers used mathematical formulas to emulate organic forms like seashells or fish. The cleanliness and precision of these lines is a tribute to the accuracy of their calculations that radiate movement and emotion to make the design fresh and contemporary.

For the iQ Toyota has taken this clarity even further, with a philosophy the Chief Engineer called "On-the-Edge Value" that is characterised by the cleanly crafted, sharply contoured exterior surfaces of the iQ.

#### iQ exterior design

iQ's wheels - placed at the extremities of each corner - give the iQ what the designers call a 'super stance'. At just 2,985mm in length, but with a proportionally larger wheelbase of 2,000mm, the iQ is small in size, but unlike a small car possesses a confident on-road appearance. The iQ's robustness is further enhanced by the tough-looking bumpers. And the virtual lack of overhangs and concentration of weight inside the short wheelbase allows for rewarding handling.

Strong vertical lines define the rear view of the iQ, while the bold rear lamp lenses are divided into three segments by horizontal lines, which help underpin the iQ's

strong presence. The iQ is fitted with 5-spoke 15-inch alloy wheels, which are confidently embedded in the bold wheel arches.

From a rear three-quarter perspective the creative tension continues. A seamless line runs from the edge of the roofline towards the B-pillar and curves around the deep rear glass area, before returning towards the rear hatch, with energy-saving and fast-reaction LED high stop light, and then tailing off at the bold, geometrically-shaped wheel arches.







# iQ interior design

In the new iQ a distinctive interior space has been created by combining a high level of practicality with a super-modern design. The 'on-the-edge' exterior styling is replicated in the iQ's refined interior architecture. By mathematically analysing and recreating the structural beauty of natural objects such as seashells, Toyota designers have achieved a 'techno-organic' design that fuses geometric precision with inner beauty.





### Inspired by the manta ray fish

Toyota's interpretation of "techno-organic" is demonstrated in the floating 'V' centre console that is actually a mathematical emulation of a manta ray fish, forming the powerful centrepiece of the asymmetric dashboard. At the base of the 'V' is a single dial that cleverly controls all the functions of the air conditioning. The audio unit is also integrated seamlessly into the console, with only the CD slot visible on the centre console. All audio controls and joy stick are fitted to the steering wheel.

Situated within the arms of the central 'V' are cabin temperature controls with an LCD displaying airflow and twin face-level air vents. Crowning the centre console is an optional colour touch screen satellite navigation display. The iQ's analogue meter offers a high level of readability and functionality. A multi-information display located in the metre shows time, outside temperature, current fuel consumption and average fuel consumption.

#### **Chocolate-plum interior**

The iQ's interior is finished in a rich chocolate-plum colour, which contrasts with the silver of the techno-organic architecture to provide an environment of urban sophistication. The new iQ is fully carpeted in chocolate-plum pile, and features a stylish sound absorbing head lining.



# An "engineering jewel" featuring six packaging breakthroughs

- "Kakushin" the revolutionary force behind iQ
- iQ's six major space-saving innovations

A whole host of engineering breakthroughs have been combined to make iQ the world's smallest four-seat car. Toyota sees the iQ as an 'engineering jewel' capable of radically changing consumer opinion on small cars.

#### "Kakushin" - the revolutionary force behind iQ

"In today's world change can be produced by kaizen (continuous incremental improvement), but when the rate of change is too slow, we have to resort to kakushin (revolutionary change or radical innovation). I am trying to get people to make the leap from incremental improvement to radical improvement wherever possible."

Katsuaki Watanabe, President of Toyota Motor Corporation

The new iQ required a drastically changed mindset. The engineers had to reconsider the very locations of various vehicle components rather than simply re-designing parts to a smaller size. The result is a true break-through in 'small yet spacious' packaging, which at the same time has been designed to meet the top 5-star safety rating of Euro NCAP.



All desired cabin comforts are housed within the iQ's 2,000 mm wheelbase. A distance of 710 mm is maintained between the driver and front passenger seat, giving space that is comparable to that of a C-segment vehicle.

On the iQ the thickness of the doors has even been reduced compared to a Yaris through the use of a guideless regulator structure instead of the conventional cross-arm window regulator structure, thus increasing shoulder room.



The front pillars are positioned forward and then slope back to eliminate any feeling of claustrophobia. The front passenger seat can be slid forward to ensure enough legroom to accommodate three 190 cm tall adults and one child or luggage. Both rear seats can be folded down to increase the load capacity of the boot to a max of 238 litres (VDA) or 32 litres when both the rear seats are in position.

Space has also been created by cleverly locating the gearshift and parking brake almost side by side to give more room for rear seat passengers to extend their feet between the front seats. And as there is no fuel tank under the rear seat, objects can also be stowed unobtrusively in a secret tray under the rear seat.

"In our search for space, we developed an ultra-compact air-conditioning unit and repositioned the heater blower unit normally found in the front passenger foot well, to the centre of the instrument panel. Designers then went so far as to make the glove box detachable. This created a significant amount of space for the front passenger seat to slide forward. Thin front seatbacks were also newly developed, giving them a concave form to increase rear seat legroom. This meant that more legroom for rear seat occupants could be created. Our efforts have paid off and people who sit in the iQ remark on how spacious it feels."

Hiroki Nakajima, Chief Engineer of the iQ



## iQ's six major space-saving innovations:

- 1 Front-mounted differential
- 2 Centre take-off steering gear
- 3 Flat under-floor fuel tank
- 4 Ultra-slim seat design
- 5 Ultra-compact heater/air conditioning unit
- 6 Asymmetric dashboard design

"Every millimetre we can move the pedals forward is very important. So five years ago we embarked upon an exercise in extreme packaging improvement as part of the iQ project. And the lessons learnt here will be applied to other future Toyota models,"

Hiroki Nakajima, Chief Engineer of the iQ



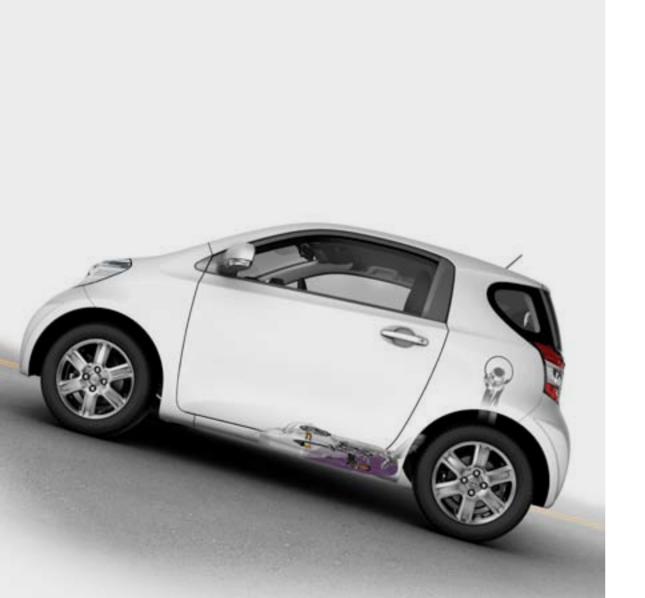


The forward placement of the differential in front of the engine means the distance from the tip of the bumper to the accelerator pedal could be reduced by 120 mm. This ingenious location of the differential brings 3-fold advantages: the under-bonnet area is made more compact; the front wheels can be placed at the very corners of the car, which drastically shortens the front overhang



### 2) Centre take-off steering

The new iQ uses a central take-off steering gear that is positioned higher and further back in the engine bay. The engine compartment could then be reduced considerably, further shortening the front overhang. This is made possible, because the steering rack tie rods are connected to the centre of the steering rack, rather than to both ends of the steering rack like in the case of Yaris and AYGO. This allowed the engineers to accommodate the engine underneath.



#### 3) Flat under-floor fuel tank

On the new Toyota iQ, the conventional fuel tank located under the rear seats has been replaced by an ultra-slim underfloor tank of only 120 mm height. This allows the rear wheels to be placed 440mm further forward. In addition the rear shock absorbers cleverly slope backwards to stop them encroaching on rear seat space.

Traditionally, a flat tank was considered difficult to engineer successfully, because of the variance in fuel surface levels depending on the angle of the car, for instance, when the car is parked on a slope. However, persistent engineering efforts to downsize and find the optimal placement of functional parts have resulted in a flat fuel tank that creates significant space savings and also reduces the centre of gravity of the car.

Toyota engineers developed a special horizontal fuel pump, fuel suction inlets in both fuel pump and canister, and fuel level indicators are located in the centre of the fuel tank and were developed to ensure an accurate fuel level. iQ's new fuel tank has 32 litre capacity which is enough for more than 700km of range for the 1.0-litre engine.



#### 4) Ultra-slim seat design

The slimness of the iQ seat backs release a further 40mm of rear passenger room at knee height so that rear passengers can sit more comfortably. With an all-new frame structure and optimal adjustment of ancillary parts, the slimmer seat designs save space without sacrificing comfort. In its drive to save weight Toyota has designed high tensile steel seat frames that save 1 kg per seat.



# 5) Space-saving heater/air conditioning unit

Toyota engineers have managed to significantly reduce the size of the heater/ air conditioning unit without sacrificing performance output. As a result of the size reduction, the passenger-side area of the asymmetric dashboard could be moved forward and centrally towards the windscreen base, freeing up additional cabin space. The overall size of the unit has been reduced by 20% with no reduction in performance. A smaller blower fan, improved air flow by re-routing air passages within the unit and a more compact air filter made this possible.





The iQ's innovative asymmetric dashboard was designed to open up the passenger area. Here the passenger instrument panel, which traditionally housed the large air-conditioning unit has been reshaped. This gives an extra 130mm of passenger legroom compared with Yaris, enabling the seat to be moved backwards and forwards. In addition, the glove box in a conventional car has been removed, but can be replaced by a detachable briefcase if necessary.



The pushed-forward and step-like structure of the dashboard provides sufficient space for the front passenger when the seat is set at its most forward position while comfortably accommodating an adult in the rear seat.





# Driving performance— iQ is a 'serious driving machine'

- Strong body, short overhangs
- Weight saving engineering
- Compact and lightweight MacPherson front suspension
- Torsion beam rear suspension
- Electric power steering
- Steering Assist Vehicle Stability Control VSC+
- 15" alloy wheels





The new iQ is much more than the world's smallest sophisticated four-seater. Leading similar cars in driving performance, the iQ is quick, agile and great fun in curves. But also stable and safe on motorways at speeds up to 170 km/h.

The iQ offers quick and nimble handling in urban environments and a level of motorway stability previously unimaginable for a vehicle of its size. Innovative driving dynamics have been achieved by a combination of a new platform, innovative suspension/steering and leading-edge aerodynamics.

An extremely small turning radius of 3.9 metres, made possible by the innovative positioning of front wheels and engine, further enhances iQ's appeal, even in narrow city streets.

The iQ maintains high stability at all speeds due to characteristics such as a high front suspension caster angle, reduced front suspension torsional stiffness and the amount of roll steer and rigidity maintained in the rear suspension. And despite its very short wheelbase, the iQ ensures straight line braking stability when applying the brakes in an emergency situation.

### Strong body, short overhangs

Through innovative design, iQ engineers reduced overhangs to a minimum and located the car's major mass between the front and rear wheels to improve handling and controllability. This design philosophy, borrowed from racing car design, also makes the iQ great fun to drive.

The iQ prototype spent thousands of hours in computer simulations and hundreds of hours in the wind tunnel to make sure the production model has class-leading aerodynamics. Its low drag coefficient of 0.30 for the 1.0-litre petrol manual transmission boosts high-speed stability and top speed whilst reducing fuel consumption and wind noise.

# Weight saving engineering

Toyota engineers examined nearly every part of the iQ with sophisticated computer simulation techniques in the quest to reduce weight. Weight reduction leads to both more driving pleasure and lower fuel consumption.

Great effort also went into reducing the weight of the torsion beam. Here Toyota was able to reduce the weight by 3.5kg. And by adopting an innovative "cross-shaped" rear wheel flange engineers were able to save another kilo of metal.

Engineers also developed the world's lightest exhaust system among front engine front drive cars that weighs only 6kg - achieved through the usage of a long tailpipe and only one main low-resonance muffler – and not an additional sub-muffler. Furthermore, this contributes to a low floor – therefore to lower overall vehicle height.

#### **MacPherson front suspension**

A new and specially designed MacPherson strut front suspension has been adopted for the iQ. This design gives a high level of handling stability and smooth ride comfort, despite the iQ's short wheelbase. This compact and lightweight system was chosen to control the car's large-diameter wheels and at the same time allow a class-leading minimum turning radius.



The MacPherson strut front suspension features a high 8.3° caster angle for more toe-out when lateral forces are applied, which basically means a more stable stance for the front wheels. By decreasing the stiffness of the steering arm, toe-out is added too when lateral forces increase, thus again adding to a high degree of stability. Both measures increase understeer and add to stability. Optimised geometry and damping force achieve maximum ride comfort and driving stability.

#### **Torsion Beam rear suspension**

A new torsion beam rear suspension has also been developed exclusively for the iQ too. It enables excellent stability at high speeds or in curves. A high level of suspension steer rigidity is ensured, minimising steering changes from the rear suspension. Rear end lifting is also limited when braking hard, while arm bushing characteristics and shock absorbers have been optimised for ride and low noise, vibration and harshness.

The suspension also supports the car's compact packaging concept by delivering a class-leading tread, whilst the rear shock absorbers are cleverly rearward sloping to enable a wider cargo bay.



# **Electric Power Steering**

A centre take-off steering rack and electric power steering system has been developed for the new iQ. A vehicle-speed sensing EPS (Electric Power Steering), as normally fitted to C-segment and upper cars is fitted on the iQ. The power to the steering is controlled based on vehicle speed to realize a steering sensation with light response during low speeds and moderate response as speeds increase.





This EPS system also interlinks with iQ steering assist Vehicle Stability Control system (VSC+). Compared to traditional hydraulic systems, power is only consumed when power assist is in action, leading to excellent fuel economy as the engine is not having to maintain hydraulic pressure all the time. The 15:1 gear ratio system achieves a quick response steering feel with ensured yaw rate gain when driving in the city at low to medium speeds and offers stable handling at high speeds on the motorway by giving a low yaw rate gain for safe braking and high speed stability. A tilt steering column is also adopted to accommodate different driver positions.

#### 15" alloy wheels

The new iQ comes with large diameter wheels suited to its unique super stance design. 175/65R15 wheels will be fitted to the 1.0-litre petrol and 1.4-litre diesel models. These will be fitted with either Bridgestone or Yokohama tyres.

"Low rolling resistance" Bridgestone tyres were specially selected for the 1.0-litre iQ.

This combination of advanced tyres and alloy hubs give a refined drive, not normally associated with the small wheels of compact cars. A tyre repair kit is supplied in substitution for a spare wheel. The 15" alloy wheel is also available in a high gloss version.



# Innovative drivetrain technology — featuring Toyota Optimal Drive

- Toyota Optimal Drive concept
- 1.0-litre petrol and 1.4-litre diesel at launch
- 1.33-litre petrol engine with Stop & Start technology arrives 2009
- Brand new Multidrive or 5 speed transmission for 1.0-litre VVT-i
- 6 speed transmission on 1.4-litre D-4D
- CO<sub>2</sub> emissions start at 99g/km
- All engines meet Euro IV regulation and are ready for Euro V.

Alongside the vastly improved sustainability at Toyota's plants, lasting CO<sub>2</sub> reductions will be achieved mainly by a range of new hybrid models and the new raft of petrol, diesel and transmission technologies introduced at the 2008 Paris Motor Show.T oyota Optimal Drive is intended to:

- Reduce harmful emissions
- Increase fuel efficiency
- Not compromise on driving pleasure
- Be standard on new model launches

Unlike many other carmakers, Toyota has chosen to innovate and develop new technologies, rather than just downsizing or detuning existing technology.

Built on the company's legendary "Kaizen" tradition of constant optimisation, Toyota engineers have improved combustion efficiency, reduced engine/transmission weight, and friction, to produce new engines that produce more power, yet at the same time are more efficient and economical.

In short, the technologies are great fun to drive, but at the same time kind to the planet.





Three types of engine (a 1.0-litre petrol, 1.33-litre petrol\*, and 1.4-litre diesel) are available on the new iQ, each with their own distinctive characteristics and clearly defined advantages.

- The 1.0-litre petrol engine achieves the best fuel efficiency, producing 99g CO<sub>2</sub>/km by European CO<sub>2</sub> emissions standards the first time a four-seat petrol car has broken the 100g CO<sub>2</sub>/km mark.
- The 1.4-litre diesel, on the other hand, has an excellent power-weight ratio, boasting class-leading performance.
- Finally, the biggest feature of the larger 1.33-litre petrol engine is the harmony it provides between fuel efficiency and performance.

On top of this, a Multidrive transmission is being introduced for models with the 1.0-litre or 1.33-litre petrol engines. Rarely seen in the European compact car class, Multidrive ensures smooth city driving and low fuel consumption.



# 1.0-litre VTT-i petrol engine

The 1.0-litre petrol engine achieves top-level power output of 68hp and delivers 91Nm of torque at 4,800rpm. Combined with the high ratio 5 speed manual transmission, the 3-cylinder inline unit delivers excellent fuel economy of 4.3 l/100km and  $\rm CO_2$  emissions of just 99g/km for the 1.0-litre engine 5 speed manual transmission. This power unit can also be specified with Multidrive, with  $\rm CO_2$  emissions slightly higher at 110g/km. Installed on the AYGO, this engine already received the much acclaimed 'Engine of the Year' award in 2008 in the 'sub 1.0-litre' class.

For class-leading fuel consumption and emissions, the engine adopts a charge control system to enhance fuel economy.

<sup>\*</sup>The line-off for the 1.33-litre petrol engine models is scheduled for June 2009.

Developed from the award-winning AYGO and Yaris model, for the new iQ, Toyota engineers changed the slant to 21.5° forward, reshaped the intake manifold, integrated an air cleaner into the fan shroud, as well as relocating the air conditioner compressor as part of the compact packaging concept.

The 1.0-litre petrol engine is fitted with Variable Valve Timing – intelligent (VVT-i), a computer-controlled system, which ensures that the engine breathes with maximum efficiency under all conditions. This highly advanced technology not only varies the amount of air the engine needs to suit different conditions, it also ensures the most efficient fuel burn. The result is maximum power generation, better fuel economy, lower emissions and improved throttle responses.

To improve fuel consumption levels to class-leading levels, electrical Exhaust Gas Recirculation (EGR) has been fitted to the 1.0-litre VVT-i engine, low viscosity 0W-20 lubricating oil is used and a water jacket spacer had been added. This plastic water jacket spacer placed in the cylinder controls the water flow in order to evenly distribute the cylinder surface temperature and reduce oil film thickness on it. As a result, oil viscosity at the bottom side of cylinder is improved which reduces piston friction.

# CO<sub>2</sub> emissions of 99g/km

The 1.0-litre VVT-i 5 speed manual transmission version is fitted with low resistance tyres to help reduce  $\mathrm{CO}_2$  emissions to 99g/km. In addition an Eco driving indicator informs the driver whether they are using the car's accelerator in an eco-friendly manner, and helps support a low emissions driving style. Current and average fuel consumption is also routinely shown, enabling drivers to achieve efficient fuel bills.

The Gear Shift Indicator indicates to the driver when to shift the gear up or down for optimal environmental performance. The system takes into account the driving conditions, including the level that the accelerator pedal is pressed and the vehicle speed. This indicator may result in 0.5% to 3% fuel consumption reduction compared to normal gear shifting, though the potential for improvement is, of course, dependent on the driver's personal driving habits.



#### **Multidrive (Continuous Variable Transmission)**

Available on both petrol engines, Toyota's innovative Multidrive delivers an incredibly smooth 'shift feel' while optimising the balance of fuel economy and performance. It continuously monitors and selects the most appropriate gear ratio and shifting speed, automatically eliminating 'shift shock'. It maximises available engine torque without unnecessary acceleration, as well as smoothing shifts – for example, limiting uphill shifts and executing downhill shifts to achieve optimum engine brake force. Multidrive delivers the city-friendly characteristics of automatic transmission with urban cycle fuel consumption.



#### **Upgraded 1.4-litre D-4D diesel engine**

The 1.4-litre D-4D diesel engine features latest generation common rail technology with an intercooled Variable Nozzle turbocharger. Power output is an impressive 90hp and it delivers maximum torque of 190Nm at 1800-3200rpm. It's coupled with a 6 speed manual transmission for an optimum balance of acceleration and low fuel consumption. Fuel consumption is only 4.0l/100km with a class leading 104g/km  $\rm CO_2$  emissions with DPF (Diesel Particular Filter)

(notes: for CCO, 3.91/100km & 103gCO<sub>2</sub>/km,both are tentative)

Also installed with a forward tilt by 21.5°, this innovative diesel uses Piezo injector technology, the latest common rail system and turbocharger for drastically improved low-end torque, top level fuel consumption and clean emissions.

The iQ's diesel engine features an exceptionally high injection pressure of 160MPa. This results in minimal noise and vibration and allows exceptionally uniform combustion. It also means more power, torque and economy, and contributes to extremely low NOx and particulate emissions.

The 1.4-litre D-4D Diesel engine features piezo-electric injectors that can inject larger, more precise volumes of diesel at twice the speed of conventional fuel injectors. The result is a substantial increase in power and torque. And because of their high operating speed, they can deliver separate injections per combustion cycle. This includes a pilot injection to reduce diesel noise, which makes the iQ exceptionally smooth and quiet.





# Advanced safety, featuring the world's first rear window curtain shield airbag

- Anti-lock braking system (ABS) and Electronic
   Brakeforce Distribution (EBD)
- Brake Assist (BA) and Traction Control (TRC)
- Steering Assist Vehicle Stability Control VSC+
- Multi-load path body structure
- Engineered to reach 5-star Euro NCAP
- 9 airbags including world's first rear window curtain shield airbag

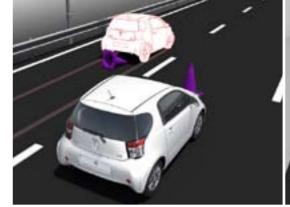
Toyota's aim is to work towards a society that is free from traffic accidents and injuries in the future. Since safety is one of the most important features of the iQ, Toyota has integrated many new technologies.

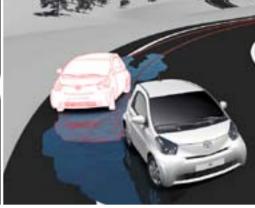
The new iQ is equipped with a wide range of advanced braking systems that make this a very safe car to drive. The idea behind the technology is to keep the iQ out of an accident in the first place.

Anti-lock Braking System (ABS) is standard, of course, and provides the foundation for a number of other more advanced braking and traction control systems.

#### **Electronic Brakeforce Distribution (EBD)**

EBD is a standard feature on the iQ. Depending on the driving conditions, EBD works with ABS to ensure that the most effective brake force is applied to each wheel, according to road conditions. By preventing the wheels from locking, EBD helps to maintain sure-footed stability during cornering and braking.





#### **Brake Assist (BA)**

Research shows that in some emergency braking situations many drivers fail to apply sufficient force to the brake pedal, or release brake pressure too soon. If either of these situations occurs, the BA fitted to the iQ anticipates the need for extra braking force and applies it automatically.

#### **Traction Control (TRC)**

Standard Traction control heightens the iQ's ability to grip the road. It's an important safety aid in many situations, particularly when you are travelling over slippery or uneven road surfaces.

The system monitors and controls the amount of power that is applied to the road through the iQ's wheels. If it detects that one or more wheels are starting to spin and lose traction – on a wet or muddy surface, for instance – the system's skid control computer instantly determines the best way to restore traction to that wheel. Typically, this might be by automatically decreasing the power being sent to the wheel that's about to spin. In more extreme cases, the system might momentarily apply the brake to the wheel until it regains traction.

#### **Steering Assist Vehicle Stability Control VSC+**

VSC+ is standard on iQ and will prevent loss of control of the car in certain situations – for example, if you enter a corner too fast or encounter slippery conditions which might lead to a skid.

The system acquires data from a host of sensors placed strategically throughout the iQ. These include: wheel rotation speed, brake pressure and car body movement. If the system calculates that the driver is about to lose control of the car, it will apply various stability and safety systems to varying degrees. In a skid, for example, the system will judiciously apply the brakes and even adjust steering torque to enable the driver to regain control of the car.



#### Multi-load path body structure

One of the most critical engineering features on any small car is the passenger protection cell. For the new iQ, engineers developed a new occupant protection system based on Toyota's innovative Multi-load path body system. In the event of a collision, iQ uses a system of six countermeasures to overcome any impact:

- 1. The iQ engine was placed towards the rear of the engine bay, giving more room for an energy absorbing structure at the front of the front side members. In a serious collision the engine would also function as a barrier, reducing the impact to the passenger cell.
- 2. The location of the front tyres right at the front of iQ gives valuable initial protection in the event of a frontal collision.
- 3. By using the suspension member side rail in addition to the standard collision area formed by the front side member, the total energy absorption capacity has been increased.
- 4. By attaching the rear part of the front suspension member to the body in four places, the load from the front side members can be transmitted to the cross member.
- 5. Body strength was increased even more by connecting front side members and rocker together directly.
- 6. Strengthening across the dashboard area means impact forces toward the cabin are distributed more evenly and effectively.

#### **5-Star Euro NCAP target**

The iQ features a totally new, high-rigidity platform with a robust safety structure capable of absorbing a high degree of impact energy. iQ has been created with the express aim of achieving class-leading safety in terms of full-frontal, offset, side and rear collisions. In addition the iQ is intended to achieve a maximum 5-star rating for adult passenger and 3-star pedestrian protection in the Euro NCAP crash test programme.

The front bonnet shape and height, and the collapsible cowl construction are designed to deform in the case of an impact to help mitigate potential pedestrian injury.

#### 9 airbags

For world-class safety performance a total of nine airbags are provided as standard equipment. These consist of seven different types: a newly developed rear window curtain shield airbag (world first), two side airbags, one front passenger seat cushion airbag, one driver knee airbag and two curtain shield airbags, in addition to driver and front passenger airbags. With this, the iQ is positioned to offer a world-class level of safety performance for a compact car. All nine airbags on the iQ were specially developed for the car, using the idea of miniaturisation to adapt them to the smaller cabin so as not to compromise on safety. The side airbags are bigger while the others are smaller.



#### SRS Driver front airbag and knee airbag

The driver's front airbag and knee airbag were specially tailored to match iQ's compact form. As the knee airbag is closer to the driver's knee, the airbag volume can be reduced as well as the deployment time – this reduces knee slide.

#### SRS Twin chamber passenger airbag

For the iQ passenger airbag Toyota developed a new kind of 'twin chamber bag'. A world first for this class of car. First seen on Lexus sedans, this technology acts like a baseball glove to actually "catch" the passenger who usually travels further in a collision than the driver.



#### SRS Seat cushion airbag (Toyota first)

Another Toyota first, the front seat cushion airbag inflates under the passenger's thigh to spread and reduce the impact to head and chest by reducing the movement of the hip with the seatbelt during a possible collision. Because of the large space between the instrument panel and the passenger's knees, Toyota could not use a conventional knee airbag to restrain the front seat passenger. A switch is available to turn it off for use with a child seat.

#### **SRS Front and Rear side airbags**

Side airbags are in place to protect from side impact as the front passengers are closer to the door and therefore more at risk from a possible side collision. These airbags are divided through differently coated silicon bags into pelvis and chest area, as both parts of the body need different kinds of pressure for protection (pelvis high pressure, chest lower pressure).

#### **SRS Curtain shield airbags**

Large curtain shield airbags are installed above the front and rear windows on each side of the car to protect front and rear iQ passengers and driver in the event of a side-on collision.

#### SRS Rear window curtain shield airbag (world first)

The iQ is the first model in the market to feature a rear window curtain shield airbag along the rear window – as there is only a small space between the rear window and the occupants their heads need to be protected. If a rear impact occurs, first the airbag deploys between the roof panel and roof headlining, then it deploys further from the rear edge of the roof headlining along the rear window to protect the passenger's head.

As you would expect on a car designed to carry children, the rear seats are also fitted with Isofix connection points.





# Aspirational grade strategy

- Two grades available: 'iQ' and 'iQ2'
- Available in Pearl White, Black Mica and Amethyst
- Attractive launch package and fabrics
- High level of standard equipment
- Leather-covered, low profile steering wheel
- 6-speaker audio plays MP3 and WMA formats
- Stylish LED lighting



iQ is unusually well-equipped. At launch, there will be two levels of trim: iQ and " $iQ^2$ ". The advanced equipment fitted on  $iQ^2$ , reads like the specifications of a larger car.

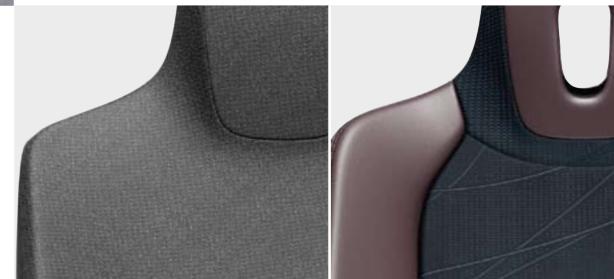
#### **Available in Pearl White, Black Mica and Amethyst**

On its launch the iQ will be available with Pearl White, Black Mica or Amethyst (purple) paintwork. Other colours and a range of exciting styling kits will become available after the launch phase.

#### Fabric, fabric/leather, or leather seats

Front slim seatbacks with integrated headrests enhance the edgy feel of the iQ and assist in freeing up additional passenger space. They are extremely comfortable, and are actually wider and offer more equal back support than on Yaris.

Seats are finished in either tough-wearing fabric, half-leather or perforated leather. As an option the front seats can also be heated. Large ergonomically-placed handles on both sides of the seats allow easy access for rear seat passengers. Both front seats also travel backwards and forwards on smooth yet solid rail systems. The slide length on the iQ front passenger sear is 50mm longer than that on the driver's seat of the Yaris, making it comfortable to get in and out.





#### **Ergonomic flexibility and utility**

Alongside seatbelts and Isofix child seat sockets, the rear seat area offers two conveniently located cupholders and the chance to stretch one's feet out between the two front seats, due to the innovative positioning of the gearshift and handbrake. At the front the driver and passenger have one central cupholder and one bottle holder in each door.

A secret tray is neatly concealed below the rear seat, and along with the deck box placed behind the rear seat, provides more storage without sacrificing cabin space. For more luggage capacity the 50/50 split rear seats can be separately folded flat to increase the available load area.

#### High level of standard equipment

Already the 'iQ' grade offers customers a very high level of standard equipment. The tilt function steering wheel as well as the gearshift knob is covered in soft, tactile black leather. The 'techno-organic' feel is underscored by high quality grained trim on the dashboard and console areas, with softly textured black material in front of the passenger, and on the gearshift and handbrake stalks.

Manual air conditioning is standard, as are 15" alloy wheels and electric and body coloured outer door mirrors. Power windows, privacy glass and radio-CD further add to the high degree of features.

#### Leather-covered, low profile steering wheel

The leather-covered steering wheel is also standard on the new iQ, and is flat-bottomed (10mm taken off the radius) to provide the driver with greater legroom. Audio controls are located on the wheel to save space on the centre cluster and to offer a high-level of convenience for the driver. Grip is wide and soft and designers included two finger rest areas that make long trips more relaxing.









#### 6-speaker audio plays MP3 and WMA formats

Full audio controls are integrated on the steering wheel with an innovative joystick-like control button. Volume, audio source, track and channel selection are shown in the multi-information display right in front of the driver to minimise unnecessary eye movement. This allows the 6-speaker, MP3 and WMA (Windows Media Audio) -compatible audio system to take up minimal space, with just the CD slot and eject button located in the centre cluster. A discreet mini-jack is provided for portable MP3 and iPOD players. Front and rear speakers are located seamlessly and 2.5 cm tweeters are positioned strategically on the front door handles for optimum sound.

#### **LED lighting**

An innovative lighting module, fitted over the driver and front seat passenger, uses a white energy-saving LED to give an elegant and calm atmosphere. This technology delivers 1.5 times more light and pivots for a broader illumination range – achieving a high level of design and functionality.

The new iQ can also be ordered with an electro-chromatic rear view mirror that automatically adjusts the degree of reflection of the inner mirror in accordance with the strength of light from vehicles behind.

#### "iQ2" standard equipment

In the 'iQ²' grade version, the air conditioning becomes automatic, with just a single dial to control all functions. Smart Entry allows keyless access to driver and passenger doors and the boot area, and is coupled with a push-start button for more convenience.

There are both rain sensors and dusk sensors as well as heated retractable door mirrors and electro-chromatic rear view mirror. Further on this grade, the iQ's distinctive headlamps are enhanced by smoked outer glass with high-intensity bi-halogen bulbs. Front fog lamps are fitted as well as high gloss 15" alloys. The rear light design is also highlighted with a touch of chrome in the cluster.





#### iQ Optional features

For all grades of iQ, owners can also elect extra luxury features from the following list: Leather/fabric seats (fabric is standard), all leather seats, briefcase type glovebox, navigation system (radio not fitted here) and navigation with USB connection.

The compact and sophisticated touch screen satellite navigation, integrated with the audio system is optional. It features both Bluetooth for hands-free operation, MP3/iPOD connection and an SD card slot to upload European countries maps.



## Low NVH, legendary Toyota quality

- Acoustic windshield
- Advanced aerodynamics to reduce turbulence and noise
- High-quality materials and finish



To achieve a refined feel that surpasses all other small car offerings, meticulous attention was paid to the quality finish of interior and exterior details. The consistency and quality of the design elements create the edgy refined feel expressed by the "On-the-Edge Value" design concept. Furthermore, to achieve high level NVH (Noise, Vibration, and Harshness) performance, the iQ goes beyond simply securing a class-leading level of interior quietness by delicately balancing the amount of road, engine, and wind noise to control sound quality inside the cabin.

#### 3-layer acoustic windshield

The iQ features an advanced 3-layer acoustic windshield to insulate the cabin and reduce noise. Designed to stop noise, the laminated glass consists of a soft inter layer in between the two layers of glass – this interlayer consists of a prevention film between 2 layers of standard film. In the mid-to-high frequency range the noise level is reduced by up to 20%.

In addition, iQ engineers also developed a clever way of using the air gap between the bonnet panel insulation and the engine cover to improve sound insulation from the engine.

#### **Advanced aerodynamics**

A closer look at the Toyota iQ reveals many intelligent design features that combine to reduce drag, noise and fuel consumption. This holistic aerodynamic package gives the iQ a very low drag coefficient starting from 0.30.

Attention to detail is everywhere: Protrusions on the front bumpers not only protect the car in tight urban parking spaces, but also deflect air toward the top of the vehicle to reduce drag. iQ also has underfloor panels covering the fuel tank, and rear floor pan to help reduce drag and in turn lower noise. More difficult to spot is the cover on the radiator supports that again reduces turbulence. Carefully placed spats reduce turbulence around the tyres and wheels.

By widening and thickening the A-pillar moulding, the gap between the pillar and the moulding has been reduced meaning smoother airflow to the rear of the vehicle. However, Toyota also made sure to reduce A-pillar blind spots, that in turn enhanced driving visibility. Each C-pillar is fitted with a deflector fin that reduces the drag coefficient by stopping air "sticking" to the rear end of the car. Rear light lenses also integrate a small spoiler. Drag has also been reduced by using a raised chamfer on the rear roof section that helps to separate the airflow from the vehicle and reduce drag.

The wheel arches are also carefully lined and fitted with spats to reduce turbulence as the wheels rotate. iQ engineers also developed a special foam material to insulate the frame cavities in the car to reduce noise.





Underneath iQ, based on the results from wind tunnel tests they fitted underfloor panels to improve aerodynamics and reduce noise. Panel gaps are kept to a minimum, as small gaps mean less turbulence.

#### High-quality materials and finish

As you slide into the iQ's driver's seat, you cannot help but notice this is a very special small car. Everything you touch communicates a message of quality from the leather covered three-spoke steering wheel to the sculpted centre cluster. The steering wheel is stitched by machine for perfection.

Mouldings, materials and finish on the new Toyota iQ offer C-segment quality levels. The dashboard features high-quality textured mouldings contrasting with woven-style polymer mouldings around the centre cluster. Areas that you interact with more, like the rounding on the dashboard and the gearshift/ parking brake trim are given a sophisticated soft touch treatment. Great attention was paid to all materials used on the iQ and all are tested by Toyota in extreme conditions.

Matching silver paint finish applied to the centre cluster gives the iQ a clean and modern appearance, while silver door handles enhance the flowing mantaray styling.



# Flexible ownership scheme

- Offers the customer extreme flexibility
- Highlights the low monthly cost of owning an iQ
- Provides a 'One Stop Shop' offer to the customer
- Generates a consistent supply of used cars every 12 months

For the new iQ, Toyota has developed an innovative financing scheme for this innovative new car. It allows customers to drive the car today and decide tomorrow about financing as part of the "3flex experience".

Toyota has developed an attractive and flexible finance offer that appeals to the primary target customers and focuses on the affordable monthly cost of driving an iQ rather than the transaction price.

The offer will promote three different packages for the customer that allow them to either make a monthly payment only, monthly payment plus either servicing or insurance or monthly payment plus servicing and insurance (Inclusive package).

#### Simple purchase concept

The customer pays the initial down payment, chooses one of the three different packages outlined above, and then signs a finance contract for the agreed monthly payments. After the first 12 months the customer can either continue driving their iQ for a further 12 months, exchange for a new or upgraded iQ, or return their iQ.



#### **Specifications (Subject to final homologation)**

**Engine** 1.0 litre VVT-i 1.4 litre D-4D

	5 speed M/T	Multidrive	6 speed M/T		
Engine code	1KR	-FE	1ND-TV		
Туре	3 cylinder, i	n-line type	4 cylinder, in-line type		
Fuel type	Premium	(95 RON)	48 Cetane diesel		
Valve mechanism	12-valve DOHC, cha	in drive with VVT-i	8-valve OHC, chain drive		
Displacement	99	998			
Bore x stroke (mm)	71x	73.0 x 81.5			
Compression ratio (:1)	10	10,5			
Max. power (DIN hp)	6	8	90		
KW /rpm	50/6	,000	66/3400		
Max. torque (Nm/rpm)	91/4	190/1,800-3,200			
Battery type	12V,3	12V,48Ah/12V,66Ah*			
Emissions level	EUR	O IV	EURO IV		

<sup>\*</sup> Models for cold regions

#### **Transmission**

Туре			Front wheel drive				
Engine		1.0-litr	e VVT-i	1.4-litre D-4D			
Operation type		5 speed M/T	Multidrive	6 speed M/T			
1st		3,538		3,538			
	2nd	1,913		1,913			
	3rd	1,310	2706 0 426	1,310			
Gear ratios	4th	1,029	2,386 - 0,426	0,971			
	5th	0,875		0,714			
	6th	-		0,619			
	Reverse	3,333	2,505	3,333			
Differential gear ratio		3,736	5,403	3,238			

#### **Brakes**

	Standard	Optional			
Front	Ventilated disc brakes - ø 255	Ventilated disc brakes - ø 255			
Rear	Drums - ø 180 mm	Solid disc brakes - ø 259			
	ABS (Anti-lock Brake system)				
	EBD (Electronic Brake-force Distribution)				
Additional features	BA (Brake assist)				
	TRC (Traction Control)				
	VSC+ (Vehicle Stability Control)				

#### Steering

Туре	Rack and pinion, center take-off type
Ratio (:1)	15.3
Turns (lock to lock)	2.91
Min. turning radius – tyre (m)	3.9
Additional feature	Electric Power Steering (EPS)

#### **Suspensions**

Front	MacPherson Strut
Rear	Torsion beam

Performance	1.0 litre VVT-i	1.4 litre D-4D
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Transmission	5 speed M/T	Multidrive	6 speed M/T	
Max. Speed (km/h)	150	150	170	
0-100 km/h	14.7	15.5	11.8	

#### Fuel consumption \*

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Transmission	5 speed M/T	Multidrive	6 speed M/T CCo	6 speed M/T DPF		
Urban (1/100km)	4,9	5,7	4,8	4,8		
Extra-urban (1/100km)	3,9	4,1	3.4	3,5		
Combined (1/100km)	4,3	4,7	3,9	4,0		
Tank capacity	32					

#### CO<sub>2</sub> emissions \*

1.0-litre VVT-i

1.4-litre D-4D

Transmission	5 speed M/T	Multidrive	6 speed M/T CCo	6 speed M/T DPF
Urban (g/km)	115	133	125	127
Extra-urban (g/km)	91	96	91	92
Combined (g/km)	99	110	103	104

DPF: Diesel Particulate Filter - CCo: Oxydation Catalytic Converter

#### Other emissions \*

1.0-litre VVT-i

1.4-litre D-4D

Transmission	5 speed M/T	Multidrive	6 speed M/T CCo	6 speed M/T DPF
CO (g/km)	0,15	0,12	0,14	0,14
HC (g/km)	0,03	0,04	×	×
NOx (g/km)	0,02	0,02	0,2	0,2
HC + NOx (g/km)	×	×	0,21	0,22
PM (g/km)	×	×	0,02	0,002

#### Noise level

1.0-litre VVT-i

1.4-litre D-4D

Transmission	5 speed M/T	Multidrive	6 speed M/T CCo	6 speed M/T DPF
Stationary - dB(A)	76	76	75	74
Drive-by - dB(A)	67.3	70.2	69.2	68.7

#### disclaimer

\* The fuel consumption and CO<sub>2</sub> 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.

The fuel consumption and CO<sub>2</sub> 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 CO<sub>2</sub> emissions.

Exterior dimensions	1.0-litre VVT-i	1.4-litre D-4D	
Overall length (mm)	2,9	985	
Overall width (mm)	1,6	580	
Overall height (mm)	1,5	500	
Wheelbase (mm)	2,000		
Front tread (mm)	1,480		
Rear tread (mm)	1,4	160	
Front overhang (mm)	530		
Rear overhang (mm)	455		
Drag coefficient (Cd)	0,299	0,305	

### Interior dimensions

Interior length (mm)		1,435
Interior width (mm)		1,515
Interior height (mm)		1,145
Hand room (mm)	Front	957
Head room (mm)	Rear	915
Shoulder room (mm)	Front	1,348
	Rear	1,262
Leg room (mm)	Front	1,049
	Rear	727
Couple distance (mm)		641

### Luggage compartment

VDA luggage capacity, rear seats up (L)	32
VDA luggage capacity, rear seats down (L)	238
Length¹ (mm)	665
Width (mm)	1.280
Height (mm)	765

<sup>&</sup>lt;sup>1</sup> With rear seats down

Weight	1.0-litre VVT-i	1.4-litre D-4D
vvciuiic	1.0 11616 0 0 1 1	1, I IICIC D ID

Transmission	5 speed M/T	Multidrive	6 speed M/T
Kerb weight (kg) (LHD models)	845-885	860-895	945-975
Gross vehicle weight (kg)	1,210	1,210	1,285
Towing capacity w/ brakes 12% (kg)	0	0	0
Towing capacity, w/o brakes (kg)	0	0	0

Tyres and wheels	iQ	$iQ^2$
Size	175/65R15	175/65R15

#### Equipment

Exterior	iQ	iQ <sup>2</sup>
15" alloys	std	-
High gloss 15" alloys	-	std
Electric and coloured outer door mirrors	std	-
Electric, heated outer door mirros	opt	-
Electric, heated and retractable outer door mirrors	opt	std
Side turn indicators on outer door mirrors	std	std
Painted bumpers with corner protection moulding	std	std
LED rear stop lamp	std	std
Rain sensor	-	std
Dusk sensor	-	std
Electro-cromatic rear view mirror	-	std
Front fog lamps	-	std
Darkened bi-halogen headlamps (front and rear)	-	std
Chrome rear combi lamp	-	std

Comfort	iQ	$iQ^2$
Manual Airconditioning	std	-
Automatic Airconditioning		std
Leather steering wheel with audio switches	std	std
Leather shift knob	std	std
Tilt steering wheel	std	std
Gear shift indicator (MT) & Ecometer	std	std
ABS with BA & EBD	std	std
VSC and TRC	std	std
9 airbags	std	std
Power door lock	std	std
Key-less entry system	std	-
Smart Entry (Driver, Passenger and boot)	-	std
Push start	-	std
Front power windows	std	std
Privacy glass	std	std
Tonneau cover	std	std
Rear deck tray	std	std

Information and audio	iQ	$iQ^2$
Multi-information display: audio, average speed, clock, outside temperature, current and average fuel consumption	std	std
Radio, CD, 6 speakers including MP3 and WMA format readability	std	std
MP3 player connectivity via Aux-in	std	std
Navigation system (SD card map, Bluetooth, MP3 player connectivity)	opt	opt
Seats	iQ	iQ <sup>2</sup>
Rear seat headrests (2 set)	std	std
Fabric	std	std
Semi leather	opt	opt
Leather	opt	opt
Rear seats 50:50 split/folding	std	std
Storage compartments	iQ	iQ <sup>2</sup>
Brief case type glove box	std	std
Front cup holder	std	std
Secret tray under rear seat bench	std	std
Front door pockets and bottle holders	std	std
Rear cup holder	std	std
Security	iQ	iQ <sup>2</sup>
Immobiliser	std	std
Interior switch for door locking	std	std

Safety	iQ	$iQ^2$
Active		
ABS + EBD + BA	std	std
VSC + TRC	std	std
Passive		
Multi-load path	std	std
SRS front airbags: driver and passenger	std	std
SRS curtain shield airbags: driver and passanger	std	std
Driver SRS knee airbag	std	std
Front passenger SRS seat cushion airbag	std	std
SRS side airbags: driver and passenger	std	std
SRS rear window curtain shield airbag	std	std
Front passenger airbag switch-off	std	std
Seat belt warning: driver and passenger	std	std
Rear seat belt indicator	std	std
Front seat belts: 3-point ELR with pre-tensioners and force-limiters	std	std
Rear seat belts: 3-point ELR/ALR	std	std
Whiplash Injury Lessening (WIL) seat: driver and passenger	std	std
Isofix child restraint system	std	std





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