

TOYOTA AURIS

Toyota has increased the appeal of the Auris range of hatchbacks and wagons to meet the needs of more customers, offering new and revised diesel, petrol and hybrid powertrains, updated equipment specifications and advanced safety equipment.

In 2010 Toyota launched the original Auris Hybrid, becoming the first and only manufacturer to offer a choice of three powertrains in the compact/family car market. Today, with only limited and more expensive competition, the extensive Auris range remains a unique proposition.

All versions of Auris – hatchback, hybrid and the Touring Sports wagon – continue to be built by Toyota Manufacturing UK at its Burnaston plant, near Derby.

Toyota's full hybrid technology has become established as a mainstream powertrain choice, with Auris Hybrid's smooth, relaxed and stress-free driving proving increasingly popular with compact car customers. The hybrid model accounts for more than 50 per cent of all Auris sales in western Europe, a share that's expected to increase over the next few years. Auris attracts more sales than any other hybrid on the market.

The current Auris range reflects the changes in this highly competitive market and feedback from Toyota customers, with significant improvements in five key areas: design, sensory quality, the hybrid model, safety and powertrains.

In 2015 an all-new 1.2-litre direct injection turbocharged engine joined the established petrol line-up. At the same time, a new 1.6-litre D-4D was added and the 1.4-litre D-4D was substantially upgraded to give best-in-class CO₂ emissions in the 90bhp power category. Every engine in the range meets Euro 6 emissions regulations.

The refreshed front and rear exterior styling gives Auris a more prestigious and sophisticated road presence. On board, the sensory quality of the cabin has been significantly raised with a redesigned dashboard, premium quality trims and surface finishes and a 4.2-inch colour TFT multi-information screen (on all hybrids and grades above Active).

Auris further benefits from suspension and steering revisions to improve ride comfort, handling and driver involvement. Numerous measures have also been introduced to reduce NVH transmitted into the cabin.

INSIGHT

Toshio Kanei

Project Director, Toyota European Projects

Europe is an important testing ground for Toyota, customers are demanding and competition is tough. That is one of the main reasons for the increase in Toyota's activities in Europe and the establishment of a European Projects division. That way we can more accurately target the product improvements we want to make, so we can compete more strongly with our rivals – at first here in Europe, but ultimately anywhere in the world.

This is especially true of the C-segment, which is a very important and advanced part of the market here.

After we launched the second generation Auris in 2012, we analysed our product position against other OEMs and gathered feedback from dealers and customers. We identified the strengths of the current product, and also learned from our drivers where they saw opportunities for improvement – in sensory quality, for example.

In response, we set up the Sensory Quality division in 2012, bringing the same engineering skill and attention to detail that we already devote to interior ergonomics and comfort to the visual, tactile and aural experiences of vehicle occupants.

The SQ division's role has expanded with each new model. It has collaborated with both designers and engineers on every aspect of the interior to ensure that we could take a big step forward with new Auris. Its painstaking work on areas such as shape, colour, touch, illumination and graphics has really paid off, raising interior ambience with unprecedented levels of visual quality, consistency and harmony.

We have worked a great deal on the driveability of each powertrain, most notably the new 1.6 D-4D engine and the all-new 1.2 turbo petrol unit that Toyota has developed specifically for the European market. We have also improved the car's dynamics to harmonise the new styling with a more sporting and refined driving experience.

The compact hatchback is a mainstream vehicle in Europe, where customer expectations are higher than in any other market, certainly higher than in Japan or America. In Europe, good ride and handling are a “must”. Driving speeds are high, and good stability and quick steering response are essential.

So we feel that if we get this right for Europe, it will be effective in all markets. In America they drive great distances on freeways, so they value straight line stability above all else. But even there, requirements are shifting towards better, European-style handling.

Auris has an increasing global relevance for Toyota. We sell it mainly in Europe, Japan and Australia, but we have considered the possibility of new markets for this car, including marketing it in the USA as the Scion iM, with cars built in Japan.

Of course, North American regulations are different, so we had to make revisions to meet these specific requirements. We also conducted focus group interviews in New York and Los Angeles to gain a clearer understanding of American customers’ expectations and the direction we should take with a Scion version.

So the body shape is the same, but there are differences in the bumpers, lamps and aerodynamic parts, reflecting the more extrovert direction preferred by Scion customers. The dynamics, ride and handling, however, are taken straight from the European Auris and the American audience seems to be very pleased with that. That’s just one example of how Toyota’s European R&D know-how is starting to strengthen our products across the globe.

NEW EXTERIOR DESIGN AND IMPROVED INTERIOR SENSORY QUALITY

- **More prestigious and sophisticated exterior design**
- **Improved interior design with greater consistency, uniformity and sensory quality**
- **4.2-inch multi-information TFT display and seven-inch touchscreen with fully integrated switchgear**

Auris's front and rear have been comprehensively redesigned to give the vehicle the visual impression of a broader stance and lower centre gravity, and a more prestigious, sophisticated road presence.

At the front, a pair of chrome wings emerges from a more prominent Toyota emblem. The powerful upper wings underscore the front lip of the bonnet, running the full width of the car. The lower wings are less prominent and sweep down into the upper surface of the bumper, holding the sharply angled inside edge of the headlamp clusters, which include LED daytime running lights.

LED lamps have many advantages over conventional bulbs: the light they produce is closest to daylight (on the Kelvin scale); they use less energy; and they have a service life of up to 100,000 hours – almost the same as the vehicle itself.

The lower grille, set beneath a more prominent front bumper, runs the full width of the car. It has a narrow centre section, underscored by a chrome accent on the lip spoiler, which widens into deep pods housing the fog lights, at the furthest edges of the new design.

In profile the front and rear styling generates longer overhangs, improving the overall balance of the design and leading the eye in a sweeping line from the front Toyota emblem to the rear lamp cluster. A shark fin roof antenna and 16 and 17-inch alloy wheel designs add further impact.

To the rear, the lower half of the car has been completely redesigned, again to add visual emphasis to the vehicle's broad stance. The width of the deeper, more muscular bumper design is amplified by the location of reflector lamp housings at the furthest edges and by a thin chrome trim line.

The rear lamp clusters use LED light guide technology, giving Auris a distinctive lighting signature.

Improved interior sensory quality

The sensory quality of Auris's cabin has been raised with a reduction in the visual mass of the dashboard design, cleaner integration of the instrumentation (with more uniform illumination) and a more consistent shape and finish to grained surfaces and trim elements.

The driver's instrument binnacle has a stronger, more sporting design with tubed tachometer and speedometer dials either side of a 4.2-inch colour TFT multi-information screen (monochrome display on Active grade).

The centre stack instrumentation is set within a curvaceous dashboard. It has been integrated into a single, smooth surface, incorporating touch-sensitive switchgear with more consistent back-lighting. The dashboard's upper surface and fascia are finished in the same soft-touch material, with a consistent grain pattern.

Many details, such as the air vents, doorhandles and gear lever surround, have been redesigned to give a crisper, high-quality appearance. The shape and finish of chrome trim features have been harmonised and new seat upholstery designs complete the more premium quality cabin environment.

INSIGHT

Mehmet Fatih Kale

Senior Engineer, Body Design Division, Toyota Europe

Sensory quality is about how customers perceive our vehicles. When we sit in a car all our senses are judging the environment, predominantly its visual, tactile and aural qualities.

The Sensory Quality Team was established in 2012 to be the link between design and engineering. We're trying to bring the same depth of engineering logic that applies to ergonomics and occupant comfort to the field of sensory quality. Our role has recently been expanded, so we're now involved from the very beginning of the styling process, where the initial alignment of concept and feasibility ensures the best product execution.

We map the whole interior to highlight possible areas of concern and possible improvements to discuss with the designers and the chief engineer. Mapping is very important at the outset, to ensure we identify every element that needs attention, so there is no drop in sensory quality in any single component.

In the context of Auris, although the interior quality of the previous generation car is very good, we wanted to improve cohesion between diverse elements, bringing consistency to the design language. A sense of coherence is a crucial quality for the European market, so our focus with new Auris has been to analyse how we can create harmony on board.

To that end, we established three main pillars for Auris. Firstly, to achieve consistency, we worked on aligning sections and matching decoration shapes, for instance linking door trim to instrument panel to console. Additionally, the steering wheel, instrument panel and air vent chrome trim were matched to give the same look, while the new piano black finish on the centre console matches that of the audio display.

Secondly, to enhance coherence, we worked on improving colour consistency, with a focus on black elements. Dividing the interior into three groups – injection moulded parts, painted parts and soft parts – we now use a colour measurement-based system. The colour of all the interior parts has been fine-tuned to create visual unity.

Thirdly, to improve visual quality, we prioritised the instrument clusters and centre console, which are the main visual elements from the driver's perspective. We designed clean, continuous surfaces by minimising the split lines between elements and removing them altogether where possible, for example between two adjacent piano black panels, to create larger, single elements. This creates the same visual harmony you get from, say, a piece of marble.

We removed all superfluous text from the switchgear and even, in the case of the clock adjustment for example, reduced the switchgear itself. We adjusted instrument illumination by aligning all the blue shades from the different control panels and, finally, we now use universal backlighting to create greater visual uniformity.

So, for instance, each gear shift position used to have a different colour on the shift indicator; now every position is shown in white, turning to a backlit colour only when it is selected, giving a clean visual match with the rest of the instrument panel and switchgear illumination.

In summary, aesthetics, consistency and attention to detail are key aspects of our work in meeting European customers' expectations of harmony, balance and high visual quality. That's where our role fits so well between design and engineering, focusing on each detail and bringing all these elements together to create harmony inside the vehicle.

In new Auris we have removed the silver paint finish and all metal decorations are now made of real chrome, which highlights the piano black finish beautifully and defines the technical zone. Also, we now have a leather finish available for the door, centre console armrests that has the same grain and matching stitching, creating the cabin's comfort zone. All these elements combine to improve the visual harmony.

Nobody likes being unpleasantly surprised by a car's interior; it's very important to achieve a good combination of touch, shape and surface. If a part looks hard, it must feel hard; if it looks soft, it must feel soft; if it's a metal finish, it must look metallic and feel cold to the touch. And there's the fundamental difference between animal and technical grain. If you see technical grain, you expect it to feel hard, but all our experience of animal grain, for instance in furnishings, signals that it must be soft to the touch.

The Sensory Quality Team's involvement and responsibility are growing with each new Toyota coming to the market in Europe and our experience and expertise are increasing at the same time. To sum up what our division has aimed to achieve with new Auris, I would say it is high sensory quality in which the whole is more than the sum of the parts.

IMPROVED DRIVING DYNAMICS AND NVH

- **Suspension revisions for improved roll damping and straight line ride comfort**
- **Revised electric power steering with better feel and feedback**
- **Improved NVH measures for quieter driving environment**

Auris benefits from further suspension and steering revisions designed to improve ride comfort and handling. Numerous measures have also been introduced to reduce the transmission of noise, vibration and harshness into the cabin.

Components in the MacPherson strut front suspension have been revised, including the design of the coil springs, shock absorbers, upper insulators, bound stoppers and stabiliser bushes.

For its rear suspension, Auris uses either a double wishbone (1.2T, 1.6 D-4D and 1.8 Hybrid) or a torsion bar (1.3 VVT-i petrol, 1.4 D-4D) system.

In combination, the changes to the suspension improve initial roll damping, minimise friction and improve straight-line ride comfort.

In addition, the electric power steering system's mapping has been tuned to further build steering weight as vehicle speed rises, giving better feedback between 35 and 50mph.

Improved NVH performance

Improvements to Auris's NVH measures ensure the Toyota's more comfortable ride is complemented by a noticeably quieter cabin.

Soundproofing has been improved with sound-absorbing materials in strategic locations around the cowl, instrument panel and transmission tunnel. An outer tunnel silencer has been added to minimise transmission noise.

Additional sealing in the front wing, dashboard and door area further cuts the amount of engine, road and wind noise reaching the cabin.

ENCOUNTER

Jan Lysen

Manager, Toyota Europe Marketing Management

In order to increase Toyota sales, we want to find more customers who have never driven our cars before. Hybrid takes the lead role in this plan as a very strong proposition for this kind of customer.

We already know from our experience with the current generation Auris that the hybrid experience attracts customers to the Toyota brand. The hybrid model currently accounts for half of all sales in Europe and it is now the best-selling hybrid in Europe, ahead of Yaris.

However, we want to increase Auris sales further and have a big job to do in getting hybrid out to customers so they can discover just how good the driving experience is. For a lot of people outside the industry, this is still a new technology. It isn't a conventional petrol or diesel, it is something different. Remember, many people are still daunted by prospect of driving a car with automatic transmission for the first time.

The hybrid proposition is about how the car drives, as well as the benefits of fuel economy and CO₂ it delivers. The combination of automatic transmission and electric motor gives easy, relaxed, feel-good driving, which fits well very with today's congested traffic environment.

We call it intuitive, responsive and quiet. Once they have experienced it, everyone understands the special quality of hybrid's hassle-free, stop-start driving.

With the launch of new Auris, it is important for us to challenge our retailers and ourselves to make sure that as many people as possible get to try the hybrid. If you haven't driven it for yourself, you simply won't get the full picture of what hybrid is about.

Of course hybrid is one of the things that gets us noticed, but for those customers who are attracted to Toyota and Auris, but want a more traditional powertrain, we now have the new 1.2-litre turbo and 1.6-litre diesel options.

These new engines bring us into horsepower bands where we have not been represented in this market segment before. Consequently, our offer is much more focused on the areas where there is most demand.

REVISED POWERTRAIN LINE-UP

- **1.8-litre full hybrid with class-leading emissions from 79g/km**
- **All-new, direct-injection 1.2-litre turbo petrol engine, with performance from 106g/km and 61.4mpg**
- **New 1.6 D-4D and updated 1.4 D-4D diesels, both Euro 6-compliant**

The Auris petrol, diesel and hybrid powertrain line-up has been extended and extensively revised, reflecting changing trends in the C-segment which call for further reductions in fuel consumption, emissions and cost of ownership, without diminishing performance or driving pleasure. Every engine in the range meets Euro 6 emissions regulations.

The 1.2T, an all-new direct injection turbocharged engine joins the established 1.33-litre VVT-i unit to give customers a wider choice of petrol engines. There is also a new 1.6-litre D-4D diesel unit (replacing a 2.0-litre D-4D that was available in some European markets outside the UK) and the 1.4-litre D-4D has been substantially upgraded.

The 1.8-litre hybrid powertrain completes one of the broadest ranges for any model in this part of the market. Toyota's full hybrid technology, which in Auris delivers a feel-good driving experience plus class-leading emissions from as low as 79g/km, accounted for more than half of all European Auris sales in 2014, confirming the fact it has become a mainstream proposition.

Every powertrain comes with the benefits of Toyota Optimal Drive, a combination of advanced technologies and internal improvements designed to optimise the balance of performance and driving enjoyment with fuel economy and low emissions.

Lower full hybrid system emissions

Auris Hybrid returns class-leading, highly tax-efficient CO₂ emissions from as low as 79g/km (combined cycle).

Toyota's full hybrid technology offers a quiet, relaxing and intuitive driving experience. Of particular note are the highly responsive performance from the combination of petrol engine and electric motor when accelerating from standstill, overtaking or changing lanes. The engine's stop and start performance is seamless, giving stress-free driving in urban traffic, and the hybrid system runs exceptionally quietly when running on electric motor power.

The Auris hybrid can run purely on electric motor power from start-up and at speeds up to around 44mph, depending on a number of factors such as the level of charge in the hybrid battery and the driver's use of the throttle. The system will automatically switch to electric power when possible (indicated by the green EV light illuminating in the instrument binnacle) to maximise efficiency.

The Hybrid Synergy Drive system's 1.8-litre VVT-i petrol engine and electric motor together generate maximum power of 134bhp, giving the Auris Hybrid hatchback 0 – 62mph acceleration in 10.9 seconds and a top speed of 112mph.

Auris Hybrid generates virtually no NO_x and particulate matter emissions. Moreover, when running on its electric motor alone, it produces zero CO₂, NO_x and particulate matter tailpipe emissions and consumes no petrol.

The powertrain is engineered to eliminate the need for the petrol engine to run as much as possible in city driving. Toyota's own data show the cumulative effect of full hybrid operation leads to high proportions of zero-emissions driving being achieved.

Auris Hybrid can be switched to EV mode using a button on the centre console, which allows short distances to be covered on electric power, at relatively low speeds, for example in slow-moving traffic. However, it is not engineered to be driven like an all-electric vehicle; instead, its hybrid system automatically ensures electric power is used when driving conditions, driving style and battery charge permit.

Auris Hybrid's official combined cycle fuel consumption figures are from 80.7mpg (fitted with 15-inch wheels).

1.2T direct injection turbo petrol engine

The all-new 1,197cc, 16-valve, four-cylinder, direct injection turbo petrol engine offers performance similar to that of a 1.6 engine, but with significantly lower fuel consumption and CO₂ emissions (more detailed information is available in the chapter dedicated to the new engine, below).

This lightweight, highly compact unit features a number of advanced technologies, including direct injection, enhanced intelligent variable valve timing (Dual VVT-iW), a high tumble port cylinder head with an integrated exhaust manifold, a lightweight valvetrain, a variable control oil jet system and resin intake manifold and intake pipes.

The turbo, the direct injection (which allows multiple injections) and the new VVT-iW work together to provide high torque at low revs, good performance and low fuel consumption.

Maximum power output is 114bhp/85kW and an impressive 185Nm of torque is generated from 1,500 to 4,000rpm. Driving through a six-speed manual transmission, the engine gives the new Auris 1.2T hatchback a 0 – 62mph acceleration time of 10.1 seconds and a 124mph top speed.

At the same time, the new engine returns combined cycle fuel consumption from 58.9mpg and CO₂ emissions from 112g/km, attracting significant cost of ownership benefits for customers. Using Toyota's Multidrive S transmission further improves these benchmark figures, to 61.4mpg and 106g/km.

New 1.6-litre D-4D diesel

A new 1,598cc turbo diesel makes its first appearance in the Auris range, replacing a 2.0-litre D-4D that was available in some European markets.

It develops 110bhp/82kW and maximum torque of 270Nm between 1,750 and 2,250rpm. This equips the Auris 1.6 D-4D hatch with class-competitive performance figures of 0 – 62mph in 10.5 seconds and a top speed of 121mph.

Conversely, CO₂ emissions are markedly lower than those of the previous (non-UK) 2.0 D-4D, falling to 108g/km, while combined cycle fuel consumption is 67.3mpg. Cost of ownership is further reduced by new, extended servicing intervals – 12,500 miles/annually.

Upgraded 1.4-litre D-4D

The 1,364cc turbodiesel has been upgraded to comply with Euro 6 regulations, but the changes go significantly further than simply meeting the required emissions performance.

Many improvements have been made, both to improve performance and reduce emissions. A new turbocharger reduces friction in the turbine shaft by 20 per cent and improves efficiency to generate a higher boost pressure at low engine speeds.

The engine has a new solenoid fuel injection system with a larger supply pump and higher common rail injection pressure (180mpa). A NO_x storage reduction (NSR) catalyst has been adopted within the exhaust system to meet the Euro 6 requirement for a 55 per cent reduction in NO_x.

A new piston design with an open chamber combustion bowl improves fuel economy by 3.4 per cent. The pistons feature a Diamond-like Carbon coating which reduces friction and thus supports lower fuel consumption.

A plastic cylinder head cover reduces component weight by 40 per cent and offers improvements to both camshaft lubrication and oil capture performance.

The engine develops 89bhp/66kW. The breadth of torque generation has been expanded 400rpm lower down the rev range, with a maximum 205Nm now available from 1,400rpm to 2,800rpm. The Auris 1.4 D-4D hatchback will move from rest to 62mph in 12.5 seconds and reach a maximum speed of 112mph.

Comparisons in performance between the previous Euro 5 engine and the revised 1.4 D-4D are shown in the table below.

	1.4 D-4D Euro 5	1.4 D-4D Euro 6
Displacement (cc)	1,364	1,364
Compression ratio	16.5:1	16.5:1
Common rail pressure (mpa)	160	180

NOx reduction system	High-pressure loop, exhaust gas recirculation	NOx storage and reduction, high-pressure loop, exhaust gas recirculation
Max. power (bhp/kW @ rpm)	89/66 @ 3,800	89/66 @ 3,800
Max. torque (Nm @ rpm)	205 @ 1,800 – 2,800	205 @ 1,400 – 2,800
CO ₂ emissions (g/km, combined cycle)	From 99	From 92

The 1.4 D-4D engine is equipped with a manual transmission and stop and start technology, and secures combined cycle fuel consumption of 80.7mpg. It also delivers a substantial reduction in CO₂ emissions to 92g/km.

Multidrive S continuously variable transmission

The 1.2T versions of Auris are available with Multidrive S, a continuously variable transmission with two modes – fully automatic, seamless shifting or a sequential, stepped seven-speed Sport mode.

In Sport mode, the system is optimised for response and direct engine control; the transmission step position can be selected using the gear lever or shift paddles mounted on the steering column. Sport mode also features precise cornering control. When it detects deceleration, it downshifts and applies engine braking to assist the braking force. On exiting a corner, predictive downshift logic ensures the best gear ratio is selected for the required level of acceleration.

INSIGHT

Jens Brech

Senior Manager, Toyota Europe Product Planning

The European Product Planning department's main target is to help make sure the development of every new model meets the expectations of discerning European customers.

In the case of the new Auris, that relates to exterior and interior styling, sensory quality, driving performance and, of course, safety, with the new Toyota Safety Sense package. Our role is to bring all these elements together to make the best possible product for the European market.

We wanted to maintain our current strengths, such as design and the hybrid powertrain, so we took the original design, function, specification and safety targets for the current model and, driven by customer feedback, improved key areas such as sensory quality and advanced specifications.

One of the most important and immediately noticeable aspects of new Auris is the major improvements we've made in both the design and sensory quality of the interior. Our aim was to strengthen the connection between our dynamic styling of the exterior and the new, premium-status interior.

In conjunction with a comprehensive upgrading of materials and finishes, we now offer customers a new, double layer cockpit with a high quality display audio system, with controls fully integrated in the centre stack. This fully flush, integrated centre display is complemented by meters set in a new tube design, including a 4.2-inch colour TFT screen. The side air vents have been made much more stylish and we have also improved the connection between the centre console and the centre stack to create a stronger, clearer and more visibly driver-oriented emphasis.

We have also incorporated many advanced specification details throughout the car, such as the shark fin antenna, parking sensors without bezels, LED headlamps and tail lights with light guides and new 17-inch machined-face alloy wheels. Specifications that are normally only found in higher segment vehicles are now being offered on Auris.

When it comes to powertrains, Toyota's perspective is obviously a little different, as Auris is unique in its segment in offering an affordable hybrid – a choice that accounts for more than 50 per cent of model sales. But to be competitive, we still need to be in the heart of a market driven by fuel costs and CO₂ emissions with our other powertrains. Hence the small-displacement, 1.2-litre turbo petrol engine and new 1.6 D-4D, both positioned in the heart of the segment.

Auris is the first Toyota to use the 1.2-litre turbo. We needed to offer our customers an engine with very good CO₂ figures, something that can usually only be delivered with the help of turbocharging, and something that has the additional benefit of not compromising performance. Actually, compared to our 1.6-litre petrol unit, the 1.2 turbo has better performance in terms of acceleration and flexibility; it has the same top speed, but offers a 29g/km reduction in CO₂ emissions.

Finally, safety was another area in which we needed to be more competitive, hence the introduction of Toyota Safety Sense, offering Auris customers one of the most comprehensive and technologically advanced safety packages in the segment.

TOYOTA SAFETY SENSE

- **Active Safety Technologies designed to help prevent or mitigate collisions**
- **Pre-Collision System and Lane Departure Alert**
- **Automatic High Beam and Road Sign Assist systems**

Toyota is committed to achieving safe mobility for society and believes it is important to promote an approach which involves people, vehicles and the traffic environment, as well as the pursuit of real-world safety – learning from accidents and using that knowledge in vehicle development.

Toyota Safety Sense is a range of active safety technologies designed to help prevent or mitigate collisions across a wide range of traffic situations.

All Auris models equipped with the Toyota Safety Sense option feature a Pre-Collision System and Lane Departure Alert, together with Automatic High Beam and Road Sign Assist systems. The package is available for all versions, apart from Active grade.

The Pre-Collision System operates at speeds between approximately six and 49mph, detecting vehicles on the road ahead and reducing the risk of a rear collision. When it determines an impact risk, it triggers visual and audible alerts to prompt the driver to apply the brakes. At the same time, it primes the car's braking system to deliver extra stopping force when the driver presses the brake pedal. If the driver fails to react in time, the system automatically applies the brakes, reducing speed by about 19mph, or potentially bringing the car to a stop, to prevent a collision or mitigate the force of impact.

The Lane Departure Alert system monitors lane markings on the road and helps prevent accidents and head-on collisions caused by a vehicle leaving its lane. If the vehicle starts to deviate from its lane without the turn indicators being used, the system alerts the driver with visual and audible warnings.

The Automatic High Beam helps ensure excellent forward visibility when driving at night. It detects both the headlights of oncoming vehicles, and the tail lights of vehicles ahead,

automatically switching between high and low beams to avoid dazzling other drivers. As high beam is used more frequently, pedestrians and obstacles are easier and quicker to spot.

Road Sign Assist helps ensure drivers are kept informed, even if they have driven past a road sign without noticing. It recognises signage such as speed limits and “no overtaking” warnings, and displays the information on the TFT multi-information screen in the instrument binnacle. If the driver exceeds the speed limit, the system will activate a warning light and buzzer.

INSIGHT

Tjark Kreuzinger

Senior Manager, Safety Research and Technical Affairs

Toyota’s global vision for automotive safety hinges on the safest and most responsible way of moving people. We have always considered our work to embrace three elements: people, the traffic environment and vehicles.

We think it’s essential people are educated about and aware of the importance of safety in traffic; that the traffic environment is designed in a way that supports safe driving; and, as a manufacturer, we not only make sure our vehicles meet safety regulations, but also keep on developing passive and active safety measures that go beyond existing standards.

Real world safety can only be achieved if, firstly, we understand why accidents happen and what the consequences of those accidents are.

The second step is to evaluate what happens to a car in an accident, then work on improvements that can avoid this kind of accident and also mitigate the effects of a crash.

Finally we develop and test our efforts to see if they are successful. We go through this cycle again with every new generation of cars we produce.

We have achieved a great deal in passive safety during the last 20 years: better seatbelts, airbags, stronger body shells, more robust seats, more effective crumple zones. Obviously there is still more work to be done, but since the arrival of ABS and electronic stability control the focus has switched very much to active safety.

You could say the introduction of ABS was the first step in preventive safety; reducing the risk of, or even preventing an accident. Our work, then, is moving more and more towards trying to avoid the accident happening in the first place.

We see this shift in focus towards active and preventive safety in the changes at Euro NCAP as well; the way they test vehicles, the introduction of new tests to cater for new technologies, and changes to the scoring system are all designed to encourage manufacturers to further investigate active safety features.

Since 2009, Euro NCAP has adopted a four-box approach. The first concerns adult occupancy, which is what the programme was primarily about before 2009. The second is child safety – such as ISOFIX systems. The third is pedestrian safety – impacts to the head, legs and hips of adults and children. Initially the fourth box was merely concerned with seatbelt reminders and stability control, but it now includes more driver assistance systems. It already assesses lane departure, forward collision warning and automated emergency braking systems. We appreciate the fact that Euro NCAP is considering the evolution of safety developments in its testing programme.

Toyota was in fact the first car manufacturer in the world to have a radar-based forward collision warning system – what we called our Pre-Crash Safety system. That's because we understood very early in our safety development work that this was a critical element in increasing road safety, since we already knew that three quarters of traffic accidents were caused by driver inattention.

Indeed, the majority of accidents are still caused by a driver's misconception, inattention or inappropriate reaction to a situation. In line with this philosophy, and knowing that most drivers can react properly when they are alerted, using an audible and visual warning is usually enough to get them to take the correct action.

With Toyota Safety Sense we have an affordable autonomous emergency braking system. We have the technology and we will use it.

The affordability of Toyota Safety Sense is extremely significant in the wider context of road safety, as it's only when such systems are in widespread use that they can have a real impact on reducing the number and the consequences of traffic accidents.

As to the future, it's possible to foresee a time, particularly with the growth of automated motoring, when the number of traffic accidents might fall to zero. This is fully in line with the Toyota Way – to always aim for a vision, which we will continue to work for, no matter how challenging it might be.

Of course, where technology is concerned there will always be a realistic limit. With the growth of automated driving, however, I think we should target safety levels equivalent to those of railways.

1.2T ENGINE

More for less

The 1.2T, an all-new, direct injection turbocharged petrol engine, made its global debut in the Toyota Auris.

In 2014, Toyota announced its plan to introduce a series of new, highly fuel-efficient engines, created using a number of combustion and loss-reduction technologies that had previously been reserved for hybrid engines. The four-cylinder 1.2T engine was the second unit from this family to come to Europe bearing the Toyota badge, following on from the three-cylinder 1.0-litre engine that was introduced in new Aygo and Yaris in 2014.

Like the 1.0-litre, the 1.2T uses advanced technologies that allow it to change from the Otto to the Atkinson cycle when running under low loads, vertical vortex high tumble air flow intake ports, an exhaust manifold integrated in the cylinder head and advanced heat management measures.

The 1.2T adds to these a direct injection system and a water-cooled turbo and heat exchanger. Furthermore, the VVT-i intelligent variable valve timing system featured on the 1.0-litre is upgraded to a VVT-iW (Variable Valve Timing – intelligent Wide) system, which allows even more valve timing flexibility.

The combination of these technologies results in outstanding performance and efficiency. With a displacement of just 1,197cc, the engine delivers 114bhp (85kW) and constant torque of 185Nm between 1,500 and 4,000rpm. It will push the new Auris hatchback from rest to 62mph in 10.1 seconds and on to a top speed of 124mph. All of this is achieved despite a focus on fuel economy and CO₂ emissions: the car achieves from 58.9mpg on the combined cycle and from 112g/km of CO₂.

Securing better performance with higher efficiency

The key to achieving this level of fuel consumption without compromising performance is to apply higher compression, but generally, as compression increases, so does the risk of uncontrolled combustion – “knocking”.

The 1.2T’s high 10:1 compression ratio has been made possible thanks to a series of technologies that improve control of the combustion process. This way, the risk of knocking can be avoided.

First, the intake ports have been designed to generate a more intense flow and a “vertical vortex” and the piston shape has been optimised to improve in-cylinder turbulence. As a result, fuel and intake air mix faster and form a more homogenous mixture. This leads to a higher combustion speed, which helps prevent knocking.

Advanced heat management in itself is a great way to improve fuel economy, but it is also another way to reduce the risk of knocking. The 1.2T engine was designed in such a way that the temperature of each individual part can be optimised. For example, the bottom of the pistons is cooled by oil jets and the cooling of the cylinder head is separate from that of the engine block. This means the temperature in the combustion chamber can be reduced, while keeping the block itself hot enough to reduce friction.

Direct injection makes a contribution as well, as it helps dissipate the heat in the combustion chamber, and the charge air passes through the intercooler, which uses a low-temperature cooling circuit.

Low-end torque and quick response

A low-inertia turbocharger, the VVT-iW valve system and the D-4D direct injection system work together to ensure excellent torque delivery, from the lowest engine speeds. Together with the limited-volume intake system, this ensures immediate response when the accelerator pedal is pressed.

The injection system has been developed for the 1.2T engine. Compact in design, it is perfect for use in a small displacement engine. It allows multiple injections per cycle and the optimised width and reduced length of the spray pattern ensure combustion quality, regardless of engine regime and load.

From Otto to Atkinson

The VVT-i system operates on both the intake and the exhaust side, and allows torque to be maximised at all engine speeds. In addition, the VVT-iW allows for intake valve closing to be delayed, which means the engine can operate in both the Otto and Atkinson cycle.

The Atkinson cycle is used in extremely low engine load conditions. The intake valve remains open for a fraction of time, after the compression stroke has set in, allowing part of the gas charge to be pushed back into the intake. As a result, the effective compression stroke is shortened. Pumping losses are reduced, as there is less pressure on the piston, and the throttle valve can be opened wider.

Quick and smooth stop and start

A new start control has been developed to ensure quick and smooth engine restart. When the system shuts down the engine, it controls the stop position to leave the piston half way in the compression stroke. On restart, it applies stratified injection in the first compressed cylinder to counter vibrations. And by retarding the ignition, torque increase is kept in check, preventing the engine from revving excessively, thus ensuring a calm and confident take-off.

UK MODEL RANGE

The UK Auris range has been extended to include two new equipment grades, Business Edition and Design, with equipment specifications that provide focused appeal for different customer groups.

The entry point to the line-up remains the Active grade, which delivers automatic air conditioning, power front windows, LED daytime running lights, LED rear lights and Bluetooth. The Auris Hybrid Active models further gain 15-inch alloy wheels and a colour TFT multi-information display.

Icon grade models are equipped with new-design 16-inch alloy wheels, the Toyota Touch 2 touchscreen DAB audio, multimedia control, reversing camera, leather steering wheel and gear knob trim, power rear windows and front fog lights.

The Business Edition models cater to the priorities of today's company car drivers. Standard features include Toyota Touch 2 with Go, with the latest Toyota touchscreen-controlled navigation and on-board connectivity functions. Regular long-distance drivers will appreciate the heated front seats with power lumbar adjustment, and cruise control.

Design grade, revised for the 2017 model year increases the style factor with 17-inch 10-spoke alloy wheels, Alcantara upholstery, sports front seats and rear privacy glass, together with cruise control.

At the top of the range, Excel models display numerous advanced technology features, including a more sophisticated Toyota Touch 2 with Go package, which includes voice command and text-to-speech functions and 3D mapping. Additional features include Intelligent Park Assist, LED headlights, smart entry and push-button start, 17-inch alloys, heated part-leather seats and dual-zone climate control.

The Toyota Safety Sense package is standard on all models except Active grade where it is available as an option (for full details, see the dedicated chapter in this press pack). The Toyota Touch 2 system can be upgraded to “with Go” specification on Icon and Design models.

The options further extend to a Chrome Pack (all models), Protection Pack (all models), Parking Pack (front and rear parking sensors for Icon, Business Edition and Design) and a range of rear entertainment DVD player/iPad mounting systems (all models).

AURIS TIMELINE AND UK SALES

YEAR	MONTH	EVENT
2006	October	Toyota announces Auris as its new C-segment hatchback model, succeeding Corolla.
	December	Auris is unveiled at the Bologna motor show. Auris gains five-star Euro NCAP crash safety rating.
2007	February	UK sales launched.
	April	Auris T180 launched, powered by 2.2 D-4D 180 engine.
2008	January	Introduction of sporting flagship, the Auris SR180.
	April	New SR and TR grades launched.
	July	Introduction of 1.4 D-4D 90 engine.
	November	Introduction of 1.33 Dual VVT-i engine with Stop & Start, replacing the 1.4 VVT-i petrol unit.
2009	April	Range revised with new 1.6 Valvematic engine, joining 1.4 D-4D, 2.0 D-4D (with diesel particulate filter) and 2.2 D-CAT 180 engines. New grade structure: T ₂ , TR, T Sprit and SR180.

	July	Toyota announces Auris hybrid will be built in the UK.
	September	Auris hybrid revealed at Frankfurt motor show.
2010	January	2010 model year Auris introduced with new exterior styling, revised interior and new T ₂ /SR/TR grade structure.
	March	Auris hybrid goes on sale in the UK.
2011	May	2011 model year Auris introduced, with new Edition grade (in place of T ₂) and revised equipment specifications.
2012	April	Toyota Touch introduced on Auris TR and SR, with Touch & Go available as an option.
	September	The all-new second generation Auris is revealed at the Paris motor show.
	November	New Auris production begins at Toyota's Burnaston plant in the UK.
	December	Official start of UK Auris sales. Prices are from £14,495. The new range includes full hybrid, petrol and diesel versions. Auris introduces a new grade structure for Toyota with Active, Icon, Sport and Excel models.
2013	March	The first wagon version of Auris, Auris Touring Sports, is unveiled at the Geneva motor show. Auris CO ₂ emissions are reduced to a new low of 84g/km in the Hybrid Icon model.
	July	Official start of sales of Auris Touring Sports in the UK.
2014	June	Introduction of Icon Plus grade, deletion of Sport grade.
2015	July	Auris is restyled and offered with new 1.2T turbo petrol engine.
2016	December	Introduction of 2017 model year with revised Design grade specification and provision of Toyota Safety Sense as standard on all models except for Active grade.

UK sales in 2016: all models 16,528; hybrid only 10,412

Cumulative sales since launch (2007): all models 164,512; hybrid only 48,153

TOYOTA AURIS TECHNICAL SPECIFICATIONS

1.2 Turbo	
Engine Code	8NR-FTS
Type	Four cylinders in-line
Valve mechanism	16-Valve DOHC, chain drive with VVT-iW (intake) and VVT-i (exhaust)
Displacement (cc)	1,197
Bore x stroke (mm)	71.5 x 74.5
Compression ratio	10:1
Max power (bhp/kW @ rpm)	114/85 @ 5,200 – 5,600
Max torque (Nm @ rpm)	185 @ 1,500 – 4,000
1.33 DUAL VVT-i	
Engine Code	1NR-FE
Type	Four cylinders in-line
Valve mechanism	DOHC 16-valve with Dual VVT-i
Displacement (cc)	1,329
Bore x stroke (mm)	72.5 x 80.5
Compression ratio	11.5:1
Max power (bhp/kW @ rpm)	98/73 @ 6,000
Max torque (Nm @ rpm)	128 @ 3,800
1.4 D-4D	
Engine Code	1ND-TV
Type	Four cylinders in-line
Valve mechanism	SOHC 8-valve
Displacement (cc)	1,364
Bore x stroke (mm)	73.0 x 81.5
Compression ratio	16.5:1
Max power (bhp/kW @ rpm)	89/66 @ 3,800
Max torque (Nm @ rpm)	205 @ 1,800 – 2,800
1.6 D-4D	
Engine code	1WW
Type	Four cylinders in-line
Valve mechanism	DOHC 16-valve, common rail injection, hydraulic valve clearance compensation
Displacement (cc)	1,598
Bore x stroke (mm)	78.0 x 83.6
Compression ratio	16.5:1

Max. power (bhp/kW @ rpm)		110/82 @ 4,000					
Max. torque (Nm @ rpm)		270 @ 1,750 – 2,250					
1.8 VVT-i HYBRID							
Engine Code		2ZR-FXE					
Type		Four cylinders in-line					
Valve mechanism		DOHC 16-valve with VVT-i					
Displacement (cc)		1,798					
Bore x stroke (mm)		80.5 x 88.3					
Compression ratio		13.0:1					
Max power (bhp/kW @ rpm)		98/73 @ 5,200					
Max torque (Nm @ rpm)		142 @ 4,000					
Total system max. output (petrol engine and electric motor, bhp/kW)		134/100					
Electric motor							
Motor type		Permanent magnet, synchronous					
Max. voltage (v)		650					
Max. power (bhp/kW)		80/60					
Max. torque (nm)		207					
High-voltage battery							
Battery type		Nickel-metal hydride					
Nominal voltage (v)		201.6 (168 x 1.2v cells)					
No. of battery modules		28					
Battery capacity (kW/h)		1.31					
TRANSMISSIONS		1.2 Turbo		1.33 Dual VVT-i	1.4 D-4D	1.6 D-4D	1.8 VVT-i Hybrid
Type		6MT	MDS	6MT	6MT	6MT	E-CVT
Gear ratios	1 st	3.727	-	3.538	3.538	3.818	-
	2 nd	2.045	-	1.913	1.913	1.913	-
	3 rd	1.310	-	1.392	1.233	1.218	-
	4 th	0.971	-	1.029	0.916	0.860	-
	5 th	0.764	-	0.875	0.675	0.790	-
	6 th	0.619	-	0.743	0.590	0.638	-
	Forward	-	2.480 to 0.396	-	3.333	-	2.683

	Reverse	3.333	2.604 to 1.680	3.333	3.333	4.139	2.683
Final drive ratio	Front	3.944	5.045	4.562	3.944	3.526	3.267
	Rear	3.944	5.045	4.562	3.736	3.045	3.267
PERFORMANCE		1.2 Turbo		1.33 Dual VVT-i	1.4 D-4D	1.6 D-4D	1.8 Hybrid
Transmission		6MT	MDS	6MT	6MT	6MT	E-CVT
Max Speed (mph)		124	118	109	112	121	112
0-62mph (sec)	Hatch	10.1	10.5	12.6	12.5	10.5	10.9
	Wagon	10.4	10.8	13.2	13.0	10.7	11.2
FUEL CONSUMPTION - HATCHBACK		1.2 Turbo		1.33 DUAL VVT-i	1.4 D-4D	1.6 D-4D	1.8 HYBRID VVT-i
Transmission		6MT	MDS	6MT	6MT	6MT	E-CVT
Combined (mpg)	15in wheel	-	-	51.4	-	-	80.7
	16in wheel	58.9	61.4	-	80.7	67.3	78.5
	17in wheel	52.3	55.4	-	-	65.7	72.4
Extra-urban (mpg)	15in wheel	-	-	60.1	-	-	83.1
	16in wheel	67.3	68.9	-	88.3	76.3	80.7
	17in wheel	58.9	60.1	-	-	74.3	72.4
Urban (mpg)	15in wheel	-	-	40.4	-	-	83.1
	16in wheel	47.9	51.4	-	70.6	56.5	80.7
	17in wheel	43.5	47.9	-	-	55.4	72.4
FUEL CONSUMPTION - WAGON		1.2 Turbo		1.33 DUAL VVT-i	1.4 D-4D	1.6 D-4D	1.8 HYBRID VVT-i

Transmission		6MT	MDS	6MT	6MT	6MT	E-CVT
Combined (mpg)	15in wheel	-	-	50.4	-	-	80.7
	16in wheel	58.9	58.9	-	68.9	67.3	78.5
	17in wheel	51.4	53.3	-	-	65.7	70.6
Extra-urban (mpg)	15in wheel	-	-	58.9	-	-	83.1
	16in wheel	67.3	65.7	-	74.3	76.3	80.7
	17in wheel	58.9	58.9	-	-	74.3	72.4
Urban (mpg)	15in wheel	-	-	39.8	-	-	80.7
	16in wheel	47.9	49.6	-	55.4	56.5	78.5
	17in wheel	42.8	46.3	-	-	55.4	72.4
CO₂ EMISSIONS & INSURANCE		1.2 Turbo		1.33 DUAL VVT-i	1.4 D-4D	1.6 D-4D	1.8 HYBRID VVT-i
Transmission		6MT	MDS	6MT	6MT	6MT	E-CVT
Combined g/km - hatchback	15in wheel	-	-	128	-	-	79
	16in wheel	112	106	-	92	108	82
	17in wheel	125	119	-	-	110	91
Combined g/km - wagon	15in wheel	-	-	130	-	-	81
	16in wheel	112	110	-	106	108	83
	17in wheel	126	122	-	-	110	92
Insurance groups		14E/15E		8E	9E	14E	12E
BRAKES							
Front (diameter x		Ventilated discs 277 x 26, 296 x 28 for hybrid					

thickness, mm)					
Rear (diameter x thickness, mm)	Solid discs 270 x 10				
SUSPENSION					
Front	MacPherson strut				
Rear	Torsion beam (1.33. 1.4 D-4D) Double wishbone (1.2T, 1.6 D-4D, Hybrid)				
STEERING					
Steering type	Rack and pinion, electric power steering				
Ratio	14.8:1				
Turns lock-to-lock	15/16in wheels	2.67			
	17in wheels	2.59			
Min turning radius – tyre/body (m)	15/16in wheels	5.2/5.5			
	17in wheels	5.4/5.7			
EXTERIOR DIMENSIONS		HATCHBACK		WAGON	
Overall length (mm)		4,330		4,595	
Overall width (mm)		1,760			
Overall height (mm)		1,475		1,485	
Wheelbase (mm)		2,600			
Front track (mm)	15in wheel	1,535			
	16in wheel	1,525			
	17in wheel	1,515			
Rear track (mm)	15in wheel	1,525			
	16in wheel	1,515			
	17in wheel	1,505			
Front overhang (mm)		955			
Rear overhang (mm)		775		1,040	
INTERIOR DIMENSIONS		HATCHBACK		WAGON	
Interior length (mm)		1,830		1,890	
Interior width (mm)		1,485			
Interior height (mm)		1,180 (1,15 with panoramic roof)			
Cargo space (l)	Rear seats up	435		672	
	Rear seats down	1,199		1,658	
WEIGHTS	1.2 Turbo	1.33 DUAL VVT-i	1.4 D-4D	1.6 D-4D	1.8 HYBRID VVT-i

Transmission		6MT	MDS	6MT	6MT	6MT	E-CVT
Kerb weight, hatchback (kg)	15in wheel	-	-	1,235	-	-	1,415
	16/17in wheel	1,350	1,375	-	1,315	1,435	1,415/1,425
Kerb weight, wagon (kg)	15in wheel	-	-	1,285	-	-	1,425
	16/17in wheel	1,400	1,420	-	1,385	1,480	1,425/1,465
Gross vehicle weight, hatchback (kg)	15in wheel	-	-	1,735	-	-	1,815
	16/17in wheel	1,820	1,845	-	1,820	1,890	1,815/1,840
Gross vehicle weight, wagon(kg)	15in wheel	-	-	1,765	-	-	1,815
	16/17in wheel	1,850	1,875	-	1,850	1,890	1,815/1,865
Towing capacity, (kg)	Braked	1,300		1,000		1,300	N/A
	Unbraked	450		450		450	N/A
WHEELS AND TYRES							
Wheel/tyre				15 x 6J steel, 195/65R15 15 x 6J alloy, 195/65R15 16 x 6.5J alloy, 205/55R16 17 x 7J alloy, 225/45R17			

TOYOTA AURIS EQUIPMENT SPECIFICATIONS

SAFETY	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
Driver and passenger airbag	✓	✓	✓	✓	✓
Driver and passenger side airbag	✓	✓	✓	✓	✓
Curtain shield airbags	✓	✓	✓	✓	✓

Driver's knee airbag	✓	✓	✓	✓	✓
Dual-stage (light and buzzer) seatbelt reminder	✓	✓	✓	✓	✓
Passenger airbag cut-off switch	✓	✓	✓	✓	✓
Isofix child seat mounts	✓	✓	✓	✓	✓
Height adjustable front and rear head restraints	✓	✓	✓	✓	✓
Three-point front seatbelts with pretensioners, load limiters and emergency locking retractors	✓	✓	✓	✓	✓
Three-point rear seatbelts with load limiters and emergency locking retractors	✓	✓	✓	✓	✓
Whiplash Injury Lessening (WIL) front seats	✓	✓	✓	✓	✓
Minimum Intrusion Cabin Structure (MICS)	✓	✓	✓	✓	✓
Side impact beams on all doors	✓	✓	✓	✓	✓
Head impact protection structure roof side and pillar	✓	✓	✓	✓	✓
Child proof locks on rear doors	✓	✓	✓	✓	✓
ISOFIX child seat anchors on outer rear seats	✓	✓	✓	✓	✓
ABS	✓	✓	✓	✓	✓
Electronic Brakeforce Distribution (EBD)	✓	✓	✓	✓	✓
Brake Assist (BA)	✓	✓	✓	✓	✓
Vehicle Stability Control (VSC) and Traction Control (TRC)	✓	✓	✓	✓	✓

Hill-start Assist Control	✓	✓	✓	✓	✓
Toyota Safety Sense: Pre-Crash System, Autonomous Emergency Braking, Automatic High Beam, Lane Departure Warning and Road Sign Assist	Opt	✓	✓	✓	✓
Tyre Pressure Warning System	✓	✓	✓	✓	✓
INSTRUMENTS & CONTROLS	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
Multi-information TFT display - monochrome	✓	✗	✗	✗	✗
Multi-information TFT display - colour	✓ (hybrid)	✓	✓	✓	✓
Headlamp levelling	✓	✓	✓	✓	✓
Cruise control	✗	✗	✓	✓	✓
COMFORT & CONVENIENCE	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
Electric Power Steering	✓	✓	✓	✓	✓
Tilt and telescopic reach adjustable steering column	✓	✓	✓	✓	✓
Power front windows	✓	✓	✓	✓	✓
Power rear windows	✗	✓	✓	✓	✓
Remote fuel lock release	✓	✓	✓	✓	✓
Smart entry and push-button start	✗	✗	✗	✗	✓
Push-button start (hybrid models only)	✓	✓	✓	✓	✓
Intelligent Park Assist	✗	✗	✗	✗	✓
Rain-sensing wipers	✗	✗	✗	✗	✓
Dusk-sensing headlights	✗	✗	✗	✗	✓
Auto-dimming rear-view mirror	✗	✗	✗	✗	✓

Front and rear parking sensors	Opt	Opt	Opt	Opt	✓
AUDIO, INFORMATION & NAVIGATION	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
Radio/CD player with four speakers, MP3 compatible, Aux socket and USB port	✓	✗	✗	✗	✗
Radio/CD player with six speakers, DAB radio, MP3 compatible, Aux socket and USB port	✗	✓	✓	✓	✓
Toyota Touch 2: 7in touchscreen control for audio and information with Bluetooth, USB port and rear-view camera	✗	✓	✓	✓	✓
Toyota Touch 2 with Go: 7in touchscreen control for audio and information with satellite navigation, three years of map and connectivity updates, advanced Bluetooth, access to Google Local Search, USB port and rear-view camera	✗	Opt	✓	Opt	✗
Toyota Touch 2 with Go, with additional voice recognition, text-to-speech and 3D mapping	✗	✗	✗	✗	✓
Steering wheel mounted audio controls	✓	✓	✓	✓	✓
VENTILATION	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
Automatic air conditioning	✓	✓	✓	✓	✗
Dual-zone automatic air conditioning	✗	✗	✗	✗	✓
Pollen filter/clean air filter	✓	✓	✓	✓	✓
SECURITY	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
Remote central double locking	✓	✓	✓	✓	✓
Alarm	✓	✓	✓	✓	✓

Vehicle parts marking with major parts traceable to VIN	✓	✓	✓	✓	✓
SEATING, UPHOLSTERY & TRIM	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
Cloth upholstery	✓	✓	✓	x	x
Cloth upholstery with leather bolsters	x	x	x	x	✓
Alcantara upholstery	x	x	x	✓	x
Leather upholstery	x	Opt	Opt	Opt	Opt
Heated front seats	x	x	✓	x	✓
Driver's seat height adjustment	✓	✓	✓	✓	✓
Power driver's seat lumbar support	x	x	✓	x	✓
60:40 folding rear seat	✓	✓	✓	✓	✓
Rear seat recline function	✓	✓	✓	✓	✓
Leather-trimmed steering wheel and gear knob	x	✓	✓	✓	✓
EXTERIOR	ACTIVE	ICON	BUSINESS EDITION	DESIGN	EXCEL
15in steel wheels	✓	x	x	x	x
15in alloy wheels	✓ (hybrid)	x	x	x	x
16in alloy wheels	x	✓	✓	x	x
17in alloy wheels	x	x	x	✓	✓
Space saver spare wheel	✓	✓	✓	✓	✓
Tyre repair kit (replacing space saver wheel where panoramic roof is specified)	x	x	x	✓	✓
Electrically adjustable heated door mirrors	✓	✓	✓	✓	x
LED headlights	x	x	x	x	✓

LED daytime running lights	✓	✓	✓	✓	✓
LED rear lights	✓	✓	✓	✓	✓
Electrically adjustable, retracting, heated door mirrors	✗	✗	✗	✗	✓
Body-coloured door handles and mirrors	✓	✓	✓	✓	✓
Body-coloured front and rear bumpers	✓	✓	✓	✓	✓
Front fog lamps	✗	✓	✓	✓	✓
Roof spoiler with integrated stop light	✓	✓	✓	✓	✓
Dark-tinted rear privacy glass	✗	✗	✗	✓	✓
Skyview panoramic roof	✗	✗	✗	Opt	Opt

Ref: 170103M