

THE TOYOTA YARIS

This press pack accompanied the European launch of the revised third generation Toyota Yaris in 2014. Some changes were made to the Yaris range during its time on sale and these can be tracked using the Timeline feature on the Yaris archive web page. Additional assets and information may be obtained from the Toyota press office if required.

NEW 2014 YARIS

THE NEW TOYOTA YARIS

- More dynamic and emotive design and a major advance in sensory quality
- New grade line-up to appeal to a wider customer base
- Substantially revised three-cylinder 1.0-litre engine and high efficiency hybrid
- Modified vehicle platform for better dynamic performance and comfort

The new 2014 Yaris reflects Toyota's renewed focus on design, displaying more distinctive styling inside and out. The objective has been to strengthen Yaris's emotional appeal, without sacrificing any of the original car's rational strengths, such as its packaging, efficient powertrains and durability.

Alessandro Massimino, new Yaris's Brussels-based product manager, said: "Yaris was always extremely strong in its rational dimensions. What we wanted to achieve was to connect the model not only with our customers' brains, but also with their hearts."

The new model follows the trend set by new Aygo in adopting a stronger appearance, notably with new cross-shaped frontal treatment with separate upper and lower elements. At the rear there is a redesigned bumper with integrated diffuser, new LED light clusters and a sculpted licence plate surround, all adding to the car's visual impact.

Important modifications have been made in the cabin as well, with an emphasis on comfort, driving pleasure and the quality of the materials, which have been significantly improved, looking and feeling -better. Customer appeal is further enhanced with wider equipment and colour choices.

Four engines are available – 1.0 and 1.33-litre petrol, a 1.4 diesel and a 1.5 petrol hybrid. The new three-cylinder 1.0-litre petrol unit is the first in a new Toyota family of 14 engines with greater thermal efficiency that will be brought to market in the coming year. The engine's 37 per cent thermal efficiency (the amount of energy contained in the fuel that is converted into mechanical energy) delivers improvements in fuel consumption and CO₂ emissions, to 65.7mpg and 99g/km respectively.

Likewise, fine tuning of the hybrid system in Yaris Hybrid has reduced CO₂ levels from 79 to 75g/km, with a concurrent improvement in combined cycle fuel economy to 85.6mpg.

Toyota has modified Yaris's platform to a far greater extent than would be the case for a simple model facelift, with the intention of improving roadholding, driving pleasure, comfort and NVH performance at a stroke.

The bodyshell has been stiffened with the addition of 36 extra spot welds, a new rear torsion beam and a new support beam for the dashboard. New suspension parts (springs, anti-roll bar, shock absorbers and bound stoppers), a new control logic for the electric power steering and a reduction in wind, rolling and mechanical noise combine to increase the car's overall driving pleasure.

DEVELOPED IN EUROPE, FOR EUROPEAN CUSTOMERS

The launch of the new 2014 Yaris is a major milestone in the history of Toyota in Europe. It is the first time the Brussels-based product planning and research and development departments, and the European design studio near Nice have worked together to deliver new designs and changes to a vehicle platform that will be adopted for other Toyota models around the world.

The work done in Belgium and France on fundamental aspects of the 2014 Yaris – exterior and interior design and the -platform – has been adopted for some versions of the Vitz supermini, manufactured in Japan. For Toyota Europe, this exchange of know-how is the first tangible application of the new thinking advocated in the Global Vision presented by Toyota president Akio Toyoda in 2011.

YARIS AND THE EUROPEAN SUPERMINI SEGMENT

The market for superminis – the B-segment – is approaching three million sales a year in Europe, or four million taking Russia into account, making it easily the largest new car sector. It accounts for more than one in every five cars sold in Europe, equivalent to a 20.4 per cent share of the total market in 2013.

In the same year, Yaris alone accounted for 24 per cent of Toyota's total European sales volume. Understandably, the segment is equally important to all major car manufacturers, which makes for intense competition.

In recent years this competition has prompted marked changes to the nature of the product itself. From being a small, rather rational family model, the supermini has developed to become

much more refined. Today customers are offered greater design flair, higher quality finishes, a wider choice of powertrains, and levels of technology and driveability inherited from larger, luxury models.

In this highly competitive environment, Yaris sales totalled 173,800 in 2013, with 70 per cent these to private customers. This gave it 11th place in the European new car market and sixth within the supermini segment.

Between 2011, when the current third generation Yaris was launched, and 2013, its segment share has increased from 4.2 to 6.1 per cent, thanks in particular to the launch of the hybrid and Trend versions. During the past two years the new customer conquest rate has risen from 43 to 57 per cent.

OUR GOAL: LOVE AT FIRST SIGHT

Alessandro Massimino a senior manager at Toyota Motor Europe, has led the team planning the new 2014 Toyota Yaris. “Our job is to be the link with the market,” he says. “We listen to customers and dealers, look at our competitors and try to predict future product trends. Then we combine all these elements and look at them in the context of Toyota’s overall product strategy.

“This is the starting point for our vehicle planning, finalised in the concept briefing – the product direction document that we share with the designers and engineers. Throughout the development process we monitor the project’s progress, keeping an eye on potential shifts in the market. If we foresee a change in customer requirements, we want to be ready to anticipate this and satisfy their needs.

“Working on Yaris is challenging and rewarding at the same time. It is a very important car for our brand and comes with a lot of heritage attached to it. The first generation, launched in 1999, was possibly the most innovative car in its class back then. It offered excellent packaging and some really nice features such as the 3D central digital display. Since then, innovation has always been an important element in Yaris’s identity. The second generation model achieved several firsts for its segment, such as the knee airbag and smart entry. The third generation delivered further innovation with the introduction of a hybrid powertrain. So, with any action we take, we need to ensure Yaris maintains its reputation for innovation and being a smart customer choice.

“Also, from a business point of view, we have a lot riding on Yaris. Firstly, we have a strong base of happy customers: we’ve sold more than three million Yaris in Europe since its launch here in 1999. Our goal is to make these customers even happier when they buy their next Yaris.

“Secondly, we need to take into account the importance of Yaris to our dealers. About one in four Toyotas sold in Europe is a Yaris, and the success of both Toyota showrooms and workshops depends largely on how well Yaris is received.

“Thirdly, we have to highlight the fact Yaris is built in Europe, in Valenciennes in northern France. This factory manufactures Yaris exclusively, not just for Europe but also for export. In fact about 12 per cent of production is shipped to other continents, including the USA. So we have a big responsibility towards our Toyota employees there, to ensure that we can fill the factory’s capacity. We are particularly proud that, with the launch of the 2014 Yaris, we can add a third shift at Valenciennes.”

Asked what his focus was for the 2014 Yaris, Massimino is clear: “For many people, the current Yaris was first and foremost a smart choice, but also a very rational one. They bought it because of its quality, reliability, efficient packing, or its fuel efficiency. Then, when they started using it, they came to love it. Our aim has been to start talking to the customer’s heart as well as their head, making Yaris instantly loveable, inside and out, and in the way it drives. We wanted to ensure the car feels just right, from the first time you drive it.”

NEW YARIS DESIGN

- Sharper, more assertive styling
- New interior with improved sensory quality
- Styling managed by Toyota's European design centre

For Alessandro Massimino, Yaris's Brussels-based product manager, the aim was clear: "Yaris already meets the essential requirements of supermini customers in its compactness relative to its roominess, its functional aspects and its innovative equipment, particularly its -multimedia system and rear-view camera.

"Our surveys and the very positive response to the hybrid -convinced us that we now had to move towards a more assertive style and increase the car's overall dynamism, both in terms of design and -driving pleasure."

"With this as our goal, we have worked closely with the design centre and R&D division to create the new 2014 Yaris."

EXTERIOR DESIGN

Elvio D'Aprile, who led the design programme, said: "The supermini segment is perhaps the most competitive in Europe. We had to do something which really stands out from the crowd, so our objectives were to avoid the B-segment stereotypes, to harmonise the overall style for all the powertrain derivatives and to dare to be different from the competition."

Consequently, the new 2014 Yaris has a highly distinctive exterior that displays a more dynamic execution of Toyota's contemporary frontal design language with sharp edged detailing.

The narrow upper and large trapezoidal grilles, a hallmark of Toyota's current design, now merge at the point of the Toyota emblem to form a powerful cross shape.

The emblem is underscored by a chrome trim bar which runs through the length of the upper grille into new headlamp clusters, tying the frontal elements together in a powerful, horizontal emphasis of the car's width.

The headlamps themselves use projector technology for high and low beams and the clusters incorporate LED daytime running lights (an option for Icon grade, standard on higher grades).

The lower grille is underlined by a 'floating' spoiler and draws attention to the lower part of the car and its dynamic potential, ground-hugging stance and low centre of gravity.

In profile, Yaris displays a new door belt moulding, door mirrors with an optional folding function and new-design 15 and 16-inch alloy wheels.

At the rear, a new bumper design gives the appearance of a broad, lower stance, with an

integral diffuser adding to the car's more sporting, self-confident road presence.

The lamp clusters feature a new LED graphic which adds to new Yaris's personality, using light-guide technology to create a unique lighting signature (an option for Icon grade, standard on higher grades).

The introduction of the new 2014 Yaris sees all versions – petrol, diesel and hybrid – sharing the same overall styling, with just a few subtle cues identifying each powertrain.

Elvio D'Aprile said: "The fact this project was managed entirely in Europe helped the final design enormously. We were able to hold daily discussions with engineering and product planning. Design elements that would normally have been rejected because they were incompatible with some preconception about technical specifications, suddenly became negotiable. As a result we were able to really carry our vision through from first proposals to the final car."

INTERIOR DESIGN

Pierre Romeo was in charge of the interior design for the new 2014 Yaris. He said: "The design is the result of three main objectives drawn from customer feedback. First, to enhance the feeling of roominess and dynamism in the cabin. Second to improve the sensory quality of the environment. And third, to combine an overall visual simplification with better colour variation and more sophisticated finishes."

The upper instrument panel has been made thinner, giving the dashboard a stronger horizontal line, and the upper surface of the driver's instrument binnacle has been restyled to give a slimmer appearance. In conjunction with these changes, the door panel has also been redesigned with a more fluid look, a larger soft-touch area and greater functionality.

The centre console has been raised by 23mm so that the length of the gear lever can be reduced by 30mm, improving the ergonomics of gear changes. A closed storage area has also been added to the console.

The upper instrument panel has a new grain effect that has a better tactile quality and less glossy appearance. It is complimented by a thicker trim band.

Yaris's trademark sculpted central dashboard panel has gained thicker soft padding and its surface is now finished in PVC. Different graining patterns – Animal, Technical or Geometrical – are used according to model grade.

Soft-touch finishes cover a greater area around the cabin. Throughout, the previous bright chrome trim has been replaced by a satin finish that gives a more modern and sophisticated appearance.

All-new seat trims are provided, with a new fabric pattern and colour for each grade. The differentiation between the grades has been strengthened with the addition of new interior colour schemes, with red and black joining the established grey and dark grey.

A TRULY EUROPEAN PROJECT

Serkan Karaman is a senior project manager at Toyota's R&D centre near Brussels. Karaman, who is in charge of the development of the 2014 Yaris, speaks about the change this model brought about in Toyota Europe's way of working.

"In the past, project management for model changes on this scale was always done in Japan. Of course Europe provided input and we were given specific tasks to carry out here, but the schedule was set by Toyota in Japan and they made the decisions. In the case of the 2014 Yaris, this has changed.

"For the first time, Europe was able to take the lead in the development of a global vehicle. We drafted a blueprint for Yaris to be as competitive as possible in the B-segment. For this, we listened to customers and dealers, benchmarked the strongest of our competitors and then added our view on how we see the segment evolving in the coming years. Afterwards, the results were adapted to fit other markets such as the US and Japan, but the fact that we began with the most demanding region for this type of vehicle gave us an excellent starting point."

In line with Toyota's Global Vision, in which Europe was given responsibility for the global planning of A, B and C-segment models, Serkan and his colleagues were given a lot of freedom to make sure the 2014 Yaris would meet the growing expectations of European B-segment customers.

He says: "We were truly in the driver's seat. Toyota's A and B-segment chief engineer was key to the process. He trusted us to select the right priorities and more than once had to defend our choices with top management, especially since we were really pushing the boundaries, making this change significantly more than a regular facelift. The interior design changes and the platform upgrade in particular go far beyond what is expected from a mid-life upgrade. Hence, in some respects this is almost a new generation model."

Karman goes on to explain what the biggest changes were in this new way of working: "There are three main differences compared to what we were used to. First, since the project was run from Europe in terms of planning, design and engineering, there was a full and shared understanding among all parties of what changes were required to meet the tastes of European drivers and to face our European competitors head-on. Secondly, our close geographical relationship meant we could work very quickly. Meeting by meeting, we were able to make important decisions with all the stakeholders present and move the project along. And finally, thanks to the previous point, we could also take the occasional risk; because we could make faster progress, we sometimes had the luxury of trying some more adventurous ideas, knowing that if they didn't work out, we still had time to implement an alternative.

"One of the biggest game-changers was perhaps the fact that body-design engineering was in Europe. This is the division that links design and engineering. They take the stylist's vision and turn it into something that can actually be produced according to Toyota's strict quality and performance requirements. Often this requires compromise, but in this project, since the body-designers were also based in our Brussels office, it was easy to discuss things with them. They

know the market as well as we do and they have a good understanding of what is important to the European customer. This allowed us to challenge our traditional way of working and find solutions which can meet these technical requirements with the least compromise in styling. Without the benefit of this, there are several elements in the car's interior and exterior design that would have not made it through to production."

So does the 2014 Yaris represent the peak of Toyota Europe's engineering independence? Not according to Karaman: "We started this project about three years ago, just after the market launch of this generation of Yaris. In the meantime, partly thanks to this project, our expertise has grown further. My colleagues are working on several models, often with an even greater degree of independence. I can't be too specific about future products, but in the coming years you will see even more of an impact from Toyota's European engineering team."

NEW MODEL RANGE DESIGNED FOR WIDER APPEAL

- New Yaris range tailored to suit a wider range of customers
- UK line-up of Active, Icon and new Sport and Excel grades
- New interior colour schemes

The new Yaris introduces a new UK grade structure that is designed to help broaden the appeal of the model to a more diverse customer base. The established Active and Icon grades are joined by a new Sport trim and, at the top of the range, Excel.

Each grade has its own character, differentiated by details such as the interior colour schemes and treatment of various interior and exterior elements, including the lower grille, wheels, seats, centre console and instrument panel.

For example, the lower grille variations include metallic or piano black, and the grille surrounds are chrome, satin chrome or piano black. Yaris Hybrid grades have a piano black lower grille with satin chrome surround.

High equipment levels feature throughout the range, with a leather-trimmed steering wheel, air conditioning and the latest Toyota Touch 2 multimedia system fitted as standard from Icon grade. Climate control is standard on Excel and all Hybrid models.

Ten exterior colours are available, including new Island Blue metallic and, exclusively for Hybrid models, Avantgarde Bronze.

Customers can upgrade their new Yaris with a range of options and options packs that add further style, functionality and sophistication. Elements include Toyota's Skyview panoramic roof, LED daytime running lights and rear lamps, rear privacy glass and the Toyota touch 2 with Go multimedia system with navigation. Sport models can further be specified with vibrant Piri Piri red interior trim, including door panels, front seat upholstery inserts and soft-touch instrument panel.

A new range of option packs has been designed to bring together themed equipment and styling elements to boost Yaris's specification and street presence. The practical Protection Pack (for Icon, Sport and Excel) adds mudflaps, rear bumper protection, front and rear parking sensors and carpet mats; the Style Pack (Icon and Sport) provides aluminium scuff plates and bumper protection plate and a chrome finish for the door sills, boot and diffuser trims and tailpipe). Icon models can be further upgraded with the Design Pack, adding LED daytime running lights and rear light clusters, plus rear privacy glass.

Exclusively for Excel models, the Appearance Pack introduces a rear spoiler, rear privacy glass and a Skyview (fixed) panoramic roof, and the Smart Pack offers Smart Entry, push-button start (standard on Hybrid Excel) and an auto-folding function for the door mirrors.

UK GRADES AND KEY FEATURES

ACTIVE	ICON adds	SPORT adds	EXCEL adds
			(to Icon)
Power front windows	15in alloy wheels	16in machined alloy wheels	16in silver alloy wheels
6-speaker audio system with USB and Aux-in	Projector headlights	LED daytime running lights	LED daytime running lights
7 airbags	Body colour-matched electrically adjustable, heated door mirrors and door handles	Rear LED lights	Rear LED lights
Tyre pressure monitor	Toyota Touch 2	DAB radio	DAB radio
Vehicle Stability Control and traction control	Rear-view camera	Rear privacy glass	Part-leather seats
	Air conditioning (climate control on Hybrid)	Rear spoiler	Cruise control
	Front fog lamps	Rear disc brakes	Rain-sensing wipers
	Bluetooth for phone and audio streaming	Option Packs: Protection, Style	Dusk-sensing headlights
	Leather steering wheel audio and telephone switches	Optional red P!ri Piri interior trim	Climate Control
	Option Packs: Protection, Style, Design		Option Packs: Protection, Appearance, Smart

UK PRICES

The new 2014 Toyota Yaris is available to order now, with customer deliveries from August. On-the-road prices start at £10,995.

GRADE	BODY	ENGINE	TRANSMISSION	OTR PRICE
Active	3dr	1.0 VVT-i	5MT	£10,995

Active	5dr	1.0 VVT-i	5MT	£11,595
Icon	3dr	1.0 VVT-i	5MT	£12,745
Icon	5dr	1.0 VVT-i	5MT	£13,345
Icon	3dr	1.33 Dual VVT-i	6MT	£13,495
Icon	5dr	1.33 Dual VVT-i	6MT	£14,095
Icon	5dr	1.33 Dual VVT-i	Multidrive S	£15,095
Icon	5dr	1.4 D-4D	6MT	£15,595
Icon	5dr	1.5 VVT-i Hybrid	e-CVT	£16,195
Sport	5dr	1.33 Dual VVT-i	6MT	£14,995
Sport	5dr	1.33 Dual VVT-i	Multidrive S	£15,955
Excel	5dr	1.33 Dual VVT-i	6MT	£15,695
Excel	5dr	1.33 Dual VVT-i	Multidrive S	£16,695
Excel	5dr	1.5 VVT-i Hybrid	e-CVT	£17,695

THE RIGHT OFFER FOR EVERY CUSTOMER

Jose Manuel Mendez is a senior manager in Toyota Motor Europe's marketing management team. His job is to bring the 2014 Yaris to market, co-ordinating activities with his colleagues in Toyota's -national networks across Europe. He explains the opportunities the new car opens up.

"With more than three million Yaris on the road in Europe, we have a very solid customer base to build on, all the more because we know that Yaris customers tend to be very satisfied with their car and very loyal. But we also know that, if we want to grow, we need to draw in new customers from other brands. Until now, we have been doing so mainly thanks to our hybrid powertrain. Hybrid will certainly continue to be a strong weapon for us, but I'm also sure that Yaris's more distinctive new design and equipment grades will attract the attention of many customers who might not have noticed us in the past.

"Thanks to the platform changes and the improvements in NVH, the car has at once become a more rewarding drive and a more comfortable package. So customers attracted by the car's looks and specs will not be disappointed when they take it for a test drive."

With petrol, diesel and hybrid powertrains on offer, an important part of the sales process will be to ensure that individual customers are supported in making the right engine choice.

"In today's increasingly congested traffic, there is no doubt that hybrid gives the most relaxing driving experience," says Mendez. "The combination of an automated gearbox and the ability to drive in full electric mode at city traffic speeds takes much of the hassle out of stop-start driving. Fuel prices, CO₂-based taxation and solid residuals also often make the hybrid the most sensible choice in terms of cost-of-ownership.

"For people whose annual mileage is low, or who want to limit their initial spend, petrols can still provide the most economical approach. -Depending on the power they want, we can offer them our 1.0 or 1.3.

"For those who cover many miles, mainly at higher speeds, the 1.4 D-4D makes sense, both in terms of cost and performance. So we really do have the right choice for every customer, we just need to make sure that they understand the strengths of each powertrain when they come in to buy a car."

POWERTRAINS

- Widest choice in the supermini segment – two petrol, one diesel and one hybrid
- Extensively revised three-cylinder 1.0-litre engine with high thermal efficiency
- Hybrid powertrain improved to further reduce fuel consumption and emissions

EFFICIENCY AND PERFORMANCE

The new Yaris is available with four powertrains – two petrol, one diesel and a -hybrid. The -hybrid system, which already accounts for more than a quarter all Yaris sales in the UK, benefits from adjustments which have brought its CO₂ emissions down further, from 79 to 75g/km, a level that qualifies it for exemption from the inner London congestion charge. Extremely fuel efficient (85.6mpg combined cycle) and clean (virtually zero NOx and particulate emissions), this powertrain remains a unique proposition in the supermini segment.

Yaris Hybrid also stands out for its near-silent running, comfort and easy handling, especially around town where the hybrid system allows the car to be driven for certain distances in electric mode, or with limited use of the petrol engine. The automatic transmission adds to the all-round smooth, quiet and comfortable driving experience.

Yaris Hybrid's powertrain features a four-cylinder Atkinson cycle 1,497cc engine that is 50mm shorter than the 1.8-litre unit used by Prius and Auris Hybrid; it is also 17kg lighter. Its features include a cooled exhaust gas recirculation system, an electric water pump, a low-friction distribution chain, an intake manifold made of a composite material and a compact exhaust manifold.

In the Atkinson cycle, compression and expansion are asymmetrical. The inlet valves close later than in a traditional Otto cycle, delaying the compression. This creates a higher expansion ratio for less compression, reducing pumping losses and converting combustion energy to engine power more effectively. In addition, the exhaust temperature is lower than that in conventional engines. The EGR system reintroduces cooled exhaust gas into the combustion chamber, which also helps limit pumping losses and further reduce engine operating temperatures.

The 1.33 Dual VVT-i petrol and 1.4 D-4D diesel engines have undergone secondary modifications aimed at reducing noise and vibration. The diesel benefits from a new torque rod and both engines feature better insulation for the exhaust system.

These engines are paired with six-speed manual transmissions, engineered to achieve the best balance of performance and fuel economy. Top speed for both is 109mph; combined cycle fuel consumption for the 1.33 petrol is 57.9mpg (with 15in wheels) and for the 1.4 D-4D 72.4mpg.

The petrol is available with Toyota's Multidrive S continuously variable transmission. More

compact and lighter than a conventional automatic, it combines an easy, comfortable and smooth drive with optimum engine torque control that delivers considerable fuel savings in city traffic. The system also provides a manual mode with seven fixed gear ratios that can be selected using the shift lever or paddle controls on the steering wheel.

IMPROVED 1.0-LITRE THREE-CYLINDER ENGINE

The three-cylinder 1.0-litre petrol engine has undergone significant changes to improve its performance, reduce emissions and cut noise and vibration levels. Compliant with forthcoming Euro 6 emissions standards, it achieves an excellent thermal efficiency level of more than 37 per cent (the proportion of energy contained in the fuel which is converted into mechanical energy). This compares to an average thermal efficiency for mass-produced petrol engines of between 30 and 35 per cent. One of the effects of this is a reduction in CO₂ emissions from 110 to 99g/km.

Toyota engineers have achieved this principally by optimising the power/weight ratio, for example by creating a combined cylinder head and exhaust manifold that is more compact and weighs less.

To reduce fuel consumption while maintaining performance, the engine's compression ratio has been increased to 11.5:1. Further development of Toyota's VVT-i variable valve timing allows the engine to switch between Atkinson and Otto cycles. The engine runs on the Atkinson cycle at low loads for better fuel efficiency when driving around town and cruising at low revs. With higher engine loads and at high speed, it returns to the Otto cycle.

The intake ports and pistons have been redesigned to increase the tumble effect (vertical swirl) in the combustion chamber, promoting combustion speed. Scavenging and combustion chamber cooling has been increased to delay knocking. And large volumes of cooled exhaust gas recirculation are used to reduce pumping losses.

Lastly, friction levels have been reduced by using diamond-like carbon (DLC) for the valve actuators; making changes to the surface treatment of the pistons; and better engine cooling management, mainly through changing the shape of the oil sump to ensure the engine gets up to temperature more quickly.

Matched to a five-speed manual gearbox, the three-cylinder engine is not only cheap to run, it also communicates a good torque feel to the driver that's well-suited to city driving.

DRIVING PLEASURE

- Improved handling and greater comfort
- New torsion beam
- Suspension and steering modifications

The new 2014 Yaris features comprehensive, customer feedback-driven improvements to its ride comfort and handling, and significant reduction in NVH. Serkan Karaman, senior project manager, said: “For the first time in the history of the R&D division in Europe, we have taken the initiative and made important changes to the platform with regard to vehicle dynamics that go way beyond the boundaries of a facelift.”

IMPROVED RIDE COMFORT AND HANDLING

The new Yaris has a more rigid upper and lower body structure, which offers a more direct and linear response to steering inputs. At the same time, it delivers a more comfortable ride and maintains balanced body control.

Front-end rigidity has been increased thanks to the use of a new windscreen bonding material and thicker dashboard bulkhead. The instrument panel beam and its connections to the dashboard and central tunnel have been stiffened to improve steering response.

Central and rear body rigidity have also been increased, with 36 additional spot welds, redesigned tunnel bracing to add rigidity to the vehicle floor, a redesigned wheelhouse area, and a reinforced rear bumper attachment to reduce body roll deformation.

The rear suspension has been redesigned to accommodate a new, stiffer torsion beam with softer coil springs and a new, long, polyurethane-bound stopper. This improves ride comfort while maintaining good body control, and also improves the vehicle’s balance of front and rear grip, reducing understeer tendencies.

Softer springs also feature in the front suspension and the introduction of rebound springs within the shock absorbers increases front anti-roll stiffness, which improves handling and reduces body roll when cornering.

New shock absorber valve technology reduces the transmission of vibrations from the road surface and improves ride quality without compromising handling agility.

Finally, a new control logic in the electric power steering takes advantage of the extra bodysHELL stiffness and suspension changes to give the driver significantly improved steering feel, responsiveness and accuracy.

NVH REDUCTIONS

As well as a reduction in unwanted vibration thanks to a stiffer bodysHELL and re-tuned suspension, the 2014 Yaris also benefits from markedly lower interior noise levels.

Toyota engineers used customer feedback to identify three noise reduction priorities. First, reduction of high-frequency noise from the engine and road surface; second, reduction of low frequency noise from the engine; and third, reduction of wind noise when driving at speed.

To minimise the penetration of high-frequency noise through the dashboard bulkhead and vehicle floor, the dashboard silencer has been completely re-engineered. The sound absorption material in the dashboard panel and console has been upgraded and a new noise-optimised carpet has been introduced.

The effort invested extends to detailed steps such as reducing the size of the feed-through apertures in the dashboard silencer to maximise its surface area. A similar principle has been applied to the instrument panel and console box cavities, which now feature double the previous quantity of sound-absorbing material.

These measures improve cabin sound performance both under acceleration and at constant speed driving.

Low-frequency engine booming has been minimised by using a new engine torque rod on versions powered by the 1.4 D-4D diesel engine, and by relocating the exhaust system hangers.

Wind noise intrusion at high speed has been cut by using a new, spoiler-shaped cowl louvre that reduces air turbulence at the base of the windscreen; a new door weather strip design which improves sealing, particularly around the door mirror area; and doubling the amount of sound absorption material in the door cavity.

MULTIMEDIA

- New Yaris adopts new Toyota Touch 2 multimedia touchscreen system
- Toyota Touch 2 with Go, with navigation, connected services and applications
- New AUPEO! And COYOTE applications for Yaris
- Toyota the first volume manufacturer to make Google Street View and Panoramio available via an on-board multimedia system

TOYOTA TOUCH 2

The new Toyota Yaris benefits from Toyota Touch 2, an updated version of Toyota's affordable touchscreen multimedia system. It comes with a new higher resolution seven-inch screen that uses four times as many pixels as the original system, for bright, sharp images with a deeper 3D effect.

The package includes Bluetooth for hands-free phone calls, sending and receipt of text messages and audio streaming; a rear-view camera; vehicle information, including trip data, climate control profile; and management of settings for door locking and lighting.

The screen menu has been expanded to incorporate more information, including air conditioning settings. There is a new lay-out to show the operation of the hybrid system and the screen supports 'drag and flick' control for easier use.

It also enables simple connection of iPods and MP3 players via USB or Bluetooth, and, where available, will display album, artist and track information. Audio system options can also be controlled using the screen.

It comes with a DAB digital radio as standard, with an FM link that automatically switches the system to FM reception when there is no DAB digital signal.

Toyota Touch 2 is also "MirrorLink"-ready, allowing users to connect compatible smartphones and operate them entirely using the touchscreen.

TOYOTA TOUCH 2 WITH GO

Toyota Touch 2 with Go, an option on all grades apart from Active, adds a wealth of extra functions and advanced connectivity, all controlled simply and clearly using the same touchscreen system. Representing excellent value for money, it was developed with European customers in mind.

The leading feature is the full map navigation, with a new screen design that provides clear display of signposts, junctions and lane guidance. An intuitive detour function uses real-time traffic information to warn of congestion ahead, calculate the likely delay and suggest a suitable alternative route.

Traffic information, located on the map itself, takes the form of a 'traffic bar,' alerting the driver to any congestion ahead and the expected delay.

The system also provides speed limit indications and safety camera warnings, and in the event of an emergency will give direct access to the emergency services or AA breakdown assistance, automatically providing exact vehicle location details on the display screen.

Using the Toyota Online function, the system gives on-board connectivity to a range of services, including Toyota real-time HD traffic data from TomTom, Google Street View, Panoramio and Google Local Search – the largest and most up-to-date search database in the world.

Toyota's customer portal also allows users to connect with their vehicle online. For example, Google Maps can be used to add a destination to the navigation system from home or office. Points of Interest can also be downloaded for entry as destinations.

A range of applications are available free for 12 months with Toyota Touch 2 with Go, easily obtained following a quick registration process via Toyota's customer web portal, including Toyota Real Time Traffic and services such as fuel prices, weather and parking information. Two new applications have been launched with the 2014 Yaris: AUPEO!, a personal internet radio; and COYOTE, a traffic sharing information service.

Toyota Touch 2 with Go also upgrades the multimedia base unit to incorporate a contact person image display.

YARIS'S SUCCESS BOOSTED BY HYBRID TECHNOLOGY

- European hybrid market is the world's fastest-growing
- Smooth, quiet and intuitive driving experience
- 60 per cent of Toyota hybrid customers are conquest sales

Europe is the world's fastest-growing market for hybrid vehicles. Sales grew by 34 per cent in 2013, with the region accounting for 12 per cent of global hybrid sales.

In the same period, European sales of Toyota hybrids rose by around 43 per cent, with one in five new Toyota passenger vehicles sold being a hybrid.

The fact hybrid is now accepted as a mainstream powertrain has led to increasingly strong residual values, with customers giving Yaris -Hybrid equal consideration as petrol and diesel versions.

When Yaris Hybrid was launched two years ago, it was inconceivable that a hybrid supermini could achieve almost 50,000 sales a year. It has achieved this feat, and production of the car at Toyota's Valenciennes factory has recently passed 100,000 units.

So far this year, Yaris Hybrid has accounted for 31 per cent of total Yaris sales in western Europe. It is the best-selling alternative powertrain in the supermini (B) segment and the second-best-selling model in the entire alternative powertrain market in the region (including electric vehicles, hybrids and plug-in hybrids), just behind Toyota's Auris Hybrid.

Despite the fact more than two thirds of Europeans live in cities (a figure expected to increase by a further 10 per cent by 2050), 74 per cent of them still travel by car, making congestion and pollution growing problems.

Yaris Hybrid counters the stress of urban driving with compact dimensions and a powertrain that is not only the most fuel and emissions-efficient in its class, but which also offers a smooth, quiet and intuitive driving experience. Acceleration is seamless from standstill, and running is near-silent when the car is powered by its electric motor alone, with zero CO₂, NO_x and particulate emissions.

These attributes are generating significantly stronger brand loyalty for Toyota hybrids than for petrol or diesel powertrains, or for hybrids produced by any other manufacturer. Hybrid also plays a leading part in attracting new customers to the brand, with six out of 10 Toyota hybrid customers representing a conquest sale.

With rival manufacturers only now producing hybrids for diverse market segments, Toyota's early investment in the technology has helped it maintain a clear lead. It anticipates that by 2020, 50 per cent all passenger vehicles will be equipped with a hybrid powertrain.

FROM GLOBAL VISION TO A REGIONAL APPROACH

- Toyota Europe to take a leading role in planning compact cars
- Toyota Motor Europe's largest regionalised project, for global implementation

Toyota's Global Vision, led by president Akio Toyoda in 2011, outlines new thinking that recognises how Toyota's 17 R&D centres need to be given greater responsibilities and more freedom in order to meet the different needs and desires of customers around the world.

This change in attitude in the group's global strategy led to the creation of specialist hubs in each world region. Particular attention has been paid to Europe, where the car culture is most firmly established, and where vehicle manufacturers have built world-renowned expertise.

TOYOTA EUROPE'S GLOBAL ROLE

As Europe is the cradle of the compact car, Toyota Motor Europe (TME) has been given a leading role in defining the company's future A, B and C-segment cars.

TME has also become Toyota's skill centre in three areas that are fundamental to the European car market: the importance of the diesel engine, customer expectations for perceived quality, and customer demands for vehicle dynamics.

This specialisation is being achieved through increased collaboration with European suppliers, advanced research work with European universities, and local alliances, such as the agreement with BMW for diesel engines.

Ultimately the fruits of this better understanding of the European market will be shared worldwide and will help in the development of Toyota products on a global scale.

All of these new responsibilities fall specifically to Toyota's product planning department, its R&D centre at Zaventem, near Brussels, and its ED2 design and development centre in the south of France. All three already have to their credit the restyled Avensis (2012), Verso (2013), Verso 1.6 D-4D (2014) and now the new Yaris.

NEW YARIS, THE PRODUCT OF REGIONALISATION

Toyota has made significant investments in money and resources to deliver the new Yaris, the latest development of its best-selling model in Europe. Almost £70 million and 576,000 hours of R&D work were committed to the project, and more than 1,000 new parts have been produced. Toyota Motor Europe invested 75 per cent of the total, compared to the 25 per cent it contributed to the launch of the third-generation Yaris in 2011.

The focus of the product planning team has been to strengthen the features and qualities which have made Yaris a success, in particular the unique proposition of its hybrid powertrain (Yaris Hybrid now accounts for almost one in three Yaris sales in Europe), multimedia system and rear-view camera.

Analysis of press coverage and public surveys (including the opinions of non-Yaris customers) has helped Toyota gain an in-depth insight into what the restyling programme should achieve. Comments converged on the need to give the car an emotive, dynamic dimension, in addition to its widely appreciated functional qualities.

The research confirmed that the key purchase consideration for European supermini customers is a car's appearance; both the design and the sensory quality have to be just right.

These findings were backed up by market trends analysis, enabling the product planning team to give a clear brief to Toyota's ED² design studio and its R&D engineers, and to initiate a close working collaboration between the departments at each step of the project.

From a design point of view, it was recognised that it was important to affirm the car's character, an initiative that had already been launched with the styling of the hybrid model in 2012. For their part, engineers at Toyota's R&D Centre in Zaventem, Belgium, produced the specifications needed for the technical modifications, after carrying out in-depth investigations into the current Yaris's comfort, performance and sound insulation.

To meet their targets for noise and vibration, they had to develop a new torsion beam and modify parts of the car's platform itself. This was a first for the Zaventem centre, following which it decided to add an early prototype stage so that modifications can be validated earlier in the process. The normal prototype stages then allow for final adjustments to be made and for more detailed studies to be conducted into their impact on the car's general performance.

With product planning, design and R&D operations all relatively close to each geographically, it was easier for the project stakeholders, including parts suppliers, to hold frequent meetings. This made final adjustments easier to agree and sped up the decision-making process.

Serkan Karaman, Senior Project Manager at Zaventem, said: "What makes this project different from others we have worked on is the greater development content compared to a typical product facelift.

"We were able to take the lead in Europe for a global vehicle in which content is being adopted for other regions, such as Japan and North America. In the past, project management was mostly undertaken in Japan. They decided the schedule and assigned specific tasks to the team in Europe. This time we were in the driving seat, we had the freedom to decide what to do, when to do it and how to go about it.

"As a result, the new Yaris really incorporates European know-how and European taste. Our operations teams have also gained invaluable experience from the project."