

GENEVA 2017

# TOYOTA PRESS KIT

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**BETTER** WAY

## NEW TOYOTA YARIS

The Yaris success story continues



**TOYOTA GAZOO RACING**

Pushing the limits for Better

**TOYOTA i-TRIL CONCEPT CAR**

Toyota's vision on urban mobility in 2030



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# NEW 2017 TOYOTA YARIS

## The Yaris success story continues with comprehensive improvement programme

Toyota has carried out a €90 million improvement programme to strengthen the success of the Yaris, introducing new styling and equipment grades, enhancing handling and safety and introducing a new, highly efficient 1.5-litre petrol engine. Currently selling in record numbers, the new Yaris looks set to reach even greater heights.

**THE INTRODUCTION OF THE NEW**, significantly revised Yaris range is set to add to further impetus to the success of Toyota's small hatchback. In fact, the car has continued to increase its share of the B-segment (supermini) market in Western Europe since the launch of the third generation of the model in 2011, rising to more than 6.5 per cent and 208,000-plus sales in the past year.

This performance provides a strong platform on which to strengthen the Yaris' established qualities and broaden its appeal to new and increasingly discerning customers in a highly competitive marketplace. Design, quality, performance and safety are key purchase considerations and have been the focus areas for Toyota's programme of improvements.

Hybrid power remains a unique selling point for the model, a powertrain option that is currently leveraging more than 40 per cent of all Yaris' European sales.

The Yaris has a strong European heritage, having been manufactured at Toyota Motor Manufacturing France's Valenciennes factory since 2001. Production passed three million units in 2016, with cars not only supplied throughout Europe, but also sent for export

around the world, including Africa, North America and Middle East markets in Asia.

### **A GLOBAL PROJECT, LED BY EUROPE**

Toyota has handed much of the responsibility for shaping the new Yaris to its European operations, reflecting the strength and quality of the B-segment market in the region. Notably, this is the first time that changes developed for the Yaris in Europe will be adopted directly for its sister Vitz model, manufactured in Japan.

Going much deeper than a simple mid-life "facelift," the €90 million programme sees the introduction of more than 900 new parts to improve the car's design, dynamic performance and safety. The car's new look, with significant changes to the front and rear styling, has been created at Toyota's ED<sup>2</sup> design studio in the South of France,

### **EXTERIOR DESIGN**

Design is a key consideration for customers in the B-segment and the team at Toyota's ED<sup>2</sup> European design centre has focused on giving the new Yaris a more active and dynamic look while at the same time communicating a more refined direction. To achieve this, both the



front and rear of the car have been given a new design architecture that presents a stronger three-dimensional quality, a greater emphasis on horizontal lines to express a wide stance and low centre of gravity.

The result is a more dynamic and emotional shape that amplifies the qualities of Toyota's Keen Look and Under Priority design principles.

The redesign of the front of the car features a new front bumper that creates a "catamaran" shape with broad sections flowing down from new headlight units, flanking the wide, trapezoidal grille. The result is a more pronounced three-dimensional effect, and the sense of a wider, more planted road stance. A simplified design in the area around the central Toyota emblem adds to the overall dynamic impact.

The grille itself benefits from new treatments that contribute to the new Yaris's more resolute look, with a honeycomb design for Bi-tone grades and arrangement of "stepped" horizontal bars for other grades that again delivers a more eye-catching, 3D effect. The integrated fog light housings either side of the grille have also been reworked with a more compact recess and a vertical line that

arcs smoothly to follow the outer edge of the bumper – featuring a bright chrome trim detail on higher grade versions that's also available as an option on Mid grades.

#### **NEW HEADLIGHT DESIGNS**

The new headlamp units further develop the Keen Look qualities in the frontal design, producing a new lighting signature that expresses confidence and individuality. Where LED daytime running lights are fitted, light guides create a forked frame around the main lamp that flows seamlessly into a single line; this line extends beyond the projector headlamp in a matching chrome trim element that extends towards the central Toyota emblem. This is available on higher grade models, while on Mid and Mid+ versions the distinctive forked pattern is created using slim chrome trim bars within the unit.

#### **DYNAMIC PROFILE VIEW**

The new Yaris' side view helps generate added dynamism with more emphasis given to the axis line of the body from front to rear. Here, the new tailgate and rear light units contribute to the sense of extra length and tautness in



the car's profile. There is also a new lower door moulding which adds a sportier look by leading the eye neatly into the line of the new rear lamp cluster, finished in piano black or chrome, according to model grade.

The range of wheels for new Yaris includes three new designs: a 15-inch silver wheel cover for the Mid grade; a multi-spoke 15-inch alloy for Mid+ models; and a new 16-inch wheel with a machined face finish for the Chic hybrid model.

### **REVISED REAR DESIGN WITH NEW TAILGATE, BUMPER AND LAMP CLUSTERS**

At the rear the added sense of refinement is reflected in a stronger central mass, created by a new tailgate design that extends the horizontal emphasis with new rear light clusters that extend from the rear wings onto the door itself. According to model grade, the rear lights feature LED stop and tail lights with light guides, asserting the new Yaris' premium quality and, like the front lights, presenting a distinctive illumination signature.

Following the same concept as the new frontal design, a "catamaran" architecture has been created at the rear of the car with a new

bumper design that harmonises perfectly with the lines of the tailgate, projecting the sense of a low centre of gravity and wide on-road stance. The powerful quality of this design is supported by a re-shaping of the area framing the licence plate and the addition of black garnish details in the lower bumper, edged with reflector and finished with a pattern of straked, horizontal lines.

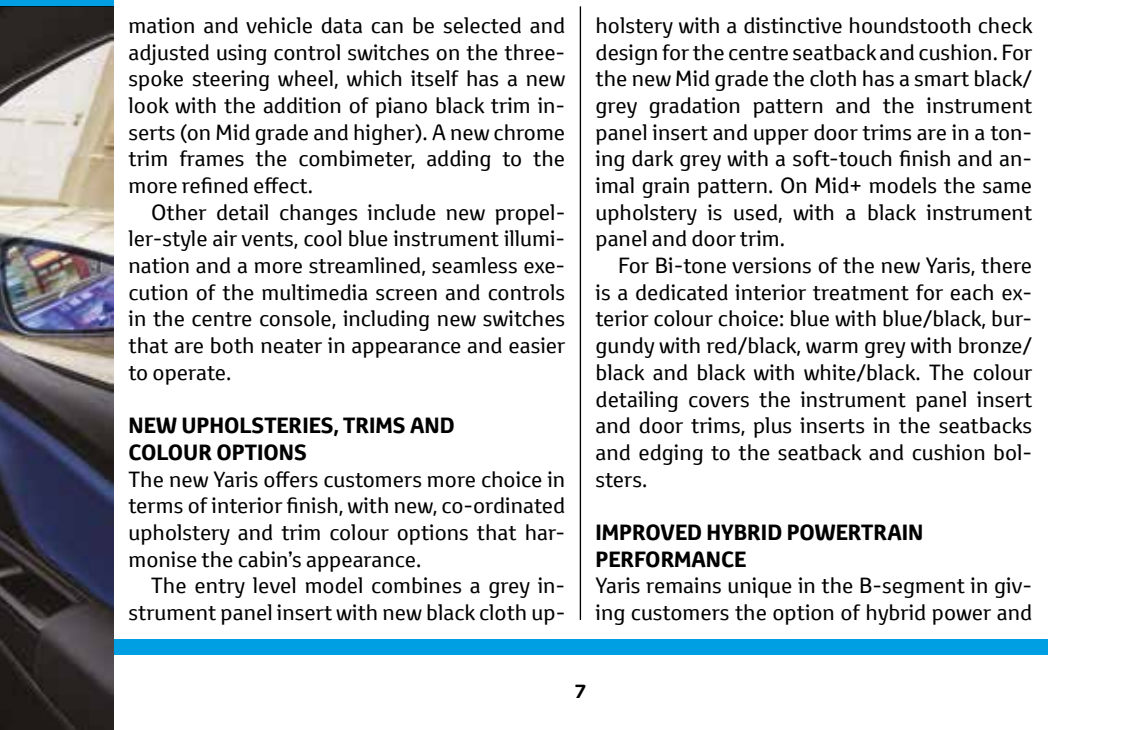
Two new colours have been added to the range of paint finishes for the Yaris – Hydro Blue and Tokyo Red, taking the total to 10 different shades.

### **INTERIOR DESIGN**

The focus for changes to the Yaris' interior was to keep the look and ambience of the cabin feeling fresh and modern, introducing new upholsteries, colours and trim details and upgrading the instrumentation and controls to ensure excellent ergonomics and HMI (human-machine interface) performance.

The combimeter in the driver's instrument binnacle has a new "binocular" arrangement of twin analogue dials flanking a new 4.2-inch colour TFT multi-information display, fitted as standard from Mid grade. Different infor-





mation and vehicle data can be selected and adjusted using control switches on the three-spoke steering wheel, which itself has a new look with the addition of piano black trim inserts (on Mid grade and higher). A new chrome trim frames the combimeter, adding to the more refined effect.

Other detail changes include new propeller-style air vents, cool blue instrument illumination and a more streamlined, seamless execution of the multimedia screen and controls in the centre console, including new switches that are both neater in appearance and easier to operate.

#### **NEW UPHOLSTERIES, TRIMS AND COLOUR OPTIONS**

The new Yaris offers customers more choice in terms of interior finish, with new, co-ordinated upholstery and trim colour options that harmonise the cabin's appearance.

The entry level model combines a grey instrument panel insert with new black cloth up-

holstery with a distinctive houndstooth check design for the centre seatback and cushion. For the new Mid grade the cloth has a smart black/grey gradation pattern and the instrument panel insert and upper door trims are in a toning dark grey with a soft-touch finish and animal grain pattern. On Mid+ models the same upholstery is used, with a black instrument panel and door trim.

For Bi-tone versions of the new Yaris, there is a dedicated interior treatment for each exterior colour choice: blue with blue/black, burgundy with red/black, warm grey with bronze/black and black with white/black. The colour detailing covers the instrument panel insert and door trims, plus inserts in the seatbacks and edging to the seatback and cushion bolsters.

#### **IMPROVED HYBRID POWERTRAIN PERFORMANCE**

Yaris remains unique in the B-segment in giving customers the option of hybrid power and



the chance to experience the smooth, relaxed and intuitive drive Toyota's world-leading technology provides, together with excellent fuel economy and best-in-class exhaust emissions (from 75 g/km CO<sub>2</sub>). In developing the new Yaris, Toyota engineers listened to customer feedback to understand where improvements might be made to achieve an even quieter and more comfortable ride with better handling and steering accuracy.

### THE REAL BENEFITS OF HYBRID DRIVING

Toyota is deploying a smart data-gathering tool to help European retailers demonstrate to customers how hybrid technology works and the real benefits it can deliver.

The Driveco box is already being used in seven European markets for Hybrid models including Yaris Hybrid and is set for pilot trials in nine more. An automatic driver log system, it collects data on test drive journey distances, times and average speeds, plus the proportion of the journey in which car operates in all-electric EV mode, with zero fuel consumption and zero tailpipe emissions. The information can be

downloaded and viewed using a smartphone or tablet app, along with comparisons with previous performance, and with the levels achieved by other drivers.

Driveco has already logged data from 900 Yaris Hybrids and more than half a million kilometres of driving in all kinds of environments, from city centres to mountain routes. The combined results reveal that together the cars have operated in EV mode for more than 54% of the time, achieving real-world average fuel consumption of 5.0 l/100 km.

### AN EVEN QUIETER DRIVE

Although Toyota hybrids are noted for their quiet performance, new Yaris' engineers undertook a thorough review to ascertain where improvements in noise and vibration levels could be made, in particular to reduce any noise intrusion from the powertrain under acceleration.

As a result, a comprehensive range of measures has been introduced, including the installation of redesigned engine mounts, a larger engine roll restrictor, new front driveshafts and front





subframe and a modified air box intake system. Additionally, the exhaust system has been adjusted with a new sub-silencer.

**RIDE COMFORT AND HANDLING**

The new engine mount design also helps the new Yaris Hybrid deliver a more comfortable ride, with less vehicle shake caused by engine movement when driving over uneven surfaces. Changes have also been made to the shock absorbers' damping force and valve design to enhance comfort while maintaining handling performance.

The electric power steering has been tuned for less friction feel and smoother response to driver inputs. Cornering traceability has been improved by more closely aligning the driver's steering effort with the vehicle's response.

**NEW 1.5-LITRE PETROL ENGINE**

The new Yaris marks the introduction of a new 1.5-litre four-cylinder petrol engine to the range to replace the current 1.33-litre unit, developed in anticipation of future Euro 6c emissions standard and RDE (Real Driving Emission) homologation requirements. The new unit is being manufactured by Toyota Motor Industries Poland.

The engine is a member of Toyota's ESTEC (Economy with Superior Thermal Efficiency) family, benefiting from new technical features that deliver better performance and a more enjoyable drive, while at the same time achieving a reduction of up to 12 per cent\* in fuel consumption, using the current NEDC test parameters.

In the new Yaris the naturally aspirated 1,496 cm<sup>3</sup> engine develops a maximum 111 DIN hp/82 kW and peak torque of 136 Nm at 4,400 rpm. Its responsiveness ensures a comfortable drive both in urban traffic and on the open road. Compared to the 1.33-litre unit, it is 0.8 seconds quicker in acceleration from 0 – 100 km/h (11.0 versus 11.8), while at overtaking speed in 5th gear the improvement is more than a second, moving from 80 to 120 km/h in 17.6 seconds compared to 18.8.

Toyota's world-leading experience in hybrid powertrain technology has proved valuable in addressing the challenges presented by the new Euro 6c emissions standard and RDE homologation cycle, witnessed in the new engine achieving a 38.5 per cent thermal efficiency value, placing it among the best on the market. This has been achieved by using a high, 13.5:1 compression ratio, adopting a cooled exhaust gas recirculation (EGR) system and extending

SPECIFICATIONS	1.0 VVT-i	1.5 DUAL VVT-iE	1.5 VVT-i HYBRID	
POWERTRAIN				
Engine code	1KR-FE	2NR-FKE	1NZ-FXE	Motor Generator
Type	3 in-line cylinders	4 in-line cylinders	4 in-line cylinders	Permanent Magnet synchronous Motor
Displacement (cm³)	998	1,496	1,497	
Compression ratio	11.5 : 1	13.5 : 1	13.4 : 1	
Max power (DIN hp/kW @ rpm)	69/51 @ 6,000	111/82 @ 6,000	100/74 (total system)	45 kW
Max torque (Nm @ rpm)	95 @ 4,300	136 @ 4,400	111 @ 3,600-4,400 (petrol engine)	169 NM
PERFORMANCE	5 M/T	6 M/T	CVT	PLANETARY GEAR SYSTEM
Max Speed (km/h)	155	175	175	165
0 to 100 km/h (sec)	15.3	11.0	11.2	11.8
FUEL CONSUMPTION (l/100)	5 M/T	6 M/T	CVT	PLANETARY GEAR SYSTEM
Urban (*with Start&Stop)	from 4.8* to 5.2	from 5.7*to 6.3	from 5.0* to 6.0	3.1
Extra-urban (*with Start&Stop)	from 3.7*to 3.8	from 3.9* to 4.2	from 3.8* to 4.1	3.3
Combined (*with Start&Stop)	from 4.1*to 4.3	from 4.6* to 5.0	from 4.2* to 4.8	3.3
CO <sub>2</sub> EMISSIONS (g/km)	5 M/T	6 M/T	CVT	PLANETARY GEAR SYSTEM
Combined (*with Start&Stop)	from 95* to 99	from 103* to 112	from 96* to 108	75



#### EXTERIOR DIMENSIONS (MM)

Overall length	3,945
Overall width	1,695
Overall height	1,510
Wheelbase	2,510
Tread front (15"/16")	1,485/1,465
Tread rear (15"/16")	1,470/1,455

#### CARGO (DM³)

Capacity rear seats up (VDA)	286
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the variable valve timing operation so that the engine can switch from the Otto to the Atkinson cycle to gain optimum efficiency in different driving conditions.

The higher compression ratio has been made possible by the combustion chamber design and new pistons, which promote a homogeneous air/petrol mixture and rapid combustion. Cooled EGR reduces combustion temperature and also helps prevent engine knocking. Furthermore, the volume of reinjected inert gases allows for a reduction in pumping losses at low and medium loads, improving overall engine efficiency.

The adoption of a new variable inlet valve timing system – VVT-iE\*\* – allows the engine to switch from the Otto to the Atkinson cycle (and vice-versa) in a fraction of a second. Controlled electronically, closure of the intake valve is delayed, reducing the compression phase and further helping reduce pumping losses (Atkinson cycle), and enabling a prompt return to the Otto cycle for better performance under high loads. The phase shift of the exhaust camshaft is hydraulically controlled.

The engineers also focused on improving fuel consumption at sustained motorway cruising speeds, leading to the use – for the first time on a Toyota – of a water-cooled exhaust manifold. By limiting the gas temperature, this avoids the need for mixture enrichment to reduce combustion temperature at any motorway driving speed. As a result, both fuel consumption and exhaust emissions are reduced.

In common with other Toyota ESTEC engines, the 1.5-litre unit benefits from the latest measures designed to reduce friction losses.

#### TOYOTA SAFETY SENSE AS STANDARD

Toyota puts safety at the heart of its commitment to building ever-better cars, ensuring that the benefits of advanced technologies are not limited to high-end, high-specification models, but are made available across the board. True to this ethos, it has made Toyota Safety Sense a standard feature on all new Yaris models.

This ensures that every car in the line-up is equipped with systems that can help prevent

\*with CVT - \*\* Variable Valve Timing – Intelligent Electric Motor

## TOYOTA PUTS SAFETY AT THE HEART OF ITS COMMITMENT TO BUILDING EVER-BETTER CARS



an accident happening, or lessen the consequences if an impact does occur. The package includes a Pre-Collision System with Autonomous Emergency Braking, Automatic High Beam, Lane Departure Alert and, on models higher than Entry grade, Road Sign Assist.

The Pre-Collision System uses a front-mounted laser to monitor the road ahead, warning the driver of an imminent collision risk and preparing the brakes to deliver emergency braking the moment the brake pedal is pressed. If the driver fails to respond to the warning, the system will trigger Autonomous Emergency Braking to slow the car to reduce the severity of any impact.

Automatic High Beam detects both the headlights of oncoming traffic and the tail lights of vehicles ahead, automatically switching between low and high beam to avoid dazzling other drivers, while maintaining the best possible illumination for night-time driving.

The Lane Departure Alert monitors lane markings on the road surface and helps prevent accidents caused by the vehicle moving out of its lane. If the Yaris begins to deviate

from its lane without the turn indicators being used, the system alerts the driver visual and audible warnings.

Road Sign Assist helps ensure drivers are kept informed about key road warnings and commands, even if they have driven past a road sign without noticing it. The system recognises signs such as speed limits and “no overtaking” restrictions and presents them on the colour TFT multi-information display in the driver's combimeter. If the driver exceeds the speed limit, the system will activate a warning light and buzzer.

To improve safety for people on board, the rear seatbelts now feature force limiters and pretensioners. The head restraints have been redesigned to provide better protection against whiplash injury and the shape of the curtain airbags has been revised. Child seat installation has been made easier with adjustments to the Isofix anchoring system and labelling.



# NEW YARIS GRMN

High performance inspired  
by Toyota's motorsport  
engineering

The new Yaris GRMN is more than a simple hot hatch, it is a thoroughbred performance model that directly benefits from the engineering and tuning skills Toyota is developing in its motorsport programme. Powered by a new, 1.8-litre super-charged engine producing more than 210 DIN hp, it promises speed, poise and rich driver rewards.





**THE NEW YARIS GRMN** is an authentic, full-blooded and highly tuned hot hatch, inspired and influenced by Toyota's return to the FIA World Rally Championship (WRC) in 2017 with TOYOTA GAZOO Racing and the Yaris WRC after a 17-year break from the competition. The WRC is the pinnacle of the sport and is sure to provide Toyota with new challenges and opportunities to further develop its people, explore new technologies, and experience various road conditions around the world, helping it in its pursuit of making ever-better cars.

The motorsport influence is displayed in dedicated performance features that broadcast the car's special qualities, both in its exterior styling and its driver-focused interior. It also sports unique paint finish – white with red and black flash detailing on the bonnet and sills, echoing the livery of the thoroughbred rally car.

Toyota called on its European teams to design the Yaris GRMN and develop its engine and interior, while responsibility for the chassis and braking system fell to colleagues in Japan. Production will be handled by Toyota Motor Manufacturing France's plant in Valenciennes.

Although successful GRMN performance models have previously been sold in Japan, the Yaris GRMN is the first to be marketed in Europe, on sale from early 2018.

### **SUPERCHARGED ENGINE**

The Yaris GRMN is unique in the European hot hatch market in being powered by a supercharged engine. This highly responsive 1.8-litre unit will produce more than 210 DIN hp, driving the front wheels through a six-speed manual transmission and enabling best-in-class times both for the sprint from nought to 100 km/h and acceleration from 80 to 120 km/h in fourth gear.

### **CHASSIS AND SUSPENSION**

To ensure the engine's prodigious power is translated into a genuinely rewarding drive, the Yaris GRMN has a reinforced chassis with additional bracing, including an extra bar between the front suspension towers.

It benefits from suspension tuned through extensive testing on the Nürburgring's Nord-schleife with significant input from Toyota GAZOO Racing's motorsport activities, plus a

Torsen limited-slip differential for better traction and handling. Shorter springs allow the car to hug the ground more closely and these are teamed with dedicated shock absorbers developed with Sachs and a larger diameter front stabiliser bar.

The car is also equipped with highly efficient performance brakes, with large ventilated discs and four-pot front callipers.

### **SPORTS STYLING**

The Yaris GRMN's performance credentials are clearly broadcast in its styling. Offered exclusively in three-door form, it rides on BBS 17-inch multi-spoke alloys and is fitted with a bespoke, black wing-type rear spoiler.

The features included dedicated front and rear bumper designs, a rear diffuser and a distinctive centre exhaust tailpipe.

The cabin is an equal expression of the Yaris GRMN's performance focus, with front sports seats designed specifically for the car by Toyota Boshoku, providing the best-in-class body holding and support.

The authentic performance details include a small-diameter, leather-wrapped steering wheel – shared with the GT86 – that incorporates a centre line mark to help the driver with accurate car positioning. There is also an aluminium sports pedal set and a redesigned combi meter that reflect the car's special sporting character.







# TOYOTA GAZOO RACING

## Pushing the limits for Better

In 2015 Toyota united its motorsports activities into TOYOTA GAZOO Racing, placing motorsports at the core of its commitment to make 'ever-better cars'.





**KIICHIRO TOYODA**, Toyota's founder, said in 1952: "Motorsport is more than just entertainment. It is vital to the development of the car industry. Just as athletes test their capabilities by competing with all their strength in the Olympics, automakers use racing as an opportunity to push a vehicle's performance to the limits and compete for supremacy, enabling them to discover new ways of advancing automotive technology."

TOYOTA GAZOO Racing activities - of which motorsports is a crucial element - focus on 3 main

pillars: improving cars for the road, developing the company's human resources and sharing the excitement of driving with customers and fans.

By participating in highly demanding series such as the FIA World Rally Championship (WRC), FIA World Endurance Championship (WEC), Toyota pushes its cars to the limit, in the pursuit of making ever-better cars.

Also, TOYOTA GAZOO Racing South Africa, who shares the same vision with TOYOTA GAZOO Racing, is competing in Dakar.

## **A GREAT RETURN TO THE WORLD RALLY CHAMPIONSHIP (WRC)**

From smooth asphalt to rough, unpaved roads, WRC is a merciless and riveting high-speed chase through nearly every type of public road in the world. Drivers must instantly judge the road conditions in this high-impact, full-throttle challenge.

But building world rally cars is about far more than just theory. It's about crafting a vehicle that can be driven to the limit on each and every type of road, based on thorough first-hand experience and knowledge. With this in mind, TOYOTA GAZOO Racing is back in the WRC in 2017, after a 17 year break.

Led by Tommi Mäkinen – four-time FIA World Rally Champion – and with a strong driver lineup consisting of Jari-Matti Latvala (car No.10), one of the fastest rally drivers in the world, and the vastly experienced Juho Hänninen (car No.11), the TOYOTA GAZOO Racing World Rally Team (WRT) has all the ingredients in place for this exciting challenge.

For more than a year the days of the team were filled with thousands of hours in the workshop, testing programmes around Europe and a great deal of teamwork. Everything was focused on a single goal: to be ready for the start of the Rallye Monte-Carlo.

While Toyota has enjoyed considerable success in the World Rally Championship in the

past, the Yaris WRC project represents a new chapter in the company's long and illustrious racing history. With its continued commitment to making ever-better cars through motorsport, TOYOTA GAZOO Racing WRT is keeping its expectations for 2017 firmly in check as it prioritises car development and learning over outright results.

Nevertheless, the team's WRC return began on a positive note, surpassing all expectations on its debut. Jari-Matti Latvala and his co-driver Miika Anttila finished second in the Rallye Monte Carlo with Juho Hänninen and Kaj Lindström completing the rally in 16th place, scoring valuable points in the Power Stage on the last day.

In Rally Sweden, the result was even better as Latvala claimed the first rally win for TOYOTA GAZOO Racing WRT and Hänninen scored more manufacturer points. The team is now second in the manufacturers' championship, while Latvala heads the drivers' standings.

The next stop on the World Rally Championship, round three, is Rally Mexico on 9-12 March. This will be the first gravel round of the year and the first run in high temperatures, with the stages at high altitude as well, which deprives the engine of oxygen. As a result it represents another brand new challenge for TOYOTA GAZOO Racing.

**BY PARTICIPATING IN HIGHLY DEMANDING MOTORSPORT  
SERIES TOYOTA PUSHES ITS CARS TO THE LIMIT, IN THE  
PURSUIT OF MAKING EVER-BETTER CARS**





**THE TEAM WILL ENTER THREE TS050 HYBRIDS AT  
THE 6 HOURS OF SPA-FRANCORCHAMPS AND  
THE LEGENDARY 24 HOURS OF LE MANS**





## INSPIRED TO WIN

### THE 24 HOURS OF LE MANS

Having faced a tough 2016 World Endurance Championship (WEC) season - with near misses in Spa and Le Mans - TOYOTA GAZOO Racing's final tally from the season's nine races stood at seven podium finishes and 229 points, with the TS050 HYBRID earning third place in the manufacturers' World Championship.

This year, the team will enter the new season stronger than before, and ready to fight at the front.

To demonstrate its commitment to endurance racing and to enhance its chances of victory in the 24 Hours of Le Mans, the team will enter three TS050 HYBRIDs at the 6 Hours of Spa-Francorchamps and the legendary 24 Hours of Le Mans itself.

Argentina's José María López joins WEC race winners Mike Conway and Kamui Kobayashi in the #7 TS050 HYBRID. José María, 33, was a GP2 race winner before moving to the World Touring Car Championships where he won the last three titles.

The 2014 FIA World Endurance Drivers Champions Sébastien Buemi and Anthony Davidson will again team up with Kazuki Nakajima, the only Japanese driver to earn pole position at Le Mans, to compete together for a full season in car #8.

Stéphane Sarrazin, twice a runner-up with Toyota at Le Mans, will lead the team's third car entry. His two team-mates in the #9 will be announced during the course of March while the updated TS050 HYBRID will be presented at TOYOTA GAZOO Racing's WEC press conference on 31 March at Monza.



**28 TOYOTA VEHICLES COMPLETED DAKAR 2017,  
REINFORCING THE COMPANY'S REPUTATION FOR TOUGH,  
DURABLE ENGINEERING**





## **DAKAR SHOWCASES THE DURABILITY AND TOUGHNESS OF TOYOTA VEHICLES**

TOYOTA GAZOO Racing South Africa started the 2017 edition of the iconic rally raid on a charge. Qatari driver Nasser Al-Attiyah and French navigator Mathieu Baumel won the short opening stage of the race convincingly, while Giniel De Villiers and Dirk Von Zitzewitz recorded the fifth-fastest time on the first stage. This set up both crews perfectly for the first full Dakar stage.

Stage 2 produced the expected fireworks, with Al-Attiyah and Baumel leading for extended periods, before settling for the second-fastest time on the day. De Villiers and Von Zitzewitz maintained their position, finding their stride and giving the Toyota Hilux a great outing.

But then came Stage 3, and massive disappointment for the team. Al-Attiyah and Baumel started the day assertively, and set the pace through most of a long and tricky stage. They looked set to record a second stage win for Toyota at Dakar 2017 until the Qatari driver ran wide near the end of the stage, and a jagged roadside pothole ripped the right rear wheel from the car, severely damaging the suspension in the process.

With Al-Attiyah and Baumel out of the race, all attention shifted to De Villiers and Von Zitzewitz. But Stage 3 also brought disappointment for them as a fuel pressure problem halted their charge. This tumbled them down the order, and it was an uphill battle from there. In the end, they finished the Dakar 2017 in fifth place overall.

Although TOYOTA GAZOO Racing South Africa may not have achieved what they set out to this year, they can certainly be proud of their performance in undoubtedly the world's toughest rally raid.

In addition to three Hilux finishing in the top ten (P4: Roma/Haro Bravo, P5: De Villiers/Von Zitzewitz, P9: Rautenbach/Howie), 25 other Toyota vehicles completed the race. Reinforcing the company's reputation for tough, durable engineering, they made up almost half of the entire field of finishing cars - considerably more than any other manufacturer.

# TOYOTA i-TRIL CONCEPT CAR

## Toyota's vision on urban mobility in 2030

Developed by Toyota Motors Europe (TME) in collaboration with the company's ED<sup>2</sup> design studio in Nice, the new i-TRIL Concept showcases numerous innovative aspects of Toyota's research into ever better and more engaging environmentally-friendly mobility solutions.

**MAKING ITS WORLD** debut at the 2017 Geneva motor show, and featuring Active Lean technology, the new i-TRIL concept represents a viable alternative to A and B segment cars, other EV products, public transport and motorcycles.

Heralding a change in mindset for motorists, the i-TRIL is designed to be more than a mere commodity. Driven by Akio Toyoda's commitment to bring passion and driving pleasure to all future Toyota vehicles, it embraces the company's Waku Doki (a Japanese term translating as 'Beat of the Heart') philosophy to demonstrate that future EVs can still stimulate the senses and set the pulse racing.

A different type of transport for those who still wish to have fun whilst driving even at slow speeds in the urban environment, it represents all the best elements of future mobility beyond mere eco-friendliness.

### **A NEW SMESTO-DWELLING CUSTOMER**

The i-TRIL has been developed with a new type of customer in mind: a sophisticated, single, 30-50 year old active female with two children and a vibrant lifestyle. And she lives in a SMESTO (Small to Medium Sized Town)...

European Union studies on the future of cities have suggested that, rather than further

expansion of already vast metropolitan areas such as London and Paris, the continent will witness a steady increase in growth of built-up areas adjacent to existing cities, in the manner of medium-density suburban pockets of development.

The number of such SMESTOs in Europe is already significant, and their inhabitants travel extensively to take children to school, shop, visit restaurants and socialise. As such, their sometimes difficult, stop-start mobility requirements are for small, agile and urban-friendly vehicles.

Toyota's research with SMESTO-dwelling target customers identified an active mother often torn between 'Me Time' and spending time with her children 'Kids Happy'; increasingly confident in her behaviour, she refuses to be a slave to those children.

The new i-TRIL Concept embraces and merges this apparent conflict of loyalties through three functions: Active Lean technology; 'Relaxed Engagement'; and the unique One-plus-Two seating layout of the vehicle.

### **ACTIVE LEAN TECHNOLOGY**

Driven by electric motor power and weighing just 600 kg the i-TRIL is some 2,830 mm long and 1,460 mm high. It features 1,200 mm front





and 600 mm rear track widths, with a hinge between the rear axle and cabin allowing the vehicle body and front tyres to lean whilst the motorised rear tyres remain perpendicular to the road surface at all times.

With the front wheels and fenders clearly separated from the main bodyshell to facilitate the leaning of both the former and the latter, the cabin consists of a smooth, dark, cocoon-like central mass with no belt-line or door handles.

This is visually overlaid with a surface wrapping which undergoes a seamless transition between the body colour it shares with the front wheel arches and the transparent cockpit glazing, whilst emphasising the powerful forward movement inherent in the i-TRIL's silhouette.

The butterfly-opening doors are hinged on the sloping A pillars to maximise the opening area and ease of cabin entry to even the rear

seat passengers, whilst requiring no more opening room within a car parking space than conventional doors.

The robustness of the vehicle architecture and the added width of the rear cabin to accommodate a two-seat bench are reinforced from behind by the full-width combination lamp design above a clearly separate rear axle structure which incorporates the electric motor drive system.

Using their previous experience with Active Lean technology, Toyota's engineers discovered that a lean angle of 10 degrees proves perfect in combining enhanced stability and grip, greater fun and driving pleasure, and less risk of passengers suffering from car sickness.

Allied to 25 degrees of front wheel steering, this technology equips the i-TRIL with a turning circle of just 4 metres (similar to that of the Toyota iQ), making it not only highly engaging to drive at even modest speeds, but also very



much at home in even the most congested urban environment.

Aspiring an actual driving range of more than 200 km between charges, the new Toyota concept is capable of operating autonomously, but has been specifically conceived to provide such driving pleasure that owners will wish to drive themselves for the majority of the time.

### RELAXED ENGAGEMENT

From the perspective of 'Relaxed Engagement', target customers were asked to sample a range of driving positions. They chose a slightly higher, yet relaxed and laid-back driving position - almost akin to that of a go-kart- with good engagement of the steering module.

This latter is important, because the i-TRIL has no pedals, enabling the driver to stretch out their legs in comfort, and wear whatever style of footwear they choose without risk of losing control of the vehicle. The base of the driver's seat features a central rib to offer a snug, highly-supportive fit for the occupant's legs.

Steering, acceleration and braking is all carried out via drive-by-wire technology. The i-TRIL is operated by left- and right-hand control nodes (in the manner of computer mice or

game controllers) which extend towards the driver's hands beneath the stretch fabric covering the manual driving module.

During autonomous driving, the left- or right-hand instrument panel extremities automatically illuminate whenever the i-TRIL is about to enter a corner, letting all occupants know which way the cabin is about to lean.

There are no other controls or switchgear, and no driver's instrument binnacle. In manual driving mode, a simple head-up display gives the driver all the information they need. A completely new approach to the Human Machine Interface (HMI) focuses on voice activation technology, communicating with the vehicle's Artificial Intelligence for the control of multimedia and infotainment systems.

### ONE-PLUS-TWO SEATING LAYOUT

With its One-plus-Two seating layout, the i-TRIL redefines interior space and spaciousness. Current interior design philosophy hinges on everything being built around the driver, with rear seat passengers very much regarded as second class citizens.

Allied to the vehicle's Active Lean technology, the i-TRIL interior allows the rear bench seat passengers to become much more in-





involved in the driving experience. It brings the children very much closer to their mother, without actually interrupting her space.

Better yet, it affords them far greater forward visibility, uninterrupted by a front seat headrest immediately ahead of them. The front seat headrest is actually fixed to the roof of the vehicle, and pivots down into position when the i-TRIL is switched on. Children also benefit from extensive legroom either side of the front driver's seat. And there is, in fact, room for three adults on board as a result.

Careful consideration has been given to how the driver enters and exits the vehicle as easily as possible.

When the cabin doors are opened, they remove a section of floor with them to narrow its footprint and make stepping out simpler, with a shorter stride. Moreover, the front seat may be swivelled through up to 20 degrees to allow the driver to both enter and leave the cabin more decorously.

The interior has been designed specifically to avoid an overtly automotive feel; rather, the alcantara trim, fabric rear bench seat upholstery and wooden floor finish -all made from recycled materials- offer occupants a more comfortable environment styled on a comfortable and exclusive living space in the home.

The ribbed texture of the rear bench seat fabric radiates outwards to emphasise the width of the rear cabin space. In addition, the tread pattern to the Goodyear 19" front and 20" rear tyres has been exclusively cut to match the design of the interior trim.

Despite its clear separation from front (Me Time) to rear (Kids Happy), the interior space is still unified by the overlapping of the front alcantara and rear bench fabric upholstery, and by the ducting system which distributes ventilation airflow.

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