

# Ferrari

# Media



## Ferrari 488 GTB: extreme power for extreme driving pleasure

Forty years on from the unveiling of Ferrari's first ever mid-rear-engined V8 berlinetta, the 308 GTB, the Prancing Horse opens a new chapter in its 8-cylinder history. The 488 GTB name marks a return to the classic Ferrari model designation with the 488 in its moniker indicating the engine's unitary displacement, while the GTB stands for Gran Turismo Berlinetta.

The new 488 GTB not only delivers unparalleled performance, it also makes that extreme power exploitable and controllable to an unprecedented level even by less expert drivers. An exceptional engine and sophisticated aerodynamics combined with refined vehicle dynamic controls radically improve the already razor-sharp responsiveness of Ferrari's road cars to near-track level.

Power (670 cv), engine and vehicle response times (0.8 s and 0.06 s respectively) give the 488 GTB a unique character and guarantee unmatched driving pleasure to drivers of all abilities.

To achieve this result, Ferrari drew on its experience in both F1 and GT racing, in which the 458 holds the WEC title and has won its category in two editions of the 24 Hours of Le Mans. The new model also exploits to the full the know-how gleaned by Ferrari engineers over the last decade through the XX

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programme which makes extreme track-only cars available to gentleman test-drivers.

The 488 GTB's all-new 3902 cc V8 turbo is at the top of its class in terms of power output, torque and response times. It delivers 670 cv at 8,000 rpm and a response time to the accelerator of just 0.8 seconds (at 2,000 rpm in third gear), making it the new benchmark for this kind of architecture, thanks in part to innovative work carried out on the turbine to reduce friction and inertia. Ferrari's engineers dedicated great attention and resources to perfecting the 488 GTB's sound too, creating a new soundtrack that is full, clear, progressive and totally distinctive, as expected from any Prancing Horse engine.

The car's aerodynamics also made a pivotal contribution to performance: its 1.67 E index figure is a new record for a production Ferrari, and is the fruit of 50 per cent more downforce than the previous model along with lower drag. The greatest challenge was achieving these two goals simultaneously. Several innovative elements were specifically developed for this purpose, not least a double front spoiler, base bleed side intakes and, at the rear, active aerodynamics coupled with a revolutionary, Ferrari-patented blown spoiler design. The design of the sophisticated aerodynamic underbody is derived from the 458 GT and incorporates vortex generators.

Thanks to subsystems and electronic controls that make its power and performance instantly available and controllable, the 488 GTB is the most responsive production model there is, with blisteringly-fast response times comparable to those of a track car. Specific gear ratios combined with Variable Torque Management deliver incredibly fast shifts and acceleration, with progressively greater torque values in higher gears. The evolved version of Ferrari's side slip angle control system (Side Slip Control 2 - SSC2) is more



precise and less invasive, providing greater longitudinal acceleration out of corners. Aside from integrating with the car's F1-Trac and E-Diff, the SSC2 now also controls the active dampers which renders the car's dynamic behaviour during complex manoeuvres even flatter and more stable.

These cutting-edge solutions are reflected in the car's styling which accentuates its sporty character yet retains the pure, elegant lines typical of Ferrari tradition. The cockpit-style cabin design is inspired by Formula 1 and focuses on fully immersing the driver in the driving experience.

## **Powertrain**

### New V8 turbo: a brilliant encapsulation of Ferrari's DNA

Regardless of the model or its mission, the heart of every Ferrari is its engine which must, of course, deliver the classic Ferrari power unit qualities: blistering performance combined with high revs, razor-sharp responsiveness, powerful acceleration at all speeds and an exhilarating soundtrack. The new V8 sported by the 488 GTB is the Maranello engineers' latest response to the challenge to constantly set new benchmarks of excellence.

This 3902 cc power unit is the Prancing Horse's most high performance engine ever with zero turbo lag and a unique, seductive soundtrack. It delivers 670 cv at 8,000 rpm with a specific power output of 172 cv/l, a new record for a road-going Ferrari, maximum torque of 760 Nm in seventh gear and a throttle response time of just 0.8 seconds at 2000 rpm in third gear. Consequently, the 488 GTB sprints from 0-100 km/h in 3 seconds flat and from 0-200 km/h in just 8.3.



These superb performance figures are the result of a focus on achieving maximum efficiency across the board. In terms of combustion, this means new high-tumble intake ports specially shaped to optimise the flow coefficient and swirl motion in the combustion chamber for a homogeneous charge even at high revs, combined with 200-bar direct fuel injection. The new V8 also has an ion-sensing system which measures ionising currents to control ignition timing and adaptively predict misfires, as well as a multi-spark function which enables the spark advance to be maximised at all revs.

Mechanical efficiency is guaranteed by an oil pump that supplies oil either at high pressure or low pressure, reducing hydraulic power requirements by up to 30 per cent compared to a conventional pump. Cylinder heads with roller finger followers reduce the power absorbed by the valvetrain by 10 per cent at low revs thanks to the reduction of friction between the valve stems and the tappets and the camshafts and the finger follower roller.

The use of the flat-plane crankshaft architecture guarantees maximum compactness, lower mass and helps improve the engine's internal fluid-dynamics by ensuring equal pulse spacings and thus balance between the cylinders.

The turbos are on ball-bearing-mounted shafts to reduce friction and the compressor wheels are in TiAl, a low-density titanium-aluminium alloy, which, thanks to its lower inertia, ensures maximum spool-up speed. In addition, twin-scroll technology directs the exhaust gases from each cylinder through separate scrolls and increases the efficiency of the exhaust pulses for maximum power. A special seal on the turbine housing ensures a minimum gap between it and the compressor wheel for maximum efficiency. All these solutions contribute to the class-leading response time with zero turbo lag.



As the revs rise, the V8's soundtrack increases in volume and clarity, in line with the increase in power. Pivotal to the sound in the cabin are the exhaust headers with longer, equal-length tubing and the flat-plane crankshaft. The soundtrack was further enhanced by an in-depth study of the harmonics and tonality at different engine speeds, another area in which Ferrari has always excelled.

## **Aerodynamics**

### Record-breaking efficiency for exceptional performance

Aerodynamic solutions derived from Maranello's experience on the track augment downforce without increasing drag, resulting in an efficiency figure of 1.67, a record for a road-homologated Ferrari. Downforce is 50 per cent higher than on the previous model despite drag being reduced.

The front of the car is dominated by the central Aero Pillar and an F1-inspired double spoiler. The latter consists of two sections: the top element is designed to work in conjunction with the duct to manage the flow of air going into the radiator, thereby improving its efficiency. The larger, lower section generates suction which pulls the air flow towards the lower part of the underbody, generating downforce.

The Aero Pillar has the job of managing the powerful air flows striking the front of the car and distributing them along both the longitudinal and transverse plane. On the longitudinal plane on the lower section, it accelerates and directs an extremely fast flow to the central underbody, while on the transverse plan on the upper section, it deflects the flow towards the radiator mouth, controlling its expansion to improve the efficiency of the radiating masses.



The 488 GTB has an innovative aerodynamic underbody that incorporates vortex generators, special curved aerodynamic appendages which accelerate the air thereby reducing pressure. The result is that the car's underbody is "sucked" down to the ground and downforce is higher but drag is not. The front section of the underbody is flat, generating downforce, which pushes the car lower to the ground whilst having the smallest possible impact on the flow arriving at the front strakes, contributing to overall downforce generation of 325 kg at 250 km/h.

The large rear diffuser has curved fences which optimise the expansion of the huge amount of air channelled under the car, boosting downforce. They also protect the diffuser's internal channels from the turbulence generated by the rear wheels, thereby reducing drag.

The rear diffuser features variable flap geometry controlled by a CPU, integrated with other vehicle control systems, which modifies the expansion of the diffuser. Depending on the driving conditions, this adjusts the balance between increased downforce (with flaps closed: in corners and under braking) and drag reduction (with flaps open: on straights and under acceleration).

The blown spoiler is a new solution. Air enters an intake at the base of the rear screen and exits via the bumper. This geometry enables the surface taking the aerodynamic load to have a more pronounced curvature which, in turn, increases the upward deflection of the flow on the rear screen, thus boosting downforce. This solution avoids having to extend the height of the rear spoiler and thus helps keep drag low.

The base bleed air intakes on the car's sides are divided by a central flap. The flow over the upper part of the flap, which is also used for the engine air intake,



is deflected and exits from the tail area to reduce the drag caused by the low-pressure wake directly behind the car. The effect is created by the airflow exiting under pressure at the rear which energises the wake that forms at the end of the car's tail, moving it further from the tail where it thus interferes less with the car's aerodynamics. The flow from the lower part of the flap goes to the intercoolers to cool the intake charge.



## Vehicle dynamics

### Extreme performance for a unique driving experience

To turn the 488 GTB's extreme power into unadulterated driving pleasure regardless of conditions, Ferrari drew on the vehicle dynamics experience it has built up in competition and through its laboratory cars on the various circuits worldwide.

Subsystem and electronic control development focused principally on maximum versatility, responsiveness to the accelerator and total control with response times (0.06 seconds) comparable to those of a track car.

The gearbox features specific ratios to make the most of the engine's incredible torque. Variable Torque Management delivers increasing amounts of torque up through the gearbox to optimise acceleration and give the driver a feeling of never-ending power. As a direct result of these solutions, the 488 delivers track-style gear-shifting: it takes just 6 seconds to go from standstill in first to the limiter in fourth gear.

The evolved version of Ferrari's Side Slip Control System, SSC2, is more precise yet less invasive, analysing various parameters to boost longitudinal acceleration out of corners by 12 per cent (in the Race and CT Off Manettino positions). Aside from just integrating with the car's F1-Trac and E-Diff, the SSC2 now also controls the active dampers, rendering the car's dynamic behaviour during complex manoeuvres even flatter and more stable.

The 488 GTB's excellent dynamics are due in part also to the SCM 3 magnetorheological damping system which has a faster ECU to modify the magnetic field in the dampers, as well as new Ferrari-patented software that



also avails of three new sensors on the car body. The dampers have new piston rods to reduce friction for more efficient control which translates into a feeling of greater body control with better bump absorption.

The latest evolution of the ESP guarantees even more efficient ABS intervention in low-grip situations. This was made possible by the faster calculation and response speeds (-8 per cent) delivered by new hardware and rewritten software.

Thanks to the new Brembo Extreme Design braking system, the 488 GTB's stopping distances are 9 per cent shorter than the previous model. Derived from the LaFerrari, the brakes also have new callipers that allow optimal cooling under extreme driving. They also feature new materials that ensure they reach optimal operating temperature faster and are more durable.

The 488 GTB is fitted with new specifically-developed Michelin tyres which deliver track-style grip without compromising on stability in any kind of situation. Its new sporty 20" wheels are lighter too. Forged 20" wheels are available to order and shave a further 8 kg off the car's weight.



## Style

### Exterior

The 488 GTB's exceptional sportiness and performance are underscored by particularly aggressive styling. The design is aerodynamically highly efficient yet retains the classically clean, pure lines typical of Ferrari's legendary styling.

Designed by the Ferrari Styling Centre, the 488 GTB features very sculptural flanks which are the key to its character. Its large signature air intake scallop is a nod to the original 308 GTB and is divided into two sections by a splitter.

The front is characterised by the dual grille opening which channels air into the two radiators. There is also a double front spoiler for aerodynamic reasons which, on close inspection, looks very like those of the F1 single-seaters. At the centre two pylons are combined with a deflector which channels air towards the flat underbody. The bonnet has pronounced, raised central section and two side channels. These channels have the dual function of making the car look more sporty and channelling the air from the two vents in the bumper which have been skilfully hidden from sight in the front view to keep the lines clean.

The tail is dominated by the blown spoiler and the large air vents which help improve the car's aerodynamics. The new exhaust tailpipes have been repositioned to accommodate the greater height required for the diffuser which has an aggressive ramp angle. The overall result exudes a sense of power and performance.

A new colour, Rosso Corsa Metallizzato, was developed to underscore this model's supremely sporty character as well as its unique elegance and exclusivity. Seen at close quarters, it has a surprising depth and glossiness



achieved by using a triple-layer formulation in which millions of micro-particles are suspended in the paint.

## Cabin

The 488 GTB's cabin was designed to exude extreme sportiness without sacrificing occupant comfort. This heightens the impression of a cockpit tailored around the driver's needs: the commands not clustered on the steering wheel are on the wraparound satellite pods which are angled directly towards the driver.

The new lighter, horizontally more compact dashboard features ultra-sporty air vents inspired by military jet air intakes.

The overall result is an effortless marriage of innovative volumes and compact, functional forms. The design references typical Ferrari traits, such as the clear separation between dashboard and tunnel, the multifunctional steering wheel, the control bridge on the tunnel. All beautifully handcrafted with materials and trim that are both elegant and sporty, with a strong emphasis on creating functional spaces.

The central tunnel is sleek, dynamic and functional at once. The characteristic longitudinal F1 bridge has become a Prancing Horse icon and, in practical terms, frees up plenty of storage space for small items while the main function buttons are now in a more ergonomic position. Meticulous attention was lavished on the various odds and ends compartments which provide generous storage space. The 488 GTB's new door panels are the fruit of meticulous work that centred around quality and attention to detail. They are now more



comfortable to the touch and the armrest is more ergonomic. The design is very clean and sporty while the buttons are very easy to reach.

Great thought also went into the new seats which have fixed headrests. They are even lighter and offer extremely high containment while being very comfortable, thanks to new profiles and padding designed for long journeys.

The 488 GTB also boasts a new Sport infotainment system with the display still part of the instrument cluster in the driver's line of sight, following the cockpit's philosophy of ergonomic and aesthetic integration with the various functionalities immediately to hand.

The 488 GTB's new key was inspired by the shape of the V8's intake plenums and features keyless start. The key incorporates a chip which communicates wirelessly with the car's ECU, allowing the car to be started or turned off simply by pressing the "Start/Stop Engine" button on the steering wheel with the key is still in the driver's pocket or in the special storage area on the tunnel.



## Optional extras

To ensure the 488 GTB is even more unique and suited to owners' individual requirements, Ferrari has created a vast Personalisation Programme with new options developed specifically for the model.

There is a particularly broad choice of carbon-fibre exterior and interior trim, including the front spoiler, rear extractor, sills, intercooler intake splitter, door panels and bridge.

Also available for the 488 GTB is the telemetry system, developed from that employed on the LaFerrari, and a high-end audio system with 12 speakers and a 1280 Watt amp with Quantum Logic technology for a pure, powerful sound.

## 7 Years Maintenance

Ferrari's unparalleled quality standards and increasing focus on client service underpin the extended seven-year maintenance programme offered with the 488 GTB. Available across the entire range, it covers all regular maintenance for the first seven years of the car's life.

This scheduled maintenance programme for Ferraris is an exclusive service that allows clients the certainty that their car is being kept at peak performance and safety over the years. This very special service is also available to owners of pre-owned Ferraris.

Regular maintenance (at intervals of either 20,000 km or once a year with no mileage restrictions), original spares and meticulous checks by staff trained directly at the Ferrari Training Centre in Maranello using the most modern diagnostic tools are just some of the advantages of the Genuine Maintenance



Programme. The service is available on all markets worldwide and from all Dealerships on the Official Dealership Network.

The Genuine Maintenance programme further extends the range of after-sales services offered by Ferrari to satisfy clients wishing to preserve the performance and excellence that are the signatures of all cars built in Maranello which itself has long been synonymous with leading-edge technology and sportiness.