



FERRARI 12CILINDRI: *FOR THE FEW*

- The Ferrari 12Cilindri, Maranello's new two-seater berlinetta powered by a mid-front-mounted, naturally-aspirated V12, was launched today
- The Ferrari 12Cilindri is the perfect embodiment of the Prancing Horse DNA, offering incomparable performance and handling with sophisticated, sculptural design
- Aimed at connoisseurs of the iconic V12 engine, the 830-cv Ferrari 12Cilindri is inspired by the Ferrari Gran Turismo cars of the 1950s and '60s: race-bred driving thrills combined with versatility
- The presentation took place during an exclusive event at Miami Beach (Florida, USA)

Miami Beach (USA), 03 May 2024 – There has been a single leitmotif that has been thrilling Prancing Horse enthusiasts since 1947: the naturally-aspirated, mid-front-mounted V12, the very first Ferrari engine to roar its way through the factory gates in Maranello. Unveiled today to public and media against the spectacular backdrop of Miami Beach in celebration of the 70th anniversary of Ferrari's arrival on the American market, the **Ferrari 12Cilindri** is the natural evolution of the company's uncompromising powertrain philosophy, which over the decades has continued to develop without ever straying from its original DNA and the marque's core values.

The Ferrari 12Cilindri is inspired by the legendary Grand Tourers of the 1950s and '60s, embodying the front-mounted Ferrari V12 two-seater mission with its effortless combination of elegance, versatility, and performance. The car represents the latest evolution in this bloodline and continues that unique legacy, elevating it towards new standards in performance, comfort, and design. Its silhouette exudes sportiness and class: simple yet harmonious lines feature an integrated active aerodynamic device to guarantee peerless performance, a front-hinged bonnet that exalts the view of the engine bay, and the two twin tailpipes that have become a signature of Ferrari's 12-cylinder cars.

The Ferrari 12Cilindri's engine is the latest development of the iconic V12 that laid the foundations for the Maranello legend, in this version unleashing 830 cv and with maximum revs rising to a heady 9500 rpm. The impressive power curve ensures 80% of total torque is already available at just 2500 rpm, resulting in instantaneous pick-up for maximum accelerator response and a feeling of never-ending power all the way to the red line.

The Ferrari 12Cilindri's cockpit guarantees superb comfort for both driver and passenger, even on long journeys: its feeling of airiness and space is heightened still further by a glass roof, prestigious materials and a central display in addition to one for the driver and a third ahead of the passenger.

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The Ferrari 12Cilindri is aimed at driving enthusiasts, but also at those who demand new standards of performance, comfort and design: long-standing Ferraristi, loyal to the unique emotions that only the Ferrari V12 can deliver, as well as new clients dreaming of combining comfort and Italian design with exhilarating driving pleasure. The **Ferrari 12Cilindri** is designed for connoisseurs with a very clear vision of what Ferrari's DNA has always been, truly making it a car for the few.

POWERTRAIN

The F140HD engine equipping the Ferrari 12Cilindri is the new version of the iconic naturally-aspirated Ferrari V12, the purest expression of Ferrari's soul: its peerless performance, powerful soundtrack and exclusivity make it the worthy heir to the legendary berlinetta sports cars that wrote some of the most glittering chapters in the marque's history. The engine can unleash up to 830 cv while its max revs have been increased to 9500 rpm by adopting challenging and innovative solutions.

The engine features modified components and software, some of which were already adopted on the special series 812 Competizione, ensuring it tops its category in terms of performance. To allow the V12 to rev so high, the engineers worked to reduce the weight and inertia of the engine's components, adopting titanium con rods, which guarantee a saving of 40% in rotating mass compared to steel with the same mechanical resistance. A different aluminium alloy was used for the pistons, making them lighter than on previous applications. Further weight reduction was gained by the adoption of a rebalanced crankshaft which is 3% lighter.

The valvetrain with sliding finger followers is derived from Ferrari's unparalleled experience in Formula 1 and was developed specifically for the V12 with the aim of reducing mass and availing of more high-performance valve profiles. The sliding finger follower, which is steel with a Diamond-Like-Carbon (DLC) coating, transmits the action of the cam to the valve using a hydraulic tappet as the pivot for its movement. The use of DLC reduces the coefficient of friction at critical points, significantly improving the mechanical efficiency of the engine.

Most of the modifications focused on optimising torque delivery in all operating conditions. The result is an engine with exhilaratingly smooth, seamless response, that delivers peak power at the red line.

The manifold and the plenum layout is now very compact: shortening the length of the tracts and optimising the cam profiles allows power to be unleashed at high revs, while the torque curve is optimised at all engine speeds by a system of variable geometry inlet tracts which enables the length of the intake tract to be continuously varied to maximise the dynamic charge in the cylinder.

For the very first time on a naturally-aspirated engine, an innovative software strategy was developed that can modify the maximum torque available as a function of the gear selected. This gives the driver the feeling of smooth, progressive pick-up as the transmission ratio increases, another vital factor in making the driving exhilaration delivered by the Ferrari 12Cilindri truly unique.



A crescendo of never-ending acceleration and power delivery has been a signature of all Ferrari V12s. Now innovative Aspirated Torque Shaping (ATS) has allowed the Maranello engineers to sculpt the torque curve in third and fourth gears using sophisticated electronic control that improves perception of the torque without impinging on acceleration, all to the benefit of driving pleasure. The introduction of new gear ratios furthermore keeps acceleration levels high and allowed the engineers to define a new torque curve shape for an aspirated engine.

Optimising the engine's mechanical efficiency and that of the lubrication circuit is critical to delivering blistering performance and low fuel consumption. The calibration of the variable displacement oil pump allows the oil to circulate throughout the entire engine and then be recovered along with the vapours from the sump. A solenoid valve, controlled by the engine ECU in a closed loop, is used to control the pump's displacement in terms of engine revs and pressure, delivering only the amount of oil required and thereby simultaneously saving a significant amount of energy. The new configuration of the oil tank and pump's hydraulic circuit reduces losses to a minimum and optimises functionality in all operating conditions.

The gasoline direct injection system (GDI at 350 bar) comprises two petrol pumps and four rails with pressure sensors that provide feedback to the pressure control system. The electronic injectors can also control up to three injections per engine cycle. The ignition system is constantly monitored by the engine control unit which has a single and a multi-spark function. The ECU also controls combustion in the chamber to ensure that the engine is always working in peak thermodynamic efficiency conditions, using a sophisticated strategy that recognises the octane rating of the fuel in the tank to avoid knocking.

The new exhaust system, developed to allow the car to comply with the latest emissions requirements (EU6E, China6B and BIN50), introduces a ceramic catalytic converter coupled with a particulate filter. This is the most advanced emissions-reduction technology available and involved lengthy calibration of the software strategies.

Sound is pivotal to marrying the comfort, luxury and exhilarating driving emotions typical of a Ferrari V12: to this end, every element of the intake and exhaust lines were optimised. Equal-length exhaust tracts, the 6-in-1 manifold for every cylinder bank and the innovative design of the central sections has resulted in Ferrari's typical V12 howl that comprises all of the noble combustion orders. The perfect integration and calibration of high and low frequencies coming from the intake and exhaust systems respectively also influence the engine's timbre. The shape of the ducts and the internal fluidynamics of the silencer baffles have been designed to reduce backpressure to a minimum thereby improving power delivery. The geometry of the forms and curves of the exhaust system was also perfected to guarantee the very purest notes of the signature Ferrari sound all the way to the limiter.

To guarantee that the soundtrack in the cabin is perfectly balanced, the intake tract was modified: modifying the position of the resonators also changed the pressure waves resulting in a richer range,



particularly in terms of the middle frequencies. The result is a cleaner, more full sound in the cabin in all driving conditions, but especially in sportier situations.

The Ferrari 12Cilindri sports the 8-speed DCT (Dual Clutch Transmission) that received such an unanimously rapturous welcome on other cars in the range, starting with the SF90 Stradale. Thanks in part to larger tyres on 21" rims, this solution delivers 5% shorter gear ratios in the lower gears and a 12% increase in torque at the wheels compared to previous V12 applications, all to the benefit of longitudinal performance under acceleration and gear shifting times (30% faster than the previous V12 berlinetta applications).

Performance under acceleration through the gears has been significantly improved and the introduction of the 8th gear improves range in motorway driving. The eight-speed DCT thus both improves efficiency and is more engaging in all gears.

DESIGN

EXTERIOR

With the Ferrari 12Cilindri, Flavio Manzoni and the Ferrari Styling Centre design team set out to radically transform the stylistic codes of Ferrari's previous mid-front-engined V12s. The car in fact marks a clear departure from the sculptural language that characterised the 812 Competizione, for example, instead favouring a more sophisticated language that still retains the necessary formal design rigour to achieve a sense of stylistic unity.

Clean lines dominate the car's geometry, underscoring the volumes that make up a seamlessly interconnected whole. The ultra-clean flanks sweep back along the entire car from a dihedral section. Although retaining a signature Ferrari sensuality, the wings have been sculpted with extreme geometric precision: all the lines are the result of intersections between the volumes and a more functional approach to form has been taken that echews nostalgia. The muscular rear wing is imposing, yet also perfectly controlled geometrically. On the front wing, that muscular tension extends slightly, coming to rest along the flank and further accentuating the car's monolithic aesthetic.

The sculpted bonnet is extremely sleek and incorporates the front wings. Removing the cut lines from the wings gives a smooth, uninterrupted surface to the muscularity of the design, lending the entire bonnet a sense of ultra-clean fluidity, interrupted only by two vents to cool the engine bay. One of the objectives of the Ferrari 12Cilindri was to explore design languages only tangentially related to the car world. The front has thus lost certain signature elements, such as the elongated form of the headlights and the traditional grille shape, in favour of geometries and intersections innate to the car's design. The headlights are integrated into a single wraparound band from which the DRLs emerge like blades.

A similar approach has been taken with the rear architecture: once again, rigour is the order of the day with the shape obtained by the subtraction of volume. Consistent with the front of the car the taillights are set into a blade that traverses the entire, concave rear section and also provides what is possibly



the Ferrari 12Cilindri's real signature theme, demonstrating once again how cleverly the Ferrari Styling Centre's designers are able to meld technical and functional demands with beauty.

Instead of adopting a rear spoiler, the designers have used two active flaps integrated with the rear screen, creating a signature delta theme. The overall perception is of a seamless whole, creating the idea of a very high-tech form. The development of this concept allowed the designers to treat the Ferrari 12Cilindri's cabin in a new way, tracing the frame of the surface in body colour to echo the rear screen theme and integrate organically with the rest of the cabin which itself is characterised by a black screen effect.

The tail section ends in a very clean, monolithic volume in body colour as well. The lower section – in black or carbon fibre – is characterised by the prominent diffuser keels over which the body almost seems to float. This area also includes the sensors and two twin tailpipes. The latter, comprising four elements altogether, also have a completely new shape, with a metal surround to reduce the perception of their size and create a more compact look.

COCKPIT

The design of the Ferrari 12Cilindri's interior sees it split into three different levels: the first, dominated by the upper part of the dash, continues around to blend into the door panel trim. Next is the central area while the third includes the footwells and seats. Each level is clearly defined, heightening the dual-cockpit effect through the colour and material combinations. These are used to create either an elegant or sporty look for the seats and other features. Ferrari's signature luxury and performance are flanked on the Ferrari 12Cilindri by a focus on environmental sustainability: extensive use has been made of sustainable materials such as Alcantara® containing 65% recycled polyester.

The interior style takes its inspiration from the Prancing Horse's dual-cockpit architecture. In recent years, that layout was used for the Ferrari Roma and Roma Spider as well as the Ferrari Purosangue. The Ferrari 12Cilindri's cabin has an almost-symmetrical structure comprising two modules for driver and passenger and offering an astonishing standard of comfort and involvement in the driving experience.

The dashboard extends horizontally, a fact underscored by a clear separation between the trimmed volumes in the upper section and the technical functions in the lower section. The upper section features two distinct binnacles dedicated to the driver and passenger instrumentation and to the climate control vents. A deftly elegant colour and material change draws the eye to the two volumes separated by the body of the dash, which seem almost to float, further enhancing the feeling of lightness in this area.

The panels of the central tunnel extend outward from the dashboard geometries as if they were almost an extension of the latter. The trimmed area features a large sculptural gash emphasised by contrasting materials. The armrest is in the trimmed area of the tunnel and extends into the medallion area, revealing contrasting metallic edging that creates an elegant intersection between the volumes.



The side section of the tunnel itself has been scooped out, again recreating that floating feeling. It is trimmed with luxury materials and also features a Y-shaped metal element into which the iconic gate shift has been set.

On the Ferrari 12Cilindri, the quality of life on board was one of the main drivers for the development of the bespoke interior's features. A new a new generously-sized tinted glass roof has been incorporated, which significantly improves the airiness of the cabin and thus the feeling of space on board, ensuring optimum thermal efficiency in both summer and winter. In terms of design, the darkened glass roof is perfectly integrated into the upper part of the cabin, giving it an elegant and refined appearance and creating continuity between the windscreen and the rear screen.

The Ferrari 12Cilindri introduces a new Human Machine Interface (HMI) comprising three displays that raise the Ferrari V12 berlietta onboard experience to new heights. All of the main functions can be controlled from the central 10.25" touchscreen capacitive display within reach of both driver and passenger. This is flanked by a 15.6" driver display showing all of the driving and vehicle dynamics information. Lastly the passenger is always completely involved in the driving experience thanks to an 8.8" display that ensures they feel like a genuine co-driver.

The car sports the capacitive steering wheel seen on all of the latest models in the range featuring the indented buttons for ease of use. This means that command activations are more precise, instant and intuitive even in sporty driving conditions. The Ferrari 12Cilindri comes with Apple CarPlay® and Android Auto®-based mobile connectivity systems as standard, both easily controlled from the new central display. A wireless charging mat on the central tunnel (as standard) makes phone charging simple too.

Available as an optional on the Ferrari 12Cilindri is the high-end audio system developed in collaboration with Burmester®, comprising 15 loudspeakers and unleashing a massive 1600 W for a genuinely unprecedented in-car experience at any volume and any speed. The high frequencies are crystal clear and sparkling, thanks to Ring Tweeter technology which minimises distortion. The powerful dual coil subwoofer guarantees a wonderfully full, rich sound which, thanks to Ultraflat Headliners, is all part of a 360-degree listening experience.

AERODYNAMICS

The main objective of the Ferrari 12Cilindri's aerodynamics was to produce a sober, elegant car without compromising on performance. The 25 nm nolder on the boot lid and the active aero are the two signature elements of the tail section. The former guarantees the recompression required to maintain the car's aero efficiency when drag is minimal while the flaps permit two different configurations, *Low Drag* (LD) and *High Downforce* (HD) respectively.

In the low drag position, the flaps are flush with the bodywork so that the air runs over it uninterrupted, making them invisible to the flow. This configuration is retained until a speed of 60 km when downforce



is not very relevant to the performance of the car, something that is also the case over 300 km/h. In between these two speeds, however, downforce plays a central role and the spoilers' movement depends on the car's longitudinal and lateral acceleration. In high downforce configuration, the Ferrari 12Cilindri generates maximum downforce and guarantees that the car is aerodynamically balanced.

The underbody is designed to maximise efficient vertical load generation, also by managing the airflow out of the central radiators. The plan form and profile of the louvres in the central opening of the underbody minimise the impact of the hot air which is not highly energised. Two louvres have been created in the low-pressure area behind the front wheels which, by reducing overpressure inside the engine compartment, increase the efficiency of the radiating masses, lowering drag and increasing downforce generation.

As was the case with the 812 Competizione, downforce on the front underbody is generated by three pairs of vortex generators optimised in the wind tunnel. The front underbody also contributes to brake cooling by delivering a flow of lower-temperature air from the front splitter.

The central underbody was designed to correctly channel air flows to retain the available energy all the way to the rear diffuser. To that end, the transmission tunnel opening was reduced to balance the amount of air that would flow inside it. A raised section ahead of the rear wheel shields the tyres and deflects the flow towards the rear.

The rear underbody sports a pair of vortex generators which are used to produce efficient downforce and channel the flows towards the extractor. In line with Ferrari's philosophy of transferring innovations from the racing world to the road-going sports cars, the engineers designed an air inlet near the outer edge of the rear fence to provide ventilation for the silencer's electronics.

COOLING LAYOUT

The heat dissipation requirements of the engine and ancillaries demanded a redesign of the car's entire cooling system which resulted in front underbody evacuation being optimised, with no fewer than seven openings in the front bumper. In particular, the space between the longitudinal elements of the chassis houses the engine coolant radiator and air-con circuit condenser, which are fed by the central opening, while the oil radiator has been split into two separate elements, lying ahead of the front wheels. The two side air intakes are divided in two: the outer part is designed to cool the engine oil radiator while the inner one cools the brakes.

A generous brake cooling duct is fed by two openings, one between the radiator intakes and the other on the lower part of the front splitter. The entire system is integral to the oil radiator intake to optimise the routing of the front brake intakes. The side intakes are framed by an L-shaped element designed to maximise the amount of air entering the opening whilst simultaneously correctly channelling the flow along the car's flanks.



The air in the engine bay exits through two vents on the bonnet which reduce overpressure, improving cooling efficiency. Thanks to the latter, there are fewer openings on the underbody, thereby maximising efficient downforce generation. On the wing behind the front wheels there is also a vent for the air from the wheelarch which minimises overpressure on the underbody caused by the cooling duct for the brakes and front diffusers.

VEHICLE DYNAMICS AND CHASSIS

The Ferrari 12Cilindri boasts the very state of the art in front-engined berlinetta dynamic controls. The introduction of brake-by-wire allowed the latest innovations from the range to be adopted, including ABS Evo that debuted on the 296 GTB and the 6D sensor that guarantees optimal precision to the Virtual Short Wheelbase (PCV) 3.0 and Side Slip Control (SSC) 8.0 systems, together with reduced braking distances and a more accurate repeatability of braking. The Aspirated Torque Shaping, an entirely new control logic, also emphasises even further the smoothly linear power delivery from the legendary naturally-aspirated engine, thanks to electronic control.

The SSC 8.0, a new evolution of the famous Ferrari control unit, allows the systems to talk to each other using a shared language that calculates the optimal operating mode for each one in order to maximise the car's overall performance. The SSC 8.0 integrates the Ferrari 12Cilindri's controllers and creates natural synergy with the new ABS Evo.

The SSC 8.0 is Ferrari's proprietary system and has been optimised to further improve estimation accuracy and learning speed (+10% compared to previous applications), as well as control on very low grip surfaces. Grip estimation is flanked by the contribution of the grip recognition logic: by using the information from the EPS CPU and the side-slip angle estimated by the SSC 8.0, the Ferrari 12Cilindri can estimate the tyre-road grip level even when steering. Thanks to this approach, the grip can also be estimated in normal use conditions and not just on the limit, making it faster for the system to learn real grip levels.

The Ferrari 12Cilindri features the four-wheel independent steering (4WS) that debuted on the special series 812 Competizione, which manages the movement of every wheel independently to improve yaw management in cornering and responsiveness during rapid direction changes. The rear-wheel steering has innovative mechanical characteristics that significantly improve precision of control of the position of each single actuator, giving faster axle response time and consequently improved responsiveness through corners. Optimum handling is also ensured thanks to a near-ideal weight distribution - 48.4% front and 51.6% rear and the car's responsiveness also benefits from the 20-mm reduction in the wheelbase compared to the 812 Superfast.

TYRES

The Ferrari 12Cilindri can be fitted with Michelin Pilot Sport S5 or Goodyear Eagle F1 Supersport tyres, both of which were developed in a new size for the Maranello company: 275/35ZR21 at the front and 315/35ZR21 at the rear. Development benefited from physical and virtual sessions, the latter carried



out through simulator testing to reduce the number of physical prototypes and, consequently, development times and cycles.

Performance has been optimised thanks to the adoption of the latest technologies in terms of compounds, tread design concepts and casing characteristics. Extensive testing has led to improved performance, dry grip levels and balance, stability on the limit and stability in the wet, as well as improved comfort and noise characteristics both internally and externally, including a 10% reduction in rolling resistance compared to the previous Ferrari front-engined V12 berlinetta applications.

CHASSIS

The Ferrari 12Cilindri's all-aluminium chassis, featuring a 20-mm reduction in wheelbase compared to the 812 Superfast's, is completely new: specific attention was focused on the geometry of cast components such as the shock towers and A and C pillars, to improve torsional rigidity whilst simultaneously reducing weight

The greenhouse topping the new chassis guarantees superb NVH and safety performance in addition to clean load lines which allowed stiffness to be improved without increasing weight compared to previous Ferrari 12-cylinder applications. The result was an increase of 15% in torsional rigidity compared to the 812 Superfast which ensures more predictable dynamic behaviour, with consequent benefits for suspension precision. Lastly, thanks to more extensive use of castings, the number of extruded components requiring assembly has been significantly reduced, making the assembly process more efficient.

For the first time on a Ferrari production car, a secondary alloy with 100% recycled material has been used to make the shock towers of the gearbox subframe: its introduction allows a reduction in carbon dioxide emissions of 146 kg of CO₂ for every car produced. Thanks to an extensive development phase, it was possible to guarantee that the mechanical characteristics are the same as non-recycled alloy, exploiting the slight differences in chemical composition. For the validation of this new alloy, extensive testing was undertaken to assess the static and dynamic behaviour of the components and ensure excellent results in fatigue and crash tests.

7-YEAR MAINTENANCE

Ferrari's unparalleled quality standards and increasing focus on client service underpin the extended seven-year maintenance programme offered with Ferrari 12Cilindri. Available across the entire Ferrari range, the programme covers all regular maintenance for the first seven years of the car's life. This scheduled maintenance 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 buying 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 in the Official Dealership network.

Further images and information about the car can be downloaded from ferrari.com/media-centre

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FERRARI 12CILINDRI – TECHNICAL SPECIFICATIONS

POWERTRAIN

Type	V12 – 65° – Dry sump
Overall displacement	6496 cm ³
Bore and stroke	94 mm x 78 mm
Max. power output*	830 cv @ 9250 rpm
Max. torque	678 Nm @ 7250 rpm
Max. revs	9500 rpm
Compression ratio	13.5:1
Specific power output	128 cv/l

WEIGHTS AND DIMENSIONS

Length	4733 mm
Width	2176 mm
Height	1292 mm
Wheelbase	2700 mm
Front track	1686 mm
Rear track	1645 mm
Dry weight**	1560 kg
Dry weight-power ratio	1.88 kg/cv
Weight distribution	48.4% front / 51.6% rear
Fuel tank capacity	92 litres
Boot size	270 litres

TYRES AND WHEELS

Front	275/35 R21 J10.0
Rear	315/35 R21 J11.5

BRAKES

Front	398 x 223 x 38 mm
Rear	360 x 233 x 32 mm

TRANSMISSION AND GEARBOX

8-speed DCT

ELECTRONIC CONTROLS

SSC 8.0: TC, eDiff, SCM, PCV 3.0, FDE 2.0, EPS, ABS-Evo in all Manettino positions, 6D sensor, performance ABS/ABD

PERFORMANCE

Max. speed	> 340 km/h
0-100 km/h	2.9 s
0-200 km/h	<7.9 s
100-0 km/h	31.4 m
200-0 km/h	122.0 m

FUEL CONSUMPTION***

Under homologation

CO₂ EMISSIONS***

Under homologation

* With 98 RON petrol, including 5 cv dynamic ram effect

** With optional lightweight content

*** WLTC – Combined Cycle



FERRARI 12CILINDRI SPIDER: *FOR THE FEW*

- The Ferrari 12Cilindri Spider presented today is the marque's new two-seater spider with a mid-front-mounted-naturally-aspirated V12 engine
- The Ferrari 12Cilindri Spider combines an unparalleled, thrilling driving experience with sophisticated, modern design, and has been conceived for aficionados of this very special engine configuration who also enjoy the appeal of open-air motoring
- The concept behind the car draws inspiration from open-topped Ferrari Gran Turismo models of the 1950s and '60s
- Delivering 830 cv, the twelve cylinder naturally-aspirated engine offers a unique and sensational driving experience
- The car was presented at an exclusive event in Miami Beach (Florida, USA)

Miami Beach (USA), 03 May 2024 – Very few associations can exhilarate and delight like the union between a naturally-aspirated V12 Ferrari engine and open-top motoring: the Ferrari 12Cilindri Spider, unveiled today at an exclusive event hosted at Miami Beach, fuses these two very special sensations in a two-seater berlinetta spider powered by Ferrari's iconic twelve-cylinder engine. This iteration of the V12 delivers 830 cv and keeps revving right up to 9500 rpm, offering the driver and passenger an even more exclusive open-air driving experience.

The concept giving shape to the Ferrari 12Cilindri Spider draws inspiration from open-topped Ferrari Gran Turismo models of the 1950s and '60s, which combined the unmatched performance of a road-going racing car with the unique opportunity to revel in the sound of the 12-cylinder engine with the roof down, and extraordinary long-distance driving comfort. The design of the car makes a break from the recent canons of the Ferrari two-seater berlinetta spider genre, eschewing muscularity and sensuality in favour of a more futuristic language founded on formal purity with only the barest hint of a typically automotive visual lexicon.

The Ferrari 12Cilindri Spider is intended for both connoisseurs of the marque with a clear vision of what Ferrari has stood for in the motoring world since 1947, and newer Ferraristi who dream of a car that lets them combine unmatched driving thrills with comfort and Italian design – and the possibility of enjoying the wind in their hair. This truly is a car *for the few*.

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The engine features modified components and software, some of which were already adopted on the open-top special series 812 Competizione A, ensuring it tops its category in terms of performance. To allow the V12 to rev so high, the engineers worked to reduce the weight and inertia of the engine's components, adopting titanium con rods, which guarantee a saving of 40% in rotating mass compared to steel with the same mechanical resistance. A different aluminium alloy was used for the pistons, making them lighter than on previous applications. Further weight reduction was gained by the adoption of a rebalanced crankshaft which is 3% lighter.

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For the very first time on a naturally-aspirated engine, an innovative software strategy was developed that can modify the maximum torque available as a function of the gear selected. This gives the driver the feeling of smooth, progressive pick-up as the transmission ratio increases, another vital factor in making the driving exhilaration delivered by the Ferrari 12Cilindri Spider truly unique.

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gear ratios furthermore keeps acceleration levels high and allowed the engineers to define a new torque curve shape for an aspirated engine.

Optimising the engine's mechanical efficiency and that of the lubrication circuit is critical to reducing emissions and consumption. The calibration of the variable displacement oil pump allows the oil to circulate throughout the entire engine and then be recovered along with the vapours from the sump. A solenoid valve, controlled by the engine ECU, is used to control the pump's displacement in terms of engine revs and pressure, delivering only the amount of oil required and thereby simultaneously saving a significant amount of energy. The new configuration of the oil tank and pump's hydraulic circuit reduces losses to a minimum and optimises functionality in all operating conditions.

The gasoline direct injection system (GDI at 350 bar) comprises two petrol pumps and four rails with pressure sensors that provide feedback to the pressure control system. The electronic injectors can also control up to three injections per engine cycle. The ignition system is managed by an ION control unit which has a single and a multi-spark function. This unit also serves a knock monitoring and control function, using a sophisticated strategy for recognising the quality (octane rating) of the fuel in the tank to maximise the thermodynamic efficiency of the engine.

The new exhaust system, developed to allow the car to comply with the latest emissions requirements (EU6E, China 6b and Bin 50), introduces a ceramic catalytic converter coupled with a particulate filter. This is the most advanced emissions-reduction technology available and involved lengthy calibration of the software strategies.

Sound is pivotal to marrying the comfort, luxury and exhilarating driving emotions typical of a Ferrari V12: to this end, every element of the intake and exhaust lines were optimised. Equal-length exhaust tracts, the 6-in-1 manifold for every cylinder bank and the innovative design of the central sections has resulted in Ferrari's typical V12 howl that comprises all of the noble combustion orders. The perfect integration and calibration of high and low frequencies coming from the intake and exhaust systems respectively also influence the engine's timbre. The shape of the ducts and the internal fluid dynamics of the silencer baffles have been designed to reduce backpressure to a minimum thereby improving power delivery. The geometry of the forms and curves of the exhaust system was also perfected to guarantee the very purest notes of the signature Ferrari sound all the way to the limiter.

To guarantee that the soundtrack in the cabin is also perfectly balanced, the intake tract was modified. Altering the position of the resonators also changed the pressure waves resulting in a richer range, particularly in terms of the middle frequencies. The result is a cleaner, fuller sound in all driving conditions, and especially in sportier situations.

The Ferrari 12Cilindri Spider sports the 8-speed DCT (Dual Clutch Transmission) that received such a unanimously rapturous welcome on other cars in the range, starting with the SF90 Stradale. Thanks in part to larger tyres on 21" rims, this solution delivers 5% shorter gear ratios in the lower gears and a 12% increase in torque at the wheels compared to previous V12 applications, all to the benefit of



longitudinal performance under acceleration and gear shifting times (30% faster than the previous two-seat V12 applications).

Performance under acceleration through the gears has been significantly improved and the introduction of the 8th gear improves range in motorway driving. The eight-speed DCT thus both improves efficiency and is more engaging in all gears.

DESIGN

EXTERIOR

With the Ferrari 12Cilindri Spider, Flavio Manzoni and the Ferrari Styling Centre design team set out to radically transform the stylistic codes of Ferrari's previous mid-front-engined V12s. The car in fact marks a clear departure from the sculptural language that characterised the 812 Competizione A, for example, instead favouring a more sophisticated language that still retains the necessary formal design rigour to achieve a sense of stylistic unity.

Clean lines dominate the car's geometry, underscoring the volumes that make up a seamlessly interconnected whole. The ultra-clean flanks sweep back along the entire car from a dihedral section. Although retaining a signature Ferrari sensuality, the wings have been sculpted with extreme geometric precision: all the lines are the result of intersections between the volumes and a more functional approach to form has been taken that eschews nostalgia. The muscular rear wing is imposing, yet also perfectly controlled geometrically. On the front wing, that muscular tension extends slightly, coming to rest along the flank and further accentuating the car's monolithic aesthetic.

The sculpted bonnet is extremely sleek and incorporates the front wings. Removing the cut lines from the wings gives a smooth, uninterrupted surface to the muscularity of the design, lending the entire bonnet a sense of ultra-clean fluidity, interrupted only by two vents to cool the engine bay. One of the objectives of the Ferrari 12Cilindri Spider was to explore design languages only tangentially related to the car world. The front has lost certain signature elements, such as the elongated form of the headlights and the traditional grille shape, in favour of geometries and intersections innate to the car's design. The headlights are integrated into a single wraparound band from which the DRLs emerge like blades.

This car differs from the Ferrari 12Cilindri in the boldly expressive character created by the two buttresses at the rear, behind which an element with a black-screen effect is set. The crease lines evident on the buttresses clearly echo the motif of the flank, accentuating the expressiveness of the design of these elements. Set into the flank is a 'quarterlight' in back-painted polycarbonate.

A similar approach has been taken with the rear architecture: once again, rigour is the order of the day with the shape obtained by the subtraction of volume. Consistent with the front of the car the taillights are set into a blade that traverses the entire, concave rear section and also provides what is possibly



the Ferrari 12Cilindri Spider's real signature theme, demonstrating once again how cleverly the Ferrari Styling Centre's designers are able to meld technical and functional demands with beauty.

Instead of adopting a rear spoiler, the designers have used two active flaps integrated with the rear screen, creating a signature delta theme. The overall perception is of a seamless whole, creating the idea of a very high-tech form. The development of this concept allowed the designers to treat the Ferrari 12Cilindri Spider's cabin in a new way, tracing the frame of the surface in body colour to echo the rear screen theme and integrate organically with the rest of the cabin which itself is characterised by a black screen effect.

The tail section ends in a very clean, monolithic volume in body colour as well. The lower section of the tail - in black or in carbon fibre - features the prominent diffuser keels. The body of the car appears to be suspended over this element, creating a floating effect. This zone also hosts the sensors and two twin tailpipes. The four tailpipes themselves also feature an all-new shape, with a metal surround to reduce the perception of their size and create a more compact look.

INTERIOR

The design of the Ferrari 12Cilindri Spider's interior sees it split into three different levels: the first, dominated by the upper part of the dash, continues around to blend into the door panel trim. Next is the central area while the third includes the footwells and seats. Each level is clearly defined, heightening the dual-cockpit effect through the colour and material combinations. These are used to create either an elegant or sporty look for the seats and other features. Ferrari's signature luxury and performance are flanked on the Ferrari 12Cilindri Spider by a focus on environmental sustainability: extensive use has been made of sustainable materials such as Alcantara® containing 65% recycled polyester.

The interior style takes its inspiration from the Prancing Horse's dual-cockpit architecture. In recent years, that layout was used for the Ferrari Roma and Roma Spider as well as the Ferrari Purosangue. The Ferrari 12Cilindri Spider's cabin has an almost symmetrical structure comprising two modules for driver and passenger and offering an astonishing standard of comfort and involvement in the driving experience.

The dashboard extends horizontally, a fact underscored by a clear separation between the trimmed volumes in the upper section and the technical functions in the lower section. The upper section features two distinct binnacles dedicated to the driver and passenger instrumentation and to the climate control vents. A deftly elegant colour and material change draws the eye to the two volumes separated by the body of the dash, which seem almost to float, further enhancing the feeling of lightness in this area.

The panels of the central tunnel extend outward from the dashboard geometries as if they were almost an extension of the latter. The trimmed area features a large sculptural gash emphasised by contrasting materials. The armrest is in the trimmed area of the tunnel and extends into the medallion



area, revealing contrasting metallic edging that creates an elegant intersection between the volumes. The side section of the tunnel itself has been scooped out, again recreating that floating feeling. The structure of the tunnel is trimmed with exclusive upholstery, and features a Y-shaped metal element into which the iconic shift gate is set.

Unlike the Ferrari 12Cilindri, there is no rear bench as the rear zone of the cabin of the Ferrari 12Cilindri Spider is used to stow the retractable hard top. However, the solution chosen for the roof system still leaves plenty of space in the cabin, and the Ferrari 12Cilindri Spider is a versatile car suitable even for long journeys.

The Ferrari 12Cilindri Spider introduces a new Human Machine Interface (HMI) comprising three displays that raise the Ferrari V12 berlinetta onboard experience to new heights. All of the main functions can be controlled from the central 10.25" touchscreen capacitive display within reach of both driver and passenger. This is flanked by a 15.6" driver display showing all of the driving and vehicle dynamics information. Lastly, the passenger is always completely involved in the driving experience thanks to an 8.8" display that ensures they feel like a genuine co-driver.

The car sports the capacitive steering wheel seen on all of the latest models in the range featuring the indented buttons for ease of use. This means that command activations are more precise, instant and intuitive even in sporty driving conditions. The Ferrari 12Cilindri Spider comes with Apple CarPlay® and Android Auto®-based mobile connectivity systems as standard, both easily controlled from the new central display. A wireless charging mat on the central tunnel (as standard) makes phone charging simple too.

Available as an optional on the Ferrari 12Cilindri Spider is the high-end audio system developed in collaboration with Burmester®, comprising 15 loudspeakers and unleashing a massive 1600 W for a genuinely unprecedented in-car experience at any volume and any speed. The high frequencies are crystal clear and sparkling, thanks to Ring Tweeter technology which minimises distortion. The powerful dual coil subwoofer guarantees a wonderfully full, rich sound which, thanks to Ultraflat Headliners, is all part of a 360-degree listening experience.

AERODYNAMICS

The main objective of the Ferrari 12Cilindri Spider's aerodynamics was to produce a sober, elegant car without compromising on performance. The 25-mm nolder on the boot lid and the active aero are the two signature elements of the tail section. The former guarantees the recompression required to maintain the car's aero efficiency when drag is minimal while the flaps permit two different configurations, *Low Drag* (LD) and *High Downforce* (HD) respectively.

In the LD position, the flaps are flush with the bodywork so that the air runs over it uninterrupted, making them invisible to the flow. This configuration is retained until a speed of 60 km when downforce is not very relevant to the performance of the car, something that is also the case over 300 km/h. In



between these two speeds, however, downforce plays a central role and the spoilers' movement depends on the car's longitudinal and lateral acceleration. In high downforce configuration, the Ferrari 12Cilindri Spider generates maximum downforce and guarantees that the car is aerodynamically balanced.

An internal aerodynamic passage has been created in the trim ahead of the buttresses. Its purpose is to enable the flow of air towards the rear of the car, facilitating recompression behind the adjustable rear screen and reducing the amount of air recirculating in the cockpit. The vertical profile on the outside of the aerodynamic passage has the task of correctly directing the air towards the rear, to the benefit of efficiency and flow stabilisation.

The underbody is designed to maximise efficient vertical load generation, also by managing the airflow out of the central radiators. The planform and profile of the louvres in the central opening of the underbody minimise the impact of the hot air which is not highly energised. Two louvres have been created in the low-pressure area behind the front wheels which, by reducing overpressure inside the engine compartment, increase the efficiency of the radiating masses, lowering drag and increasing downforce generation.

As was the case with the 812 Competizione A, downforce on the front underbody is generated by three pairs of vortex generators optimised in the wind tunnel. The front underbody also contributes to brake cooling by delivering a flow of lower-temperature air from the front splitter.

The central underbody has been designed to correctly channel the air flows, retaining the available energy all the way to the rear diffuser. To that end, the transmission tunnel opening was reduced to balance the amount of air that would flow inside it. A raised section ahead of the rear wheel shields the tyres and deflects the flow towards the rear.

The rear underbody sports a pair of vortex generators which are used to produce efficient downforce and channel the flows towards the extractor. In line with Ferrari's philosophy of transferring innovations from the racing world to the road-going sports cars, the engineers designed an air inlet near the outer edge of the rear fence to provide ventilation for the silencer's electronics.

COOLING LAYOUT

The heat dissipation requirements of the engine and ancillaries demanded a redesign of the car's entire cooling system which resulted in front underbody evacuation being optimised, with no fewer than seven openings in the front bumper. In particular, the space between the longitudinal elements of the chassis houses the engine coolant radiator and air-con circuit condenser, which are fed by the central opening, while the oil radiator has been split into two separate elements, lying ahead of the front wheels. The side air intakes are divided in two: the outer part is designed to cool the engine oil radiator while the inner one cools the brakes.



A generous brake cooling duct is fed by two openings, one between the radiator intakes and the other on the lower part of the front splitter. The entire system is integral to the oil radiator intake to optimise the routing of the front brake intakes. The side intakes are framed by an L-shaped element designed to maximise the amount of air entering the opening whilst simultaneously correctly channelling the flow along the car's flanks.

The air in the engine bay exits through two vents on the bonnet which reduce overpressure, improving cooling efficiency. Thanks to the latter, there are fewer openings on the underbody, thereby maximising efficient downforce generation. On the wing behind the front wheels there is also a vent for the air from the wheelarch which minimises overpressure on the underbody caused by the cooling duct for the brakes and front diffusers.

VEHICLE DYNAMICS

The Ferrari 12Cilindri Spider boasts the very state of the art in front-engined berlinetta dynamic controls. The introduction of brake-by-wire allowed the latest innovations from the range to be adopted, including ABS Evo that debuted on the 296 GTB and the 6D sensor that guarantees optimal precision to the Virtual Short Wheelbase (PCV) 3.0 and Side Slip Control (SSC) 8.0 systems, together with reduced braking distances and a more accurate repeatability of braking. The Aspirated Torque Shaping, an entirely new control logic, also emphasises even further the smoothly linear power delivery from the legendary naturally-aspirated engine, thanks to electronic control.

The SSC 8.0, a new evolution of the famous Ferrari control unit, allows the systems to talk to each other using a shared language that calculates the optimal operating mode for each one in order to maximise the car's overall performance. The SSC 8.0 integrates the Ferrari 12Cilindri Spider's controllers and creates natural synergy with the new ABS Evo.

The SSC 8.0 is Ferrari's proprietary system and has been optimised to further improve estimation accuracy and learning speed (+10% compared to previous applications), as well as control on very low grip surfaces. Grip estimation is flanked by the contribution of the grip recognition logic: by using the information from the EPS CPU and the side-slip angle estimated by the SSC 8.0, the Ferrari 12Cilindri Spider can estimate the tyre-road grip level even when steering. Thanks to this approach, the grip can also be estimated in normal use conditions and not just on the limit, making it faster for the system to learn real grip levels.

The Ferrari 12Cilindri Spider features the four-wheel independent steering (4WS) that debuted on the special series 812 Competizione, which manages the movement of every wheel independently to improve yaw management in cornering and responsiveness during rapid direction changes. The rear-wheel steering has innovative mechanical characteristics that significantly improve precision of control of the position of each single actuator, giving faster axle response time and consequently improved responsiveness through corners. Optimum handling is also ensured thanks to a near-ideal



weight distribution – 47.8% front and 52.2% rear – and the car’s responsiveness also benefits from the 20-mm reduction in the wheelbase compared to the 812 GTS.

TYRES

The Ferrari 12Cilindri Spider can be fitted with Michelin Pilot Sport S5 or Goodyear Eagle F1 Supersport tyres, both of which were developed in a new size for the Maranello company: 275/35ZR21 at the front and 315/35ZR21 at the rear. Development benefited from physical and virtual sessions, the latter carried out through simulator testing to reduce the number of physical prototypes and, consequently, development times and cycles.

Performance has been optimised thanks to the adoption of the latest technologies in terms of compounds, tread design concepts and casing characteristics. Extensive testing has led to improved performance, dry grip levels and balance, stability on the limit and in the wet, as well as improved comfort and noise characteristics both internally and externally, including a 10% reduction in rolling resistance compared to the previous Ferrari front-engined V12 berlinetta applications.

CHASSIS

The Ferrari 12Cilindri Spider’s all-aluminium chassis, featuring a 20-mm reduction in wheelbase compared to the 812 GTS, is completely new: specific attention was focused on the geometry of cast components such as the shock towers and A and C pillars, to improve torsional rigidity whilst simultaneously reducing weight.

The result was an increase of 15% in torsional rigidity compared to the past, which ensures more predictable dynamic behaviour, with consequent benefits for suspension precision. Thanks to more extensive use of castings, the number of extruded components requiring assembly has been significantly reduced, making the assembly process more efficient. Lightness was a key requisite throughout the entire development of the chassis and body-in-white of the Ferrari 12Cilindri Spider, which weighs just 60 kg more than the Ferrari 12Cilindri – a remarkably small weight increase made possible by the innovative solutions developed specifically for this car.

The body includes aluminium reinforcement connections between the roll bar behind the occupants and the B-pillar. This solution offered a significant saving in weight which, in turn, allowed for a lower centre of gravity. Featuring a dual curvature above the heads of the driver and passenger for greater headroom, improving both comfort and versatility, the retractable hard top (RHT) takes just 14 seconds to open or close, and can be operated at speeds up to 45 km/h. The kinematic system moves with elegant harmony, while its simplicity, combined with the use of aluminium, makes this a much lighter option than other solutions. Completing the roof zone is a rear screen which can be electrically height-adjusted. This feature offers occupants extraordinary levels of comfort in the cabin when driving with the roof down, and even allows a normal conversation to be held at speeds up to and beyond 200 km/h.

For the first time on a Ferrari production car, a secondary alloy with 100% recycled material has been used to make the shock towers of the gearbox subframe: its introduction allows a reduction in carbon



dioxide emissions of 146 kg of CO₂ for every car produced. Thanks to an extensive development phase, it was possible to guarantee that the mechanical characteristics are the same as non-recycled alloy, exploiting the slight differences in chemical composition. For the validation of this new alloy, extensive testing was undertaken to assess the static and dynamic behaviour of the components and ensure excellent results in fatigue and crash tests.

7 YEAR MAINTENANCE

Ferrari's unparalleled quality standards and increasing focus on client service underpin the extended seven-year maintenance programme offered with the Ferrari 12Cilindri Spider. Available across the entire Ferrari range, the programme 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 wide range of after-sales services offered by Ferrari to meet the needs of clients wishing to preserve the performance and excellence that are the signatures of all cars built in Maranello.

Further images and information about the car can be downloaded from ferrari.com/media-centre

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FERRARI 12CILINDRI SPIDER – TECHNICAL SPECIFICATIONS

POWERTRAIN

Type	V12 – 65° – Dry sump
Overall displacement	6496 cm ³
Bore and stroke	94 mm x 78 mm
Max. power*	830 cv at 9250 rpm
Max. torque	678 Nm @ 7250 rpm
Max. revs	9500 rpm
Compression ratio	13.5:1
Specific power output	128 cv/l

WEIGHTS AND DIMENSIONS

Length	4733 mm
Width	2176 mm
Height	1292 mm
Wheelbase	2700 mm
Front track	1686 mm
Rear track	1645 mm
Dry weight**	1620 kg
Dry weight-power ratio	1.95 kg/cv
Weight distribution	47.8% front / 52.2% rear
Fuel tank capacity	92 litres
Boot size	200 litres

TYRES AND WHEELS

Front	275/35 R21 J10.0
Rear	315/35 R21 J11.5

BRAKES

Front	398 x 223 x 38 mm
Rear	360 x 233 x 32 mm

TRANSMISSION AND GEARBOX

8-speed dual clutch F1 DCT

ELECTRONIC CONTROLS

SSC 8.0: TC, eDiff, SCM, PCV 3.0, FDE2.0, EPS, ABS Evo in all Manettino positions, 6D sensor, performance ABS/ABD

PERFORMANCE

Max. speed	> 340 km/h
0–100 km/h	2.95 s
0–200 km/h	8.2 s
100–0 km/h	31.4 m
200–0 km/h	122.0 m

FUEL CONSUMPTION***

Under homologation

CO₂ EMISSIONS***

Under homologation

* with 98 RON petrol, including 5 cv dynamic ram effect

** With optional lightweight content

*** WLTC – Combined Cycle