

Ferrari

Media

Ferrari Portofino: the Italian Grand Tourer par excellence



Frankfurt, 12 September 2017 – The Ferrari Portofino is the new V8 GT set to dominate its segment thanks to a perfect combination of outright performance and versatility in addition to a level of driving pleasure and on-board comfort unparalleled on the market. Capable of unleashing a massive 600 cv and sprinting from 0 to 200 km/h in just 10.8 seconds, the Ferrari Portofino is the most powerful convertible to combine the advantages of a retractable hard top, a roomy boot and generous cockpit space complete with two rear seats suitable for short trips.

The new car, which takes its name, Portofino, from one of the most charming villages on the Italian Riviera, an eponym for stylish elegance, is the most versatile model in the range. A Ferrari designed to be driven every day that also effortlessly converts from an authentic 'berlinetta' coupé to a drop-top capable of delivering a unique Ferrari soundtrack and superb driving pleasure even in day-to-day situations.

The retractable hard top (RHT) has been completely redesigned and can now be opened or closed in just 14 seconds on the move at lower speeds, making the car even more practical. Careful modelling of the RHT housing now allows the luggage compartment to hold two cabin trolleys with the roof down and three with the roof up. Ideal for any occasion, the Ferrari Portofino represents the perfect combination of design, performance and technology.

The Ferrari Portofino is significantly lighter with the adoption of new components featuring innovative designs made possible by the use of cutting-edge production techniques. This, combined with a 40 cv higher power output than the California T, has resulted in a significant hike in performance and a corresponding drop in emissions. Vehicle dynamics benefit from the introduction, for the first time on this model, of electric power steering, the 3rd generation electronic differential (E-Diff3) and the latest evolution of the electronic suspension control system (SCM-E) integrated with Premium 9.1 ESP.

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ENGINE

Starting with the V8 power unit, which has won the outright International Engine of the Year award for two consecutive years in 2016 and 2017, Ferrari's engineers worked on several different fronts to deliver a power output of 600 cv at 7500 rpm, the equivalent of 156 cv/l, introducing new mechanical components as well as specific engine management software.

Maximum mechanical efficiency is guaranteed by the use of high-resistance aluminium alloy pistons and con rods with innovative geometries and specially-shaped high-tumble intake manifolds. Combustion is optimised across the engine's rev range by an ion-sensing system with adaptive ignition and multi-spark functionality. Losses in the intake have been reduced by new more linear high- and low-pressure air ducts while the all-new exhaust system benefits from a single-piece exhaust header.

Mechanical efficiency is further optimised by a variable-displacement oil pump that reduces hydraulic power requirements by up to 30% compared to a conventional pump. The adoption of a new intercooler to simultaneously minimise fluid-dynamic losses and increase air cooling also contributes to the engine's performance.

The Portofino's engine continues Ferrari's zero turbo lag tradition, with instantaneous throttle response in under 1 second. This is the direct result of the adoption of innovative solutions such as: a flat-plane crankshaft, which, with its compact size and lower rotating mass, improves fluid-dynamics; compact turbines with a low moment of inertia and twin-scroll technology that reduces the interference between the exhaust pulses from different cylinders and increases the pressure; and a single-cast exhaust manifold with equal-length pipes to optimise the pressure waves.

The Ferrari Portofino features Variable Boost Management, a control software developed by Ferrari that adjusts torque delivery to suit the gear selected. As the car goes up through the gears (from 3rd to 7th), the amount of torque delivered by the engine increases all the way up to 760 Nm. This has allowed Ferrari to adopt longer gear ratios in the higher gears, which helps keep fuel consumption and emissions down on the one hand, while adopting different torque curves through the rev range in the lower gears for a feeling of strong, continuous pick-up.

In line with long-standing Ferrari tradition, every single Prancing Horse engine has its own particular soundtrack that makes it unique. This is also true of the Ferrari Portofino.

Aside from a new exhaust line, electronically-controlled by-pass valves have been adopted in a first for Ferrari, delivering improvements in actuation speed and precision. The new valves guarantee that the soundtrack changes in line with the various situations in which the car is used:

- Ignition: the valve stays closed to deliver a muted, moderate sound



- Comfort Manettino position: the valve opens to a moderate degree to produce a marked, recognisable sound that still will not be out of place in an urban context and on longer journeys
- Sport position: the valve opens and produces a sportier, more seductive sound from the lowest engine speeds all the way up to the red line.

ARCHITECTURE AND WEIGHT REDUCTION

One of the Ferrari Portofino's most impressive features is that it is significantly lighter than the California T. To achieve this, the Prancing Horse engineers worked extensively on every aspect of the car.

All the body-in-white and chassis components were redesigned and integrated to an even greater extent. The A-pillar, for example, now consists of just 2 pieces compared to 21 different components in previous models. Modern production technologies, most notably sand-casting which allows the creation of hollow components, allowed designers to create innovative forms that are lighter.

These technologies also improved body stiffness by 35% while weld lengths on the body-in-white and chassis are 30% shorter than in the previous model, enhancing assembly quality still further.

The bodywork and external components have been rationalised in the same way and an example is the new retractable hard top which has been completely redesigned, including the movement mechanism, with a reduction in weight compared to the California T's.

The car's interior was also subject to meticulous research. The structure of the seats was completely redesigned and constructed in magnesium alloy to cut weight and the new air conditioning system is more compact and efficient. All these solutions combine to lighten the car yet simultaneously improve occupant comfort.

Other areas on which weight was shaved off were various components of the electronics and engine. The result is that the car is 80 kg lighter than the California T.

VEHICLE DYNAMICS

Much honing was also done on the both the Ferrari Portofino's basic running gear and its components and their electronic control systems.

The car's vehicle dynamics were optimised by working on its suspension set-up through the introduction of stiffer springs (+15.5% at the front and +19% at the rear) and by adopting the latest evolution of the magnetorheological damping system (SCM-E) to guarantee superb ride comfort. The Magnaride system has been updated with dual-coil dampers to improve the precision and speed of



adjustment of the magnetic field as well as a new ECU (Gen3) which implements control algorithms developed by Ferrari, in particular those relating to vertical dynamic control of road input frequencies.

The result is improved body control and reduced roll, enhancing the sporty driving feeling, particularly when the Manettino is in 'Sport' mode. In 'Comfort' mode, on the other hand, ride comfort is superior to the previous model on rough or uneven road surfaces.

The adoption for the first time on this type of Ferrari model of the third generation electronic rear differential (E-Diff3) also improved lateral performance parameters, thanks to the combined action achieved by integration with the F1-Trac traction control. This level of integration of all the electronic vehicle dynamics controls ensures that the car is easier to drive and handles even better in low grip situations, making it more versatile.

The Ferrari Portofino is the first Prancing Horse GT to boast Electric Power Steering which plays a pivotal role in the feel of the car in the driver's hands. Steering wheel responsiveness has been improved with a smooth, natural feel to the assistance and feedback, while re-centring of the wheel is dynamic and consistent with the speed of the car when the manoeuvre is being executed.

Lastly, thanks to the steering wheel's dynamic performance and its integration with the E-Diff3, the steering ratio (steering wheel angle/wheel angle) has been reduced by 7%.

STYLE AND AERODYNAMICS

The Ferrari Design Centre-penned Portofino is an aggressively-styled car with a two-box fastback configuration – unprecedented in a coupé-convertible with a retractable hard top - that adds extra sleekness to its silhouette, lending it a sportier character without impinging on its elegance and dynamism.

As is always the case in Ferrari, the aerodynamic development process involved every single area of the car and its development, from the initial layout choices to the management of the flows involved in heat dissipation, and the definition of every single detail of the underbody and bodywork. The Aerodynamics department and Ferrari Design collaborated on a day-to-day basis on the latter in particular.

The development process focused principally on aerodynamic efficiency with a particular emphasis on cutting drag which is pivotal to both pure performance, and on keeping fuel consumption and emissions down. This goal proved



challenging as Ferrari's engineers had to guarantee improved engine heat dissipation (as power output was boosted by 40 cv) which could have resulted in an increase in C_d over the previous model. Nonetheless, they managed not just to dissipate the increased heat energy without increasing radiator dimensions but also to achieve a drag (C_d) figure of 0.312 – an improvement of 6% over the previous model.

A subtle interplay and juxtaposition of concave and convex surfaces lends a sense of three-dimensionality to the body, yet also creates an impression of great naturalness which can be seen in the way the flows needed to increase aerodynamic efficiency were optimised.

At the edges of the large central radiator grille are two side air intakes for the intercoolers, while the two vents in the bonnet are larger and further apart to evacuate heat from the engine compartment without impacting occupant comfort with the top down.

The front of the car is also underscored by a new headlight assembly with a more horizontal development which is designed to follow the crest line of the front wheelarches. Half-hidden at the outer edges of the headlights are highly innovative aerodynamic “air curtain”-type intakes which vent into the front of the wheel housing to increase the evacuation of air coming from the wheel spokes and wheelarch and channel it along the scooped sides, thereby reducing drag created by the wake from the front wheels.

Great attention was also focused on the way in which the surfaces of the car's flanks catch the light, creating a marked “chiaroscuro” effect and thus breaking up the mass. Meticulous modelling of the curved profiles and tauter lines underscore the car's design. A crease line runs from the edge of the bonnet along the front wheelarch and across the door. The result is a slender but well-defined belt-line which underscores the elongated muscle of the upper front wheelarch and the new air extraction fin, cleverly located to relieve the pressure inside the wheel housing via a clearly visible vent.

The trimaran design of the tail underscores the impression of solidity and breadth given by the rear stance. This elegant solution enabled the designers to skilfully sculpt the volumes in order to cleverly conceal the rear volume housing the RHT. The tail lights, which are now further apart rather than part of the boot lid, incorporate all of the optics to save weight.

Here, too, great attention was focused on the delicate parameters that influence the detachment of the air flow from the upper bodywork. The profile where the rear screen meets the rear spoiler has been optimised both in terms of



volume and detail. The position of the tail lights meant that the spoiler, and thus the controlled flow detachment region, could be extended, cutting overall drag.

INTERIOR

While the Portofino's exterior exudes a stylish compactness and instantly marks out its GT vocation, its cabin too has also been carefully designed and developed. The Ferrari Design team pinpointed certain specific essential requirements, the foremost of these being formal and functional coherency between the car's exterior and its interior, weight reduction and creating more space for occupants.

Seen in plan view, the cockpit's symmetrical arrangement and the improved rear seat space are clear. The dashboard architecture in particular features two shells, which incorporate all of the technical components, and a bridge which visually connects the instrument panel area with the central tunnel which, itself, was clearly conceived to act as a divider between driver and passenger.

One signature characteristic of any Ferrari car is the meticulous care lavished on the selection of the materials, trims and assembly procedures. The Ferrari Portofino's sporty yet elegant character highlights these aspects of the creative and design processes demanded to hone every last detail, marrying high-tech elements and materials with manual assembly and handcrafted finishes.

The seats are also the product of a special research study and have an innovative magnesium structure. Different density padding and an ultra-compact seatback profile mean that there was more space to devote to the rear seats than in the previous model.

The optional 18-way adjustable electric seats ensure that even longer journeys are exceptionally comfortable and relaxing. Aside from longitudinal seat and backrest adjustment, the seat height and angle can also be adjusted, as can the side cushions and the central and lumbar regions of the backrest. The new Comfort button on the side of the front seats brings up on the infotainment display the controls for the adjustable-length seat cushion (which provides under-thigh support for even taller drivers), seat and backrest side and back support air cushions and heated seat.

In line with Ferrari's other GTs, the Portofino's HMI (Human-Machine-Interface) includes an instrument panel and dual TFT displays arranged around the rev counter in a generous circular anti-glare binnacle on exactly the same axis as the multifunctional steering wheel.



The passenger has an optional dedicated capacitive display. Directly linked to the main screen, it provides all information relating to car speed, rpm and gear engaged. Lastly, the infotainment system functionalities are controlled via the 10.25" touchscreen located at the centre of the dash within easy reach of both driver and passenger.

One of the contributors to improving in-car comfort is the impressive progress made in the efficiency of the air conditioning system with a 20% increase in air capacity and a contemporaneous reduction of 8dB in noise levels. Lastly, when the top is down, the new wind deflector cuts air flow over the body by 30%: -17% over the head and -40% over the chest. This results in an appreciable reduction in aerodynamic noise in the cabin.



Technical Specifications

Engine

Type	V8 - 90° turbo
Total displacement	3855 cc
Bore and stroke	86.5 mm x 82 mm
Max. power output *	441 kW (600 cv) at 7500 rpm
Maximum torque *	760 Nm between 3000 and 5250 rpm
Max. engine speed	7500 rpm
Compression ratio	9.45:1

Weight and dimensions

Length	4586 mm
Width	1938 mm
Height	1318 mm
Wheelbase	2670 mm
Front track	1633 mm
Rear track	1635 mm
Kerb weight**	1664 kg
Dry weight**	1545 kg
Weight distribution	46-54% front/rear
Boot capacity	292 l
Fuel tank capacity	80 l

Tyres

Front	245/35 ZR20; 8J x 20"
Rear	285/35 ZR20; 10J x 20"

Carbon-ceramic brakes

Front	390 mm x 34 mm
Rear	360 mm x 32 mm

Transmission and gearbox Electronic controls

F1 dual-clutch transmission, 7-speed
ESP, ESC, with F1-Trac, E-Diff 3, SCM-
E with twin solenoid

Performance

Maximum speed	>320 km/h
0-100 km/h	3.5 sec
0-200 km/h	10.8 sec
100-0 km/h	34 m

Fuel consumption CO₂ emissions***

Fuel consumption	10.7 l/100 km
Emissions	245g CO ₂ /km

* In 7th gear

** With specific optional extras

*** Combined cycle. In homologation phase. ECE+EUDC with standard HELE configuration