Product Information
599 GTO

May 2010

Ferrari 599 GTO

Product Information

Attn: Dealer Responsible's Attention

Product Marketing Communication No. 2/2010
Maranello, 3rd May 2010

Dear All,

In view of the upcoming market distribution of the Ferrari 599 GTO, we are sending you this product note providing the general information about main product features and technical specifications.

Kind regards,

Andrea Bassi

Ferrari 599 GTO

Product Information

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PRODUCT CONCEPT

The 599 GTO is the fastest and most powerful road-going Ferrari ever built.
Built as a special series limited edition car, it epitomises the very cutting-edge of advanced research applied to road-going cars, inheriting its character from the invaluable experience Ferrari gained through the 599XX project. The development of the 599XX, in fact, provided the technologies adopted for the 599 GTO's engine, brakes, weight-reduction measures and dynamic behaviour. The result is uncompromising acceleration, road-holding and responsiveness - the signature characteristics of all of Ferrari's extreme sports cars.

The 599 GTO flanks the 599 GTB Fiorano in the range and will underscore the values that lie at the heart of the Ferrari 12 cylinders:
- Sportiness
- Uniqueness and technological innovation
- Driving pleasure
- Tradition

The 599 GTO is more pared down than the 599 GTB. It is also more extreme and exotic in contents, handling, responsiveness, soundtrack. Its styling is functional to its enormous aerodynamic power and product contents.
The 599 GTB retains its distinctive features, born to meet the expectations of clients for whom, not only performance, but also versatility and comfort remain strong purchasing motivations.
The 599 GTO is aimed to collectors, purist clients loyal to the noble Ferrari tradition of blistering performance.
Ferrari has deliberately highlighted the new car's high performance content and exceptional prowess, by giving it what is probably the most glorious badge in its history, GTO. This name also highlights the consistency with its product mission, the road homologated version of the 559XX.

PRODUCT CONTENTS

Lighter Vehicle :
Thickness reductions of aluminium bodyshell and windows, composite bumper, sill and underbody in composite/carbon fibre, forged rims, ...

-100 kg

Aerodynamics:
wheel doughnuts, bonnet, boot lid, bumper, sill, underbody and diffuser

Improved aerodynamic efficiency +80%, double downforce vs GTB

Engine:
High engine speeds
Engine soundtrack
New intake and exhaust

670 CV, 8,250 Rpm

Evolved Vehicle Dynamics:
- 20% Car response time (responsiveness)
- 15% Steering wheel angle activity indicator

More responsive

Enhanced F1-Superfast Gearbox:
Even sportier feeling
Improved thrust and pick-up

Reduction of gear ratios (-6%), 60 ms shift times

PRODUCT CONTENTS: MAIN INNOVATIONS

PERFORMANCE

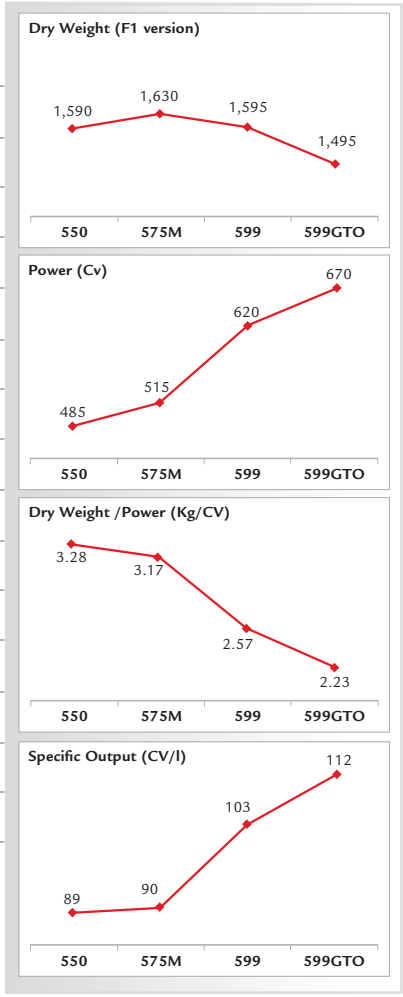
The most powerful and performing ferrari ever built: main figures

	599 GTO
Engine	V12
Max Power @ rpm*	670 @ 8,250
Specific Output (CV/Liter)*	112
Max Torque (Nm) @ rpm	620 @ 6,500
Weight	
Dry Weight (Kg)	1,495
Weight/Power (Kg/CV)	2.23
Performance	
Max speed (Km/h)	>335
0-100 Km/h (s)	3.35
0-200 Km/h (s)	9.8
0-100 Km/h (s)	19.9
Fiorano Lap	1'24"
Aerodynamics	
Efficiency	1.01

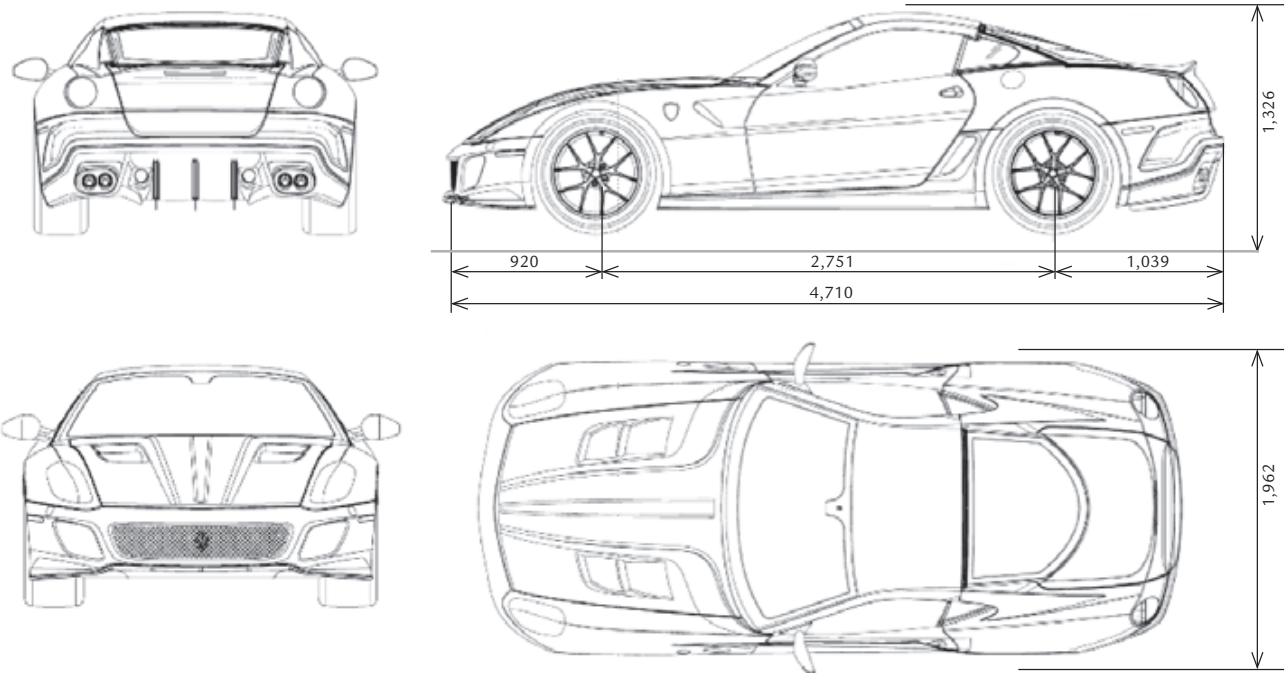
Best in class

** Included 5 CV dynamic overboost*

For further details see also Technical data (pag. 37)



VEHICLE DIMENSIONS

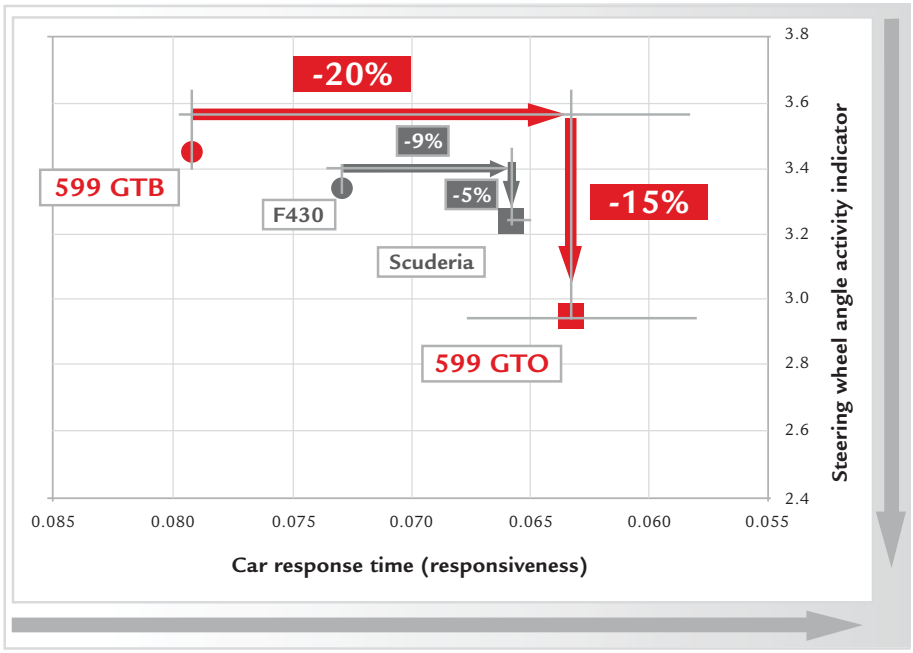


599 GTO		599 GTB	
Length	4,710	Length	4,665
Width	1,962	Width	1,962
Height	1,326	Height	1,336
Wheelbase	2,750	Wheelbase	2,750

Dimensions in mm

VEHICLE DYNAMICS: INTRODUCTION

The 599 GTO's set-up and development have resulted in absolutely extraordinary performance levels.
Particularly in terms of maximum lateral acceleration, or cornering speed, and reaction to commands, and thus the car's responsiveness and dynamism.
These results were made possible by the integrated development of software control systems and mechanical (HW) features, resulting in a reduced static margin value (understeer indicator)



Compared to the 599 GTB not only the steering wheel activity has been reduced by 15% (150 km/h at 0.4 g), but also the car response time as been decreased by 20%.

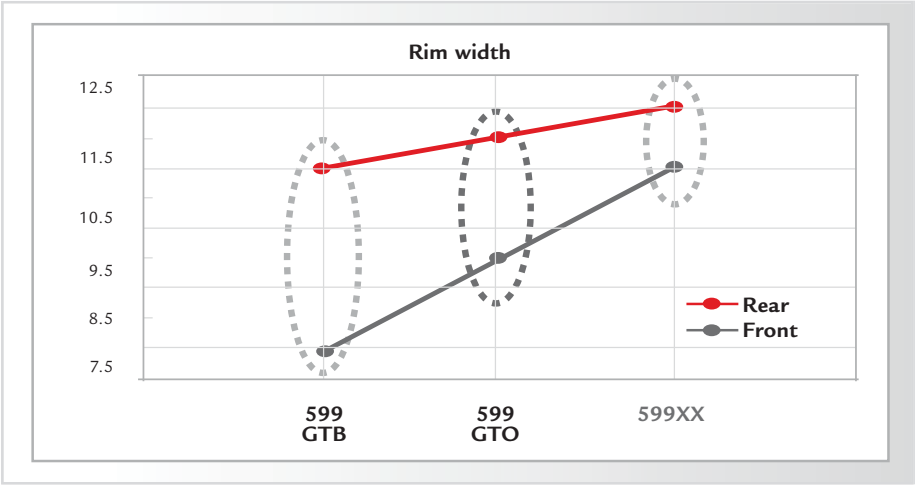
The main elements encompassed by this integrated development approach are, as for the mechanical components:
- Tyres
- Set-up
- Suspensions

As for the sofware systems involved:
- ESP
- F1- Trac
- SCM2 (Magnetorheological Suspension Control).

VEHICLE DYNAMICS: MECHANICAL COMPONENTS

With respect to the 599 GTB, tyre and rim width dimensions have a more balanced ratio between the front and rear, following 599 XX settings' philosophy. The front axle was further strengthened thanks to increased dimensions of both channel and tyre size.
This helps to guarantee that the front axle will generate more lateral force as the car enters the corner. It means the car corners better and delivers more lateral acceleration.

	599 GTB	599 GTO
FR:	245/35 20 8.0	285/30 20 9.5
RR:	305/35 20 11.0	315/35 20 11.5



The suspensions and the global hardware setup have been developed using different ratios between springs and bars, allowing the improvement of the car behaviour in roll phase, especially on the rear side, thus helping the understeer reduction.

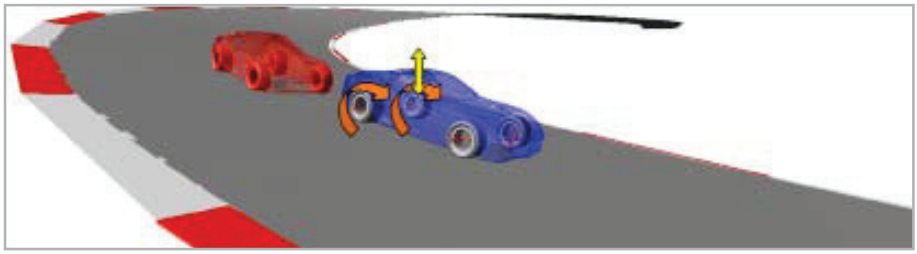
VEHICLE DYNAMICS: CONTROL SYSTEMS

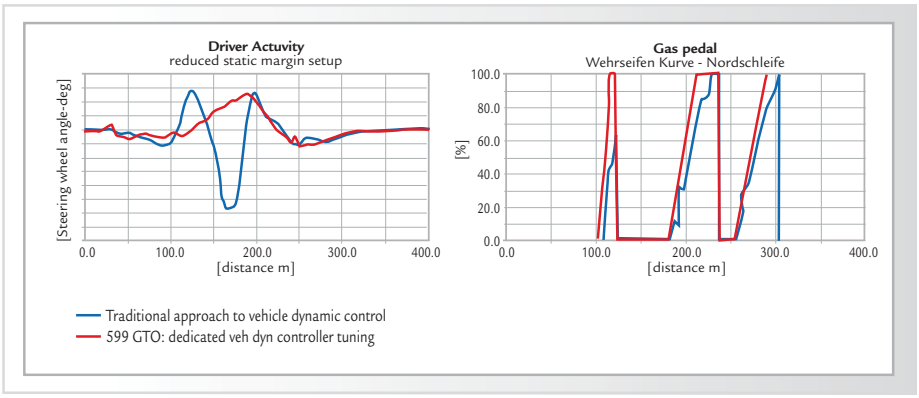
The calibration of the control systems and specific set-up helps to ensure smoother, more high performance driving of a standard impossible to achieve with traditional set-ups and control systems. The envolved syatems, as already mentioned, are:

ESP	Stability control via individual interventions on the brakes
F1- Trac	Further evolution of the racing-derived traction control system, a generation up from the 599 GTB. Grip estimate now covers a broader range.
SCM2	Evolved suspension control with: • 3 new accelerometers to monitor body roll in real time • Faster CPU

VEHICLE DYNAMICS: CONTROLS INTEGRATION

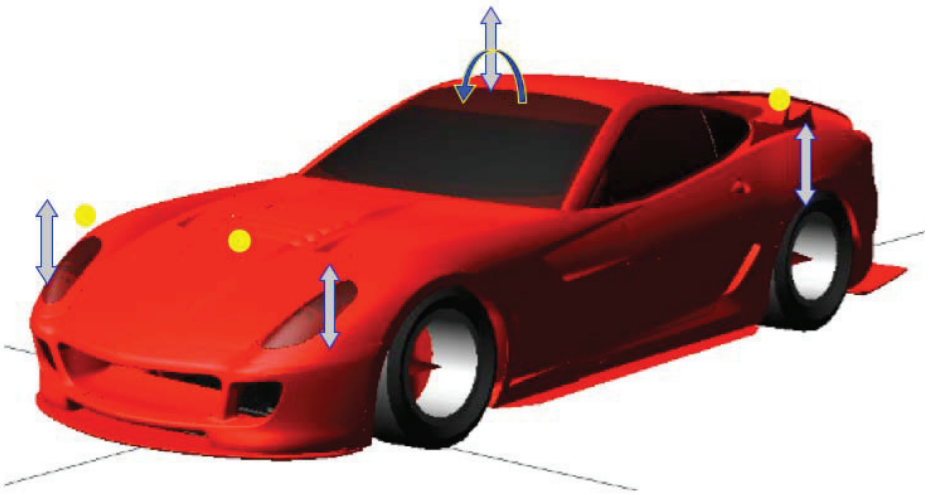
To be able to minimise corner entry time whilst maintaining the desired trajectory, the SCM2 system optimally and speedily distributes damping between the front and rear axle.
Contemporaneously and in an integrated, uninvasive way, the ESP intervenes independently on all four wheels to speed up and control yaw speed.
When exiting corners, the SCM2 system continues to monitor balance, this time in tandem with the F1-Trac to maximise longitudinal and lateral acceleration, allowing the driver to use the acceleration pedal in a timely fashion.





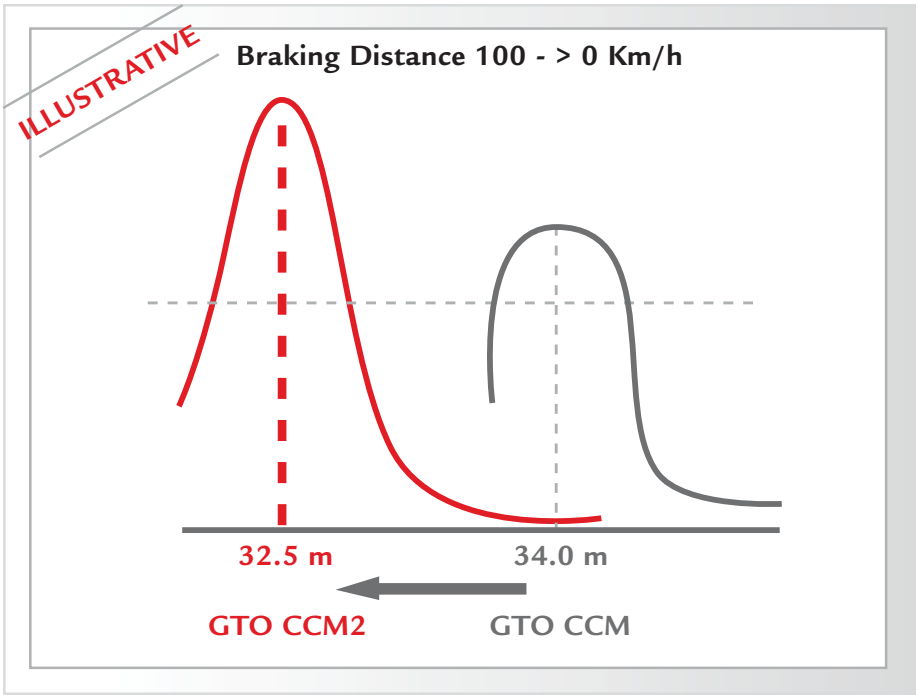
VEHICLE DYNAMICS: SCM2 EVOLUTION

The 599 GTO SCM system is integrated with the accelerometers derived from the 599XX project. These sensors help to ensure more precise setting of vehicle control systems, as parameters provided are actual readings rather than estimates.
Moreover a new ECU (Electronic Control Unit) has been implemented, cutting system response times thus helping to guarantee more eager car (-50% input time).
The new generation damper, features a new piston rod bushing able to reduce internal frictions (-35%) and allowing a more precise control in the case of minor road inputs, resulting in improved perceived vibrational comfort.



BRAKES

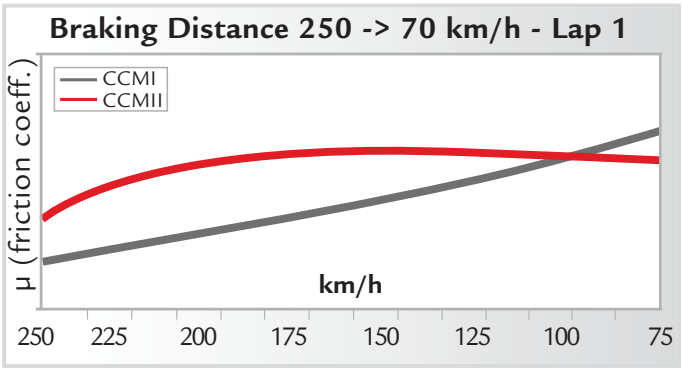
The 599 GTO is the first road-going Ferrari to use CCM2 brakes, in which carbon-ceramic material is used in the pads as well as for the discs.
The advantages to this are:
- Consistent, smooth performance.
- Lighter overall CCM system without impinging on performance.
- Shorter braking distances thanks to specific calibration in high grip situations, aided by consistent performance (100>0 km/h in 32.5 m).

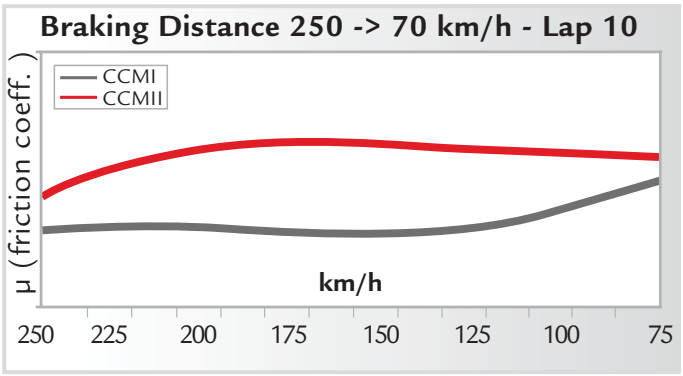


Performance brakes dispersion curves

BRAKES

The carbon-ceramic brake pads featured by the 599 GTO result in smoother, more consistent performances even within a single braking instance. Response to pedal pressure is consistent and this improves the control systems' predictive and intervention capabilities.





The use of carbon-ceramic material (CCM) brake pads means that they will not degrade even at high operating temperatures, avoiding attrition coefficient reduction phenomena that might hamper braking efficiency. This also means more powerful braking in repeated high performance braking situations

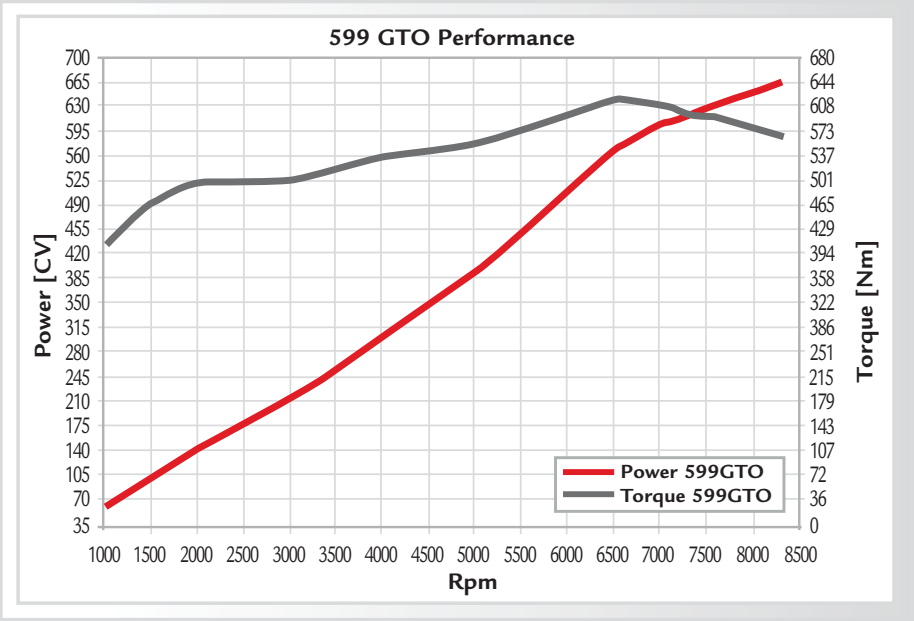
ENGINE

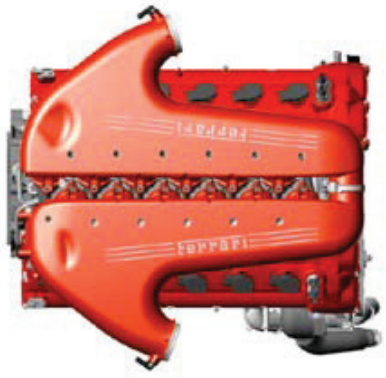
The 599 GTO engine is a V12 longitudinal mid-front-mounted with dry sump lubrification and variable timing on both intake and exhaust.
In line with Ferrari 65° V-engine tradition, the crank has a 120° angle between the throws. The geometry and technology used for the intake manifold is derived from the 599XX.
The intake manifolds are aluminium with thinner walls to reduce mass. They have short inlet tracts to maximise volumetric efficiency at high engine speeds and reduce losses.
A compensation system between the two cylinder banks via a front connection improves cylinder-cylinder volumetric efficiency, thereby boosting maximum power.
Furthermore, the 599 GTO's exhaust manifolds have a new 6-1 layout with just one catalyser per cylinder bank. Hydroforming technologies allowed the manufacture of innovative and thinner-than-standard tubing (resulting in a significant weight saving) together with a strong reduction in the number of welds required.

PARAMETER	599 GTO
• Architecture	V12-65°
• Bore (mm)	92
• Stroke (mm)	75,2
• Total Displacement (cc)	5,999 cc
• Max Power (CV)	670 @ 8,250 rpm (*)
• Max Torque (Nm)	620 @ 6,500 rpm
• Max Revs (Limiter Level)	8,400 rpm
• Specific Output (CV)	112 CV/Litre

(*) 5 CV aerodynamic overboost

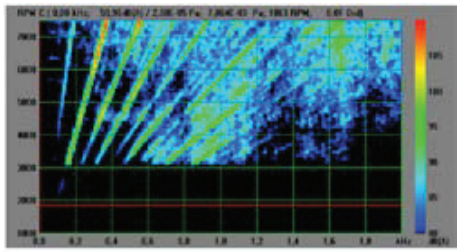
ENGINE


599 GTO Performance
Power [CV]
Torque [Nm]
Rpm
Power 599GTO
Torque 599GTO
700 665 630 595 560 525 490 455 420 385 350 315 280 245 210 175 140 105 70 35
680 644 608 573 537 501 465 429 394 358 322 386 251 215 179 143 107 72 36 0
1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500 8000 8500

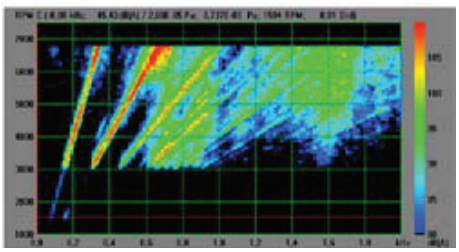


ENGINE: EXAUST SYSTEM SOUNDTRACK

A new 6-1 layout and primary tubes all of equal length have produced a shriller, purer soundtrack with the main combustion harmonics predominating.
The silencer assembly was designed with the dual goal of retaining the thrilling signature Ferrari 12-cylinder soundtrack, whilst guaranteeing an excellent level of acoustic comfort.
The graphs here below highlight the work results: a more homogeneous sound distribution and the development of higher energy top levels, which underpins the recognizable specific soundtrack of the GTO.



599 GTB



599 GTO

ENGINE: FRICTION REDUCTION

Particular attention was focused on reducing internal friction in the engine, which was cut by 12% thanks to the use of innovative materials and processes:

- Printed Grafal®-coating on the piston skirts
- Superfinished cam lobes (the same process as used on F1 engines)
- DLC (Diamond-Like Carbon) coating on the hydraulic tappets
- A new crankshaft featuring counterweigts with aerodynamic profiling

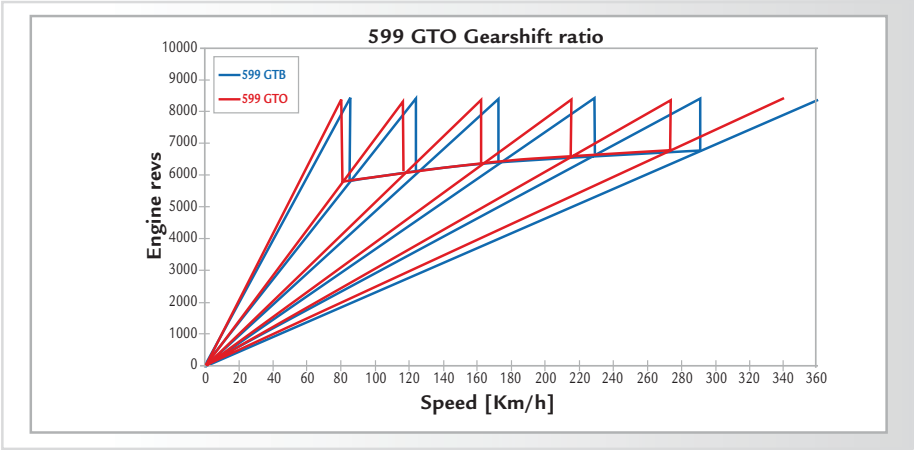
Standard Shape *Optimized Shape*

Optimised calculations permitted the design of a new driveshaft geometry involving counterweights with aero-dynamic profiles to reduce ventilation losses. The specific shape also reduces masses around the rotation axis which cut overall mass by around 9%.

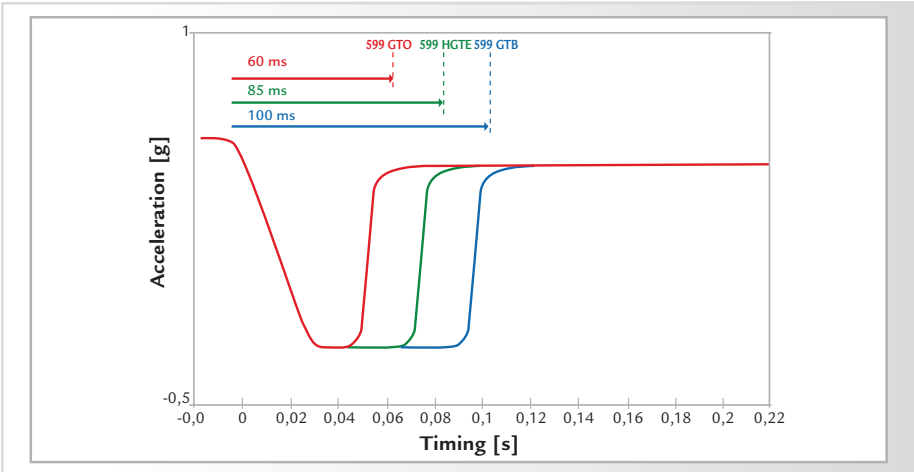
The actions aimed to internal friction reduction resulted in a 3 % engine consumption decrease. The energy thus available has been exploited to gain a more sporty gear ratio without affecting the global vehicle consumption.

GEARBOX

The ratios, as described by the graph chart here below, have been reduced by 6%.



The 599 GTO gearbox has been modified to help the car reaching top speed near to revs limiter functioning threshold. The shifting time, reduced as indicated in the graph chart to 60 ms, and the multiple down-shifting function introduction, are further steps towards the top level performance the car guarantees.



HUMAN MACHINE INTERFACE

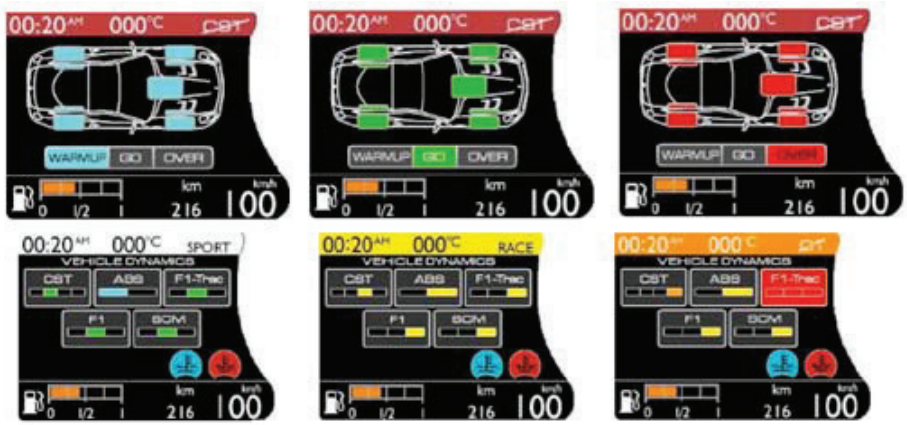
The Manettino is essential to ensuring the optimal setting of the car's sophisticated control systems in all track and road conditions.
The 599 GTO's Racing Manettino puts the emphasis on track-specific driving, giving the driver even more choice in terms of the electronic control parameters involved (the ICE setting seen on the 599 GTB Fiorano has been replaced by CT-OFF).
Controls (including stability) can be deactivated thanks to a set-up that remains balanced in all driving conditions. With respect to the 599XX, this allows the five settings to be retained on a single manettino and simplifies the interface for easier road and track use.

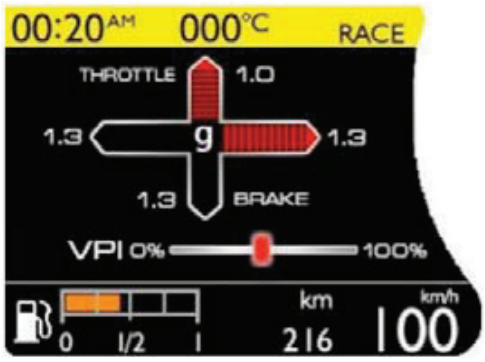
POSITION	ENGINE	GEARBOX	DAMPER	ABS	F1-Trac	ESP
	NORMAL By-Pass Normal	NORMAL	SOFT	NORMAL	OFF (Bosch ASR)	NORMAL
SPORT	SPORT By-Pass Normal	SPORT	SPORT	NORMAL	SPORT	SPORT
RACE	SPORT By-Pass Sport	RACE	RACE	SPORT (Perf. ABS)	RACE	RACE
CT	SPORT By-Pass Sport	RACE	RACE	SPORT (Perf. ABS)	OFF	RACE
CST	SPORT By-Pass Sport	RACE	RACE	SPORT (Perf. ABS)	OFF	OFF

Moreover, the 599 GTO features matt carbor fibre gear shift paddles, longer and more ergonomic than the GTB ones.

HUMAN MACHINE INTERFACE: VRE

The Virtual Race Engineer is a valuable technical support tool, monitoring optimal vehicle status conditions as well as providing information on vehicle performance.

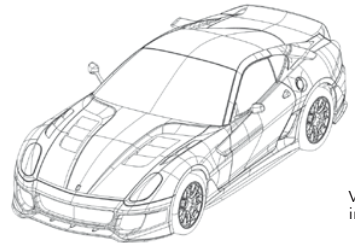




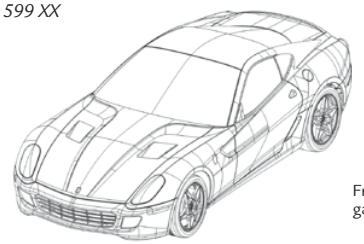
The performance indicator screen displays lateral and longitudinal acceleration parameters using Formula 1-inspired graphics, and a performance indicator ranging from 0% to 100%.
The latter shows the car's performance levels based not only on acceleration readings but also on torque, power and speed readings.

AERODYNAMICS

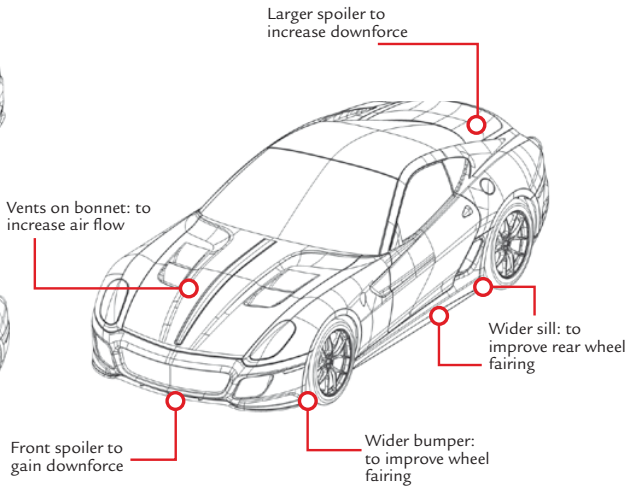
The aerodynamic solutions adopted have been developed on the 599 XX and then transferred to the 599 GTO, focusing on the improvement of the downforce that didn't affect drag values: this approach is consistent with the car mission, extreme performance homologated for road use. The drawings here below show the body parts modified to gain the target values and the improvements related to each.



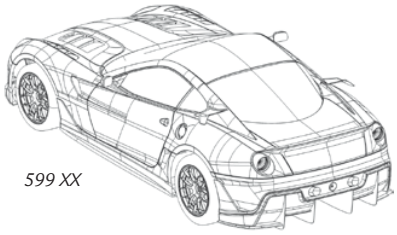
599 XX



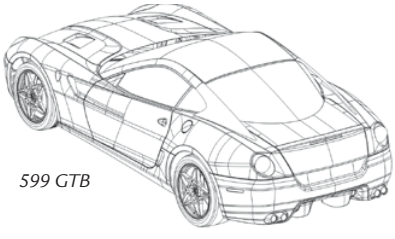
599 GTB



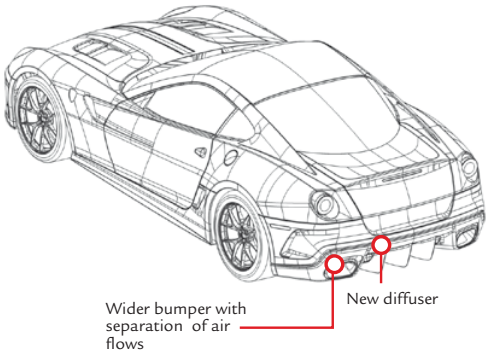
599 GTO



599 XX



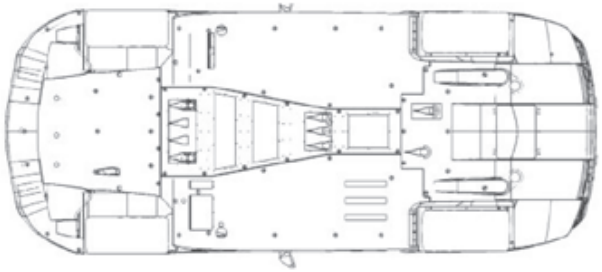
599 GTB



599 GTO

AERODYNAMICS

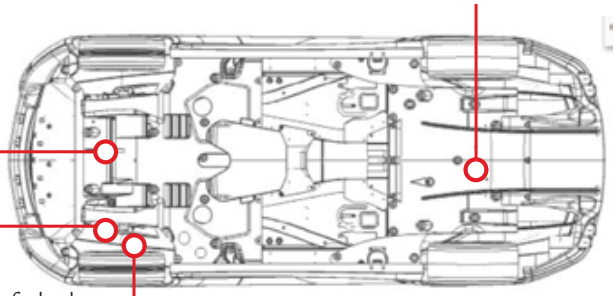
Modifications based on the 599 XX experience, were implemented also on the car underbody, lowering 10 mm both the front and the rear areas, creating air vents facing into car and introducing diffusers in the front side helping in downforce optimization; moreover, the brake cooling system is much closer to the 599 XX one, in order to gain the efficiency needed for the higher temperature reached by the components.



599 XX

Aerodynamic front underbody in XX position (10mm lower) with air vents facing into car

Rear aerodynamic underbody in XX position (10mm lower) and double-curve diffuser (feature specific to GTO)



599 GTO

Diffusers in front of wheels to optimise front downforce.

Brake cooling derived solely from XX

The double curve diffuser in the rear side results in an optimisation of the airflows, connected to an increase in rear downforce.

AERODYNAMICS

Finally, to integrate all these improvements, Ferrari introduced the wheel doughnuts, device helping a more efficient cooling of the brakes and most of all a lower drag value, thanks to the reduction of energy losses caused by turbulence around the wheels.

Without Wheel Doughnuts

Using with Wheel Doughnuts

The red areas in the drawings above render the mentioned energy losses reduction achieved implementing the wheel doughnuts.

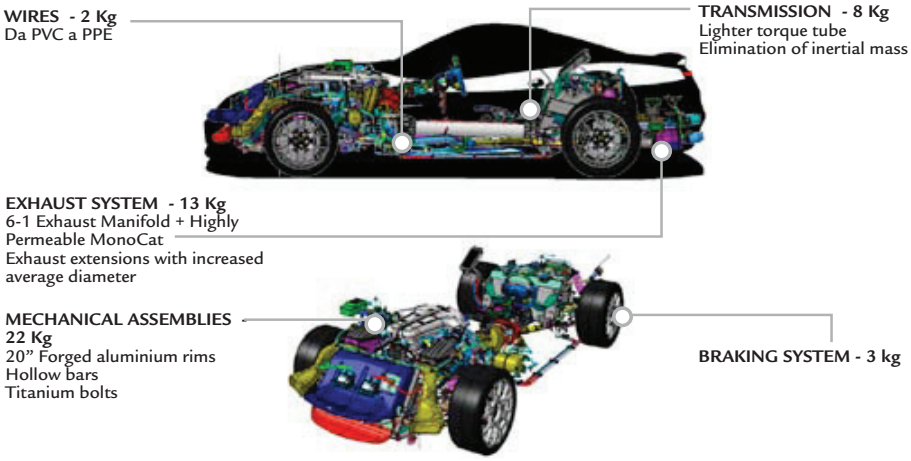
DESIGN

The 599 GTO lines combine the sporty character of the car and the aerodynamic efficiency derived from 599 XX project studies with the innate elegant and aristocratic soul of the 599 GTB, sublime expression of the Ferrari 12 Cylinders tradition.
The modifications on the body shape, as the air intake on the bonnet, the larger wheel archs and sills, the larger front spoiler and the wheel doughnuts, while working on the functional aerodynamic side, give the car a more aggressive and extreme character.
The two tones body color, standard on the limited series, guarantees an even more distinctive personality of the car. Futher to this standard option, as the picture describes, it is possible to personalise the car with the colors and design recalling some of the most glorious Ferrari cars of the past years.
The final result is a more extreme and essential car compared to the 599 GTB, but featuring the same care for the details in design and materials, together with an even more exclusive soul.

WEIGHT REDUCTION

Throughout the 599 GTO's development, particular attention was paid to weight-saving. In fact, the car is 100 kg lighter than the 599 GTB (F1 gearbox version). The weight-saving measures involved every area of the vehicle: chassis, bodywork, engine and gearbox, running gear.
The goal achieved: a power-weight ratio of just 2.23 kg/CV.

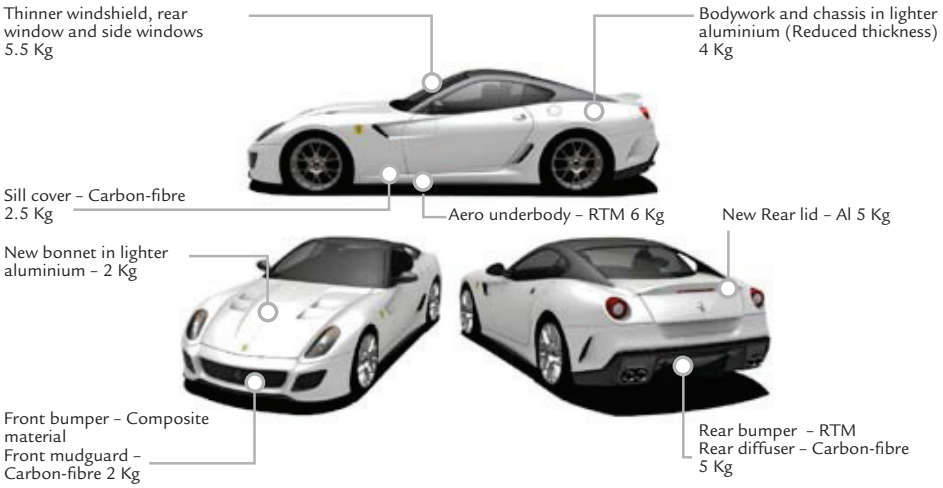
Weight reduction: Mechanical hardware and Electronic/Electric Systems



The new aluminium forged wheel rims also offered their contribution to the exceptional dimensions-weight ratio apart from giving the 599 GTO a highly specific, attractive style all of its own.

WEIGHT REDUCTION

Weight Reduction: Boywork and chassis: 30.8 kg



The solutions adopted for the car interior included a lower density materials, technical fabric and carbon fibre, to replace leather upholstery; a new seat upholstery completes the interior of the car.

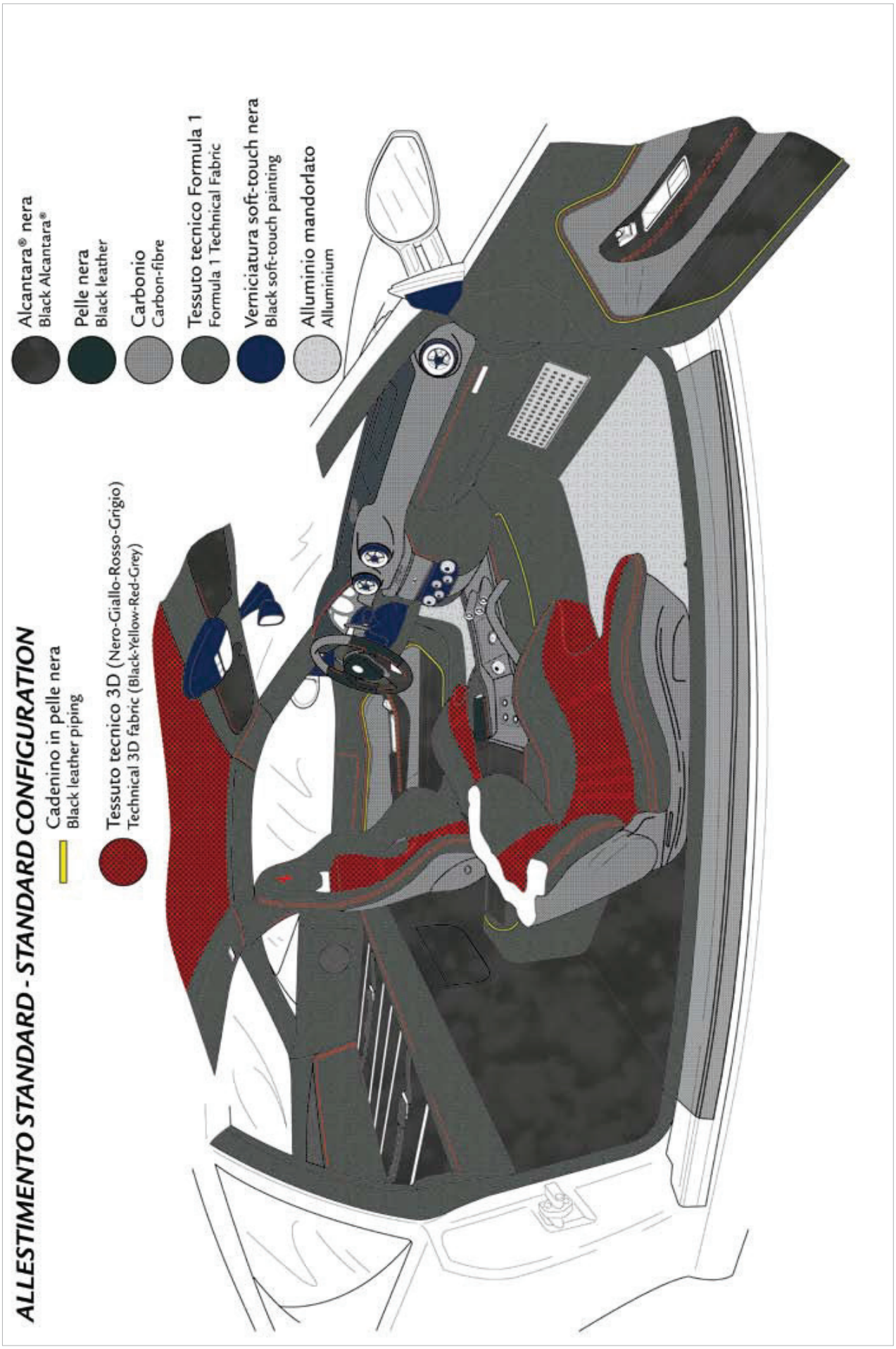
WEIGHT REDUCTION

The interior reflects the car's sporty character and is entirely functional and performance-oriented, through choice aimed to weight reduction. Wider use has been made of light and technical materials without affecting components finishing and care for every detail.
Stripped aluminium is used for the floor and there are numerous matt carbon-fibre inserts coupled with F1 and 3D technical fabric trim. As an optional Alcantara and leather upholstery are also available (see also attached drawings).
Among the other elements, the 599 GTO's F1 console has been completely redesigned on an ergonomic and stilistic point of view to safeguard its track-inspired character. The trim is all matt carbon-fibre and technical fabric in line with the car's concept.

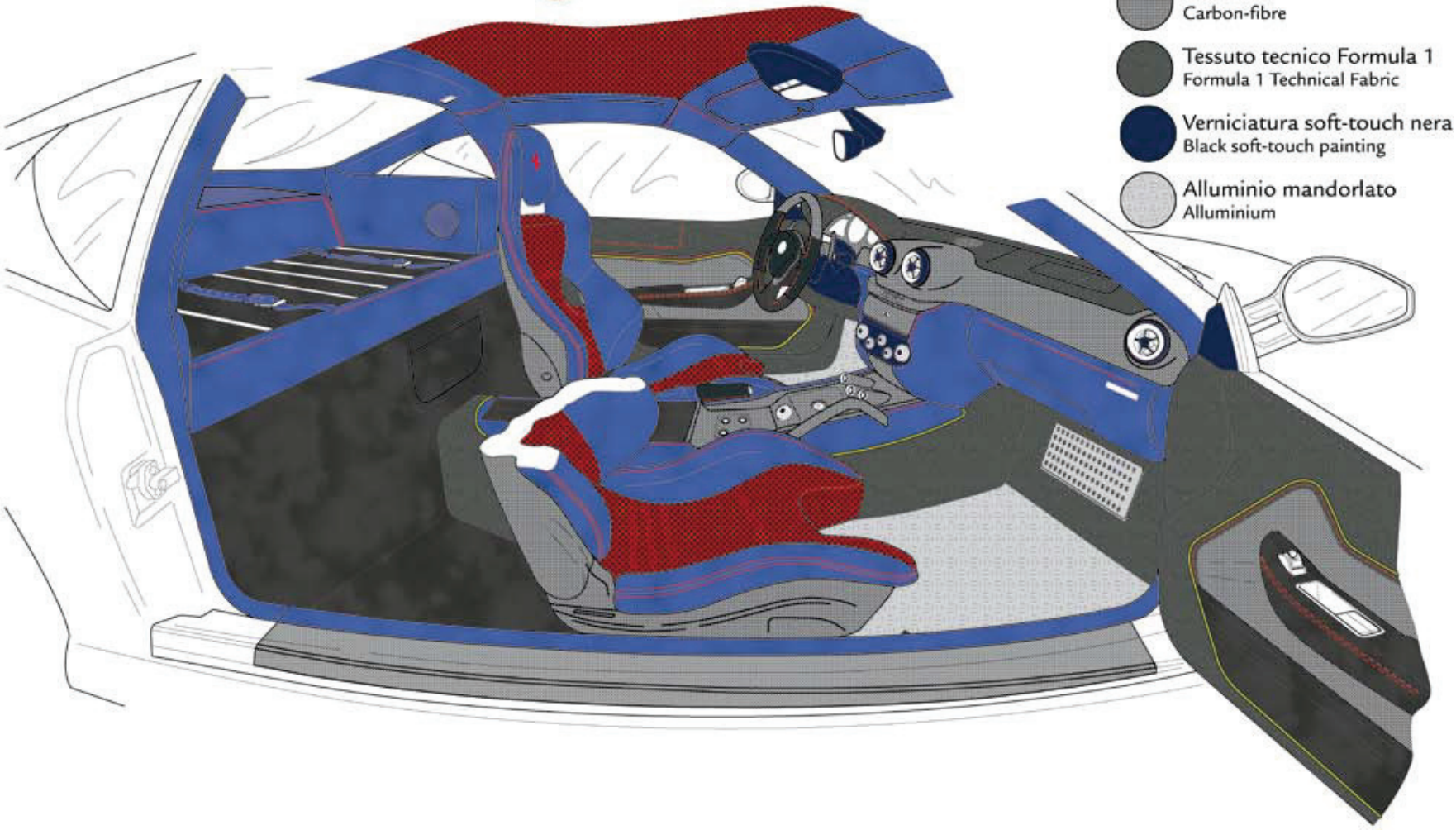
The 599 GTO features the racing seat, with the following characteristics:
- Manual backrest angle adjustment and movement.
- Available in choice of three sizes.
- All-carbon-fibre structure.
- Upholstery in Cordura-type or 3D technical fabric (standard).
- Alcantara and leather upholstery (personalisation option).
- Fixed manual seat with height adjustment only by authorised service centre (personalisation option)

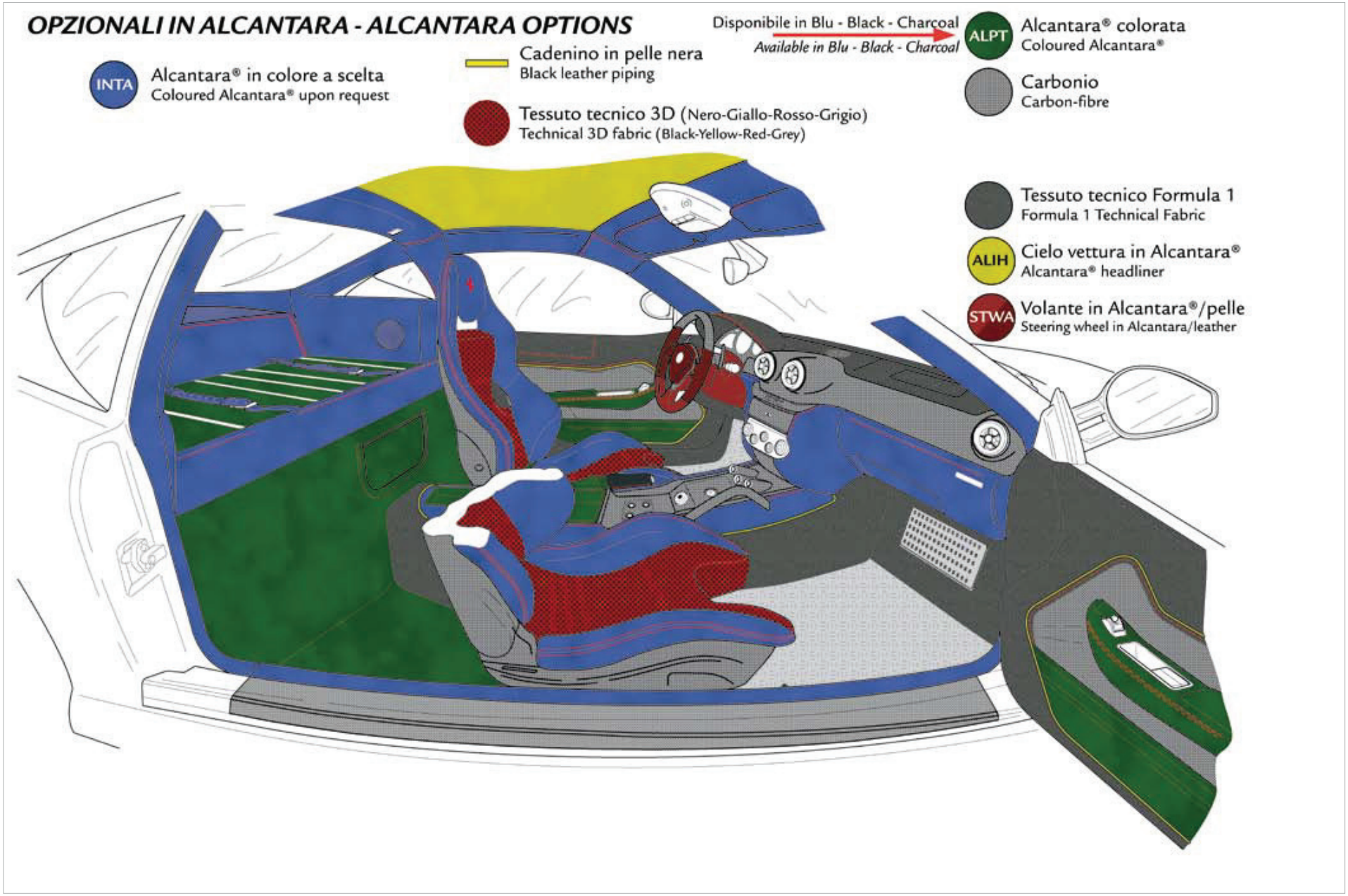
The seat featuring full-electric adjustment is offered as standard for the US market.

Further details on the optionals available for the car configuration will be provided in the Product Personalisation note.

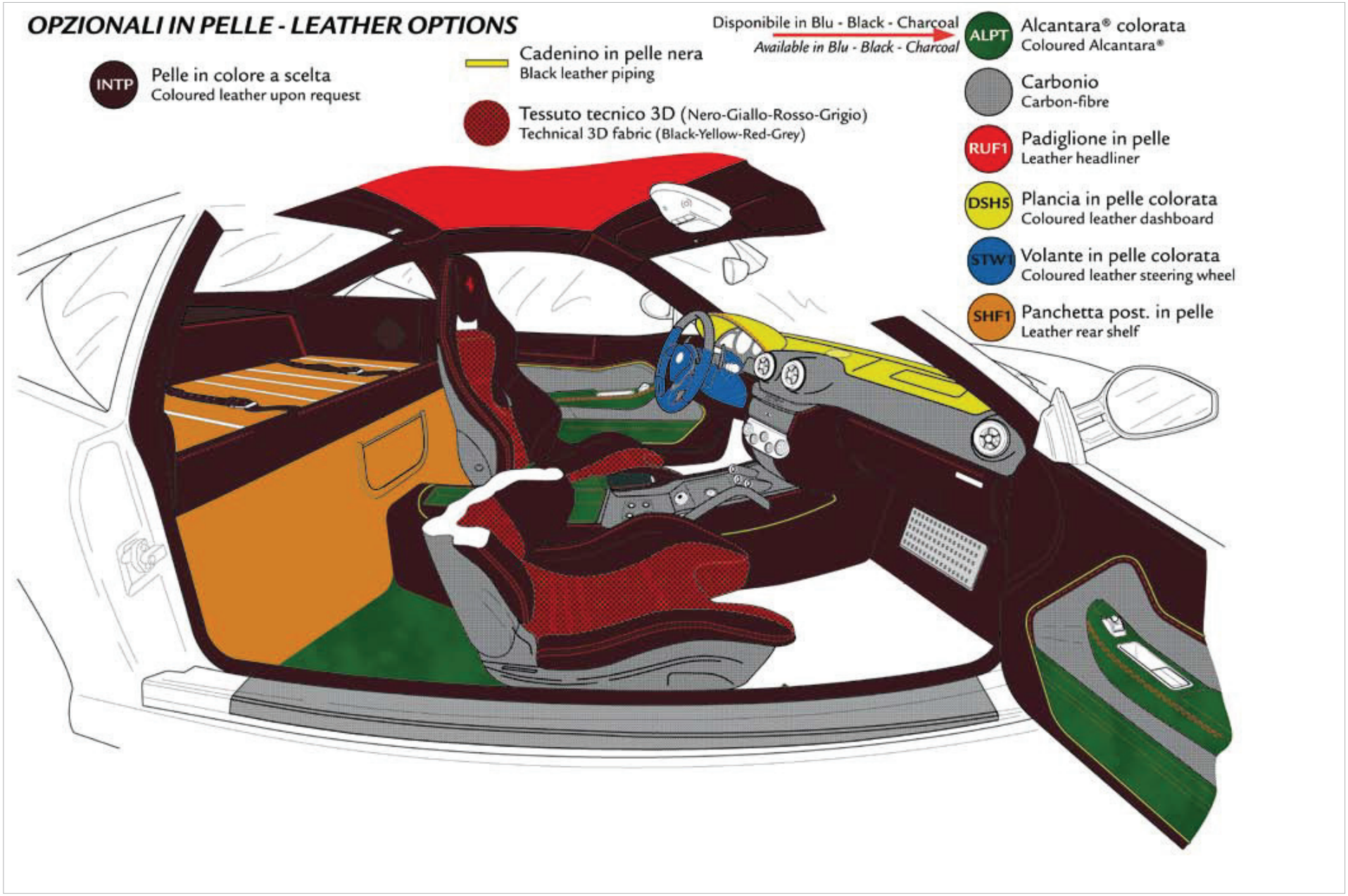

ALLESTIMENTO STANDARD - STANDARD CONFIGURATION
Cadenino in pelle nera
Black leather piping
Tessuto tecnico 3D (Nero-Giallo-Rosso-Grigio)
Technical 3D fabric (Black-Yellow-Red-Grey)
Alcantara® nera
Black Alcantara®
Pelle nera
Black leather
Carbonio
Carbon-fibre
Tessuto tecnico Formula 1
Formula 1 Technical Fabric
Verniciatura soft-touch nera
Black soft-touch painting
Alluminio mandorlato
Alluminium

ALL. ALCANTARA - ALCANTARA CONFIGURATION





ALLESTIMENTO PELLE - LEATHER CONFIGURATION



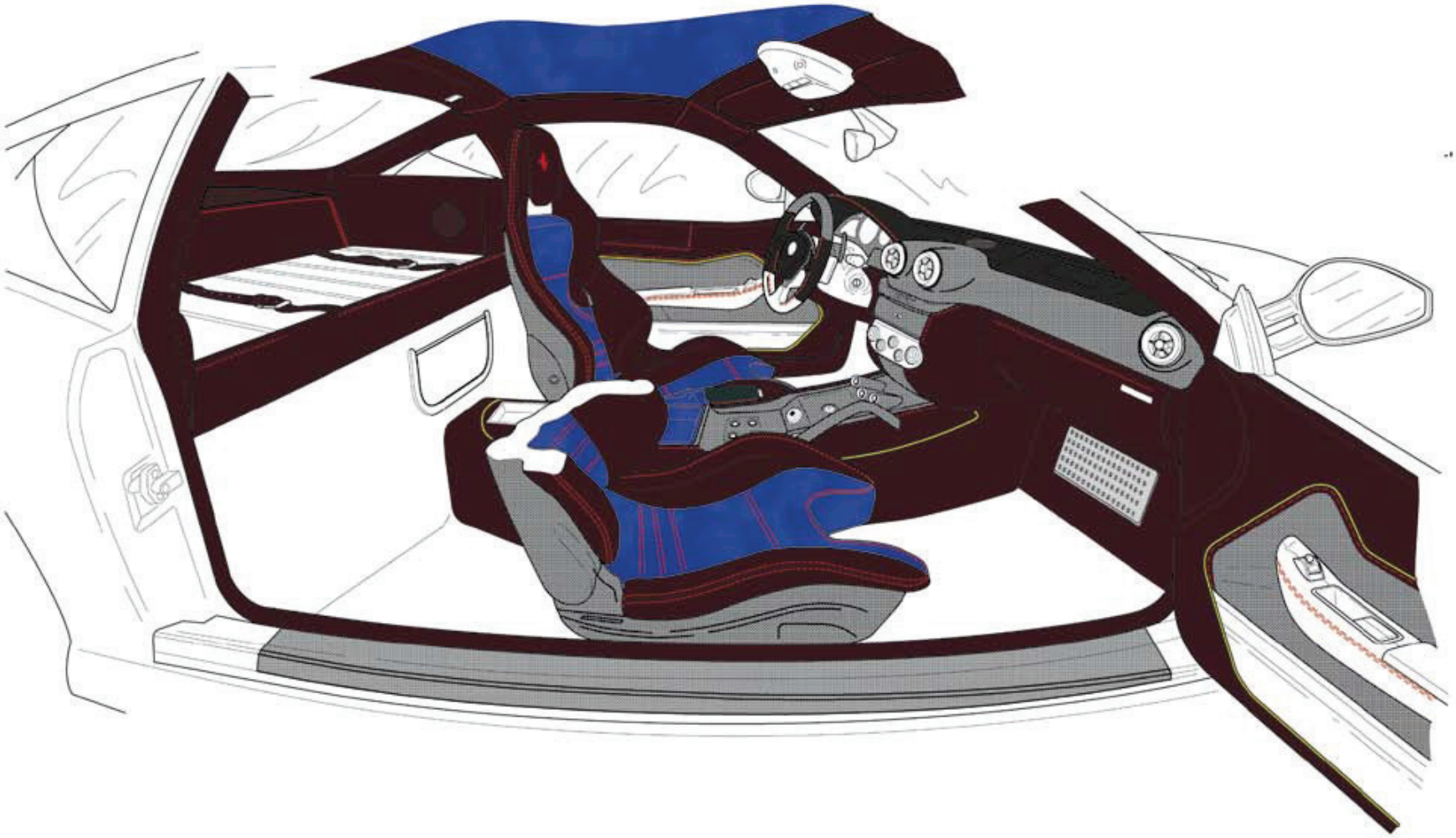
OPZIONALI IN PELLE - LEATHER OPTIONS

Allestimento elegante - Elegant trim

INTP Pelle in colore a scelta
Coloured leather upon request

In abbinamento ad Alcantara® interni abitacolol
Matching interior Alcantara® colour

ELEG Alcantara® colorata
Coloured Alcantara®



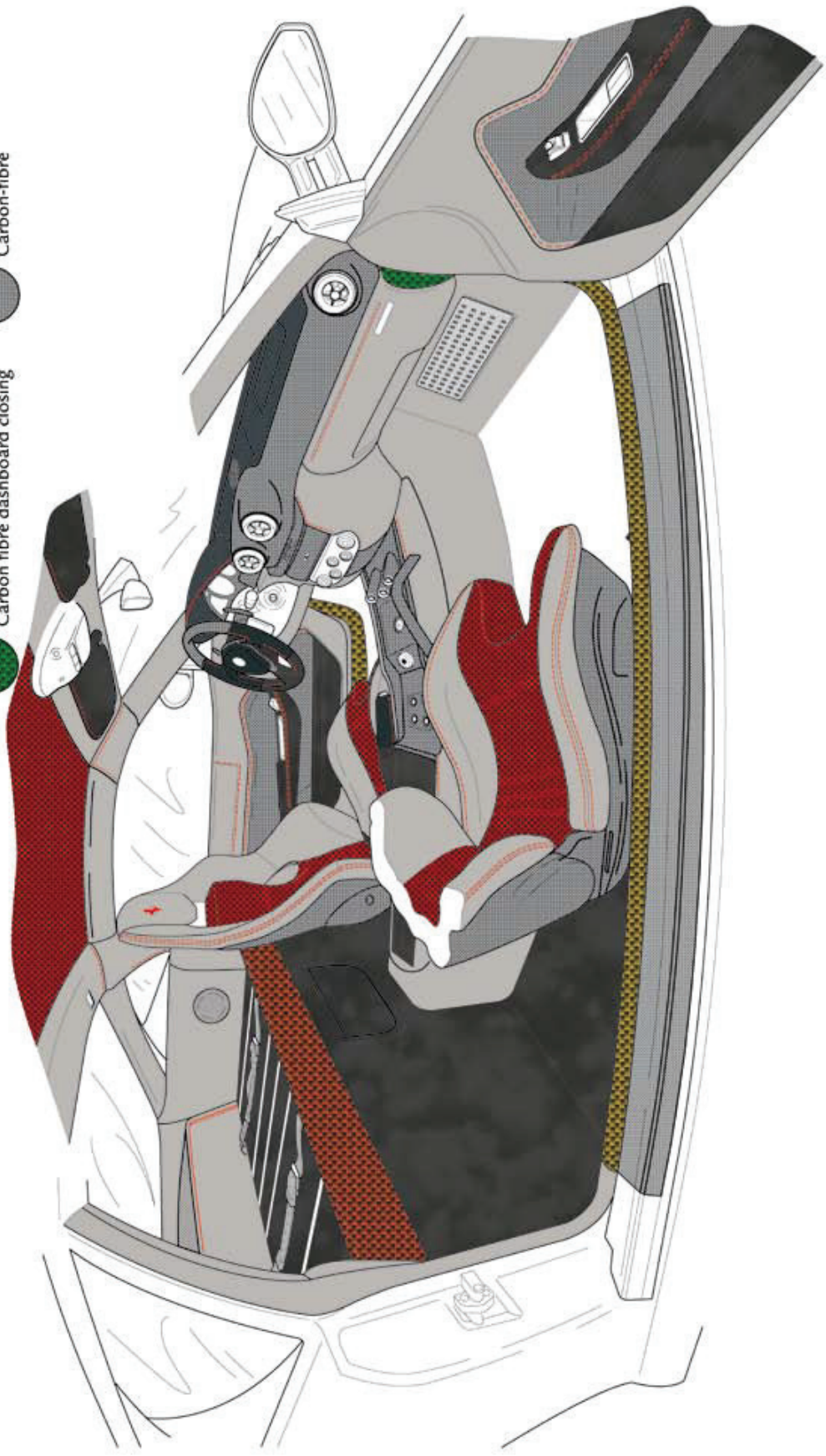
OPZIONALI IN CARBONIO - CARBON FIBRE OPTIONS

- CIRZ — Traversa posteriore in carbonio / Carbon fibre rear moulding
- BATC — Battitacco in carbonio / Carbon fibre door sill
- DSCC — Chiusure plancia in carbonio / Carbon fibre dashboard closing

Alcantara® nera / Black Alcantara®

Pelle nera / Black leather

Carbonio / Carbon-fibre



DIMENSIONI E PESI *DIMENSIONS AND WEIGHT*	
Lunghezza *Overall lenght*	4710 mm 185,4 in
Larghezza *Overall width*	1962 mm 77.2 in
Altezza *Height*	1326 mm 52,2 in
Passo *Wheelbase*	2750 mm 108.3 in
Carreggiata anteriore *Front track*	1701 mm 67,0 in
Carreggiata posteriore *Rear track*	1618 mm 63.7 in
Peso a secco* *Dry wheight**	1495 kg 3296 lb
Peso in ordine di marcia* *Kerb weight**	1605 kg 3538 lb
Distribuzione dei pesi *Weight distribution*	47% Ant - 53% Post 47% Front - 53% Rear
Capacità serbatoio *Fuel tank capacity*	105 l 27.7 US gal (23.1 UK/gal)
Capacità vano baule *Boot (trunk) capacity*	320 litri 11,3 cu ft

PNEUMATICI *TYRES*	
Anteriori *Front*	285/30 ZR20” 285/30 ZR20”
Posteriori *Rear*	315/35 ZR20” 315/35 ZR20”
Anteriori (winter) *Front (winter)*	255/35 R20” 255/35 R20”
Posteriori (winter, catenabili) *Rear (winter, can be used w/ chain)*	305/35 ZR20” 305/35 ZR20”

FRENI CARBO CERAMICI *CCM 2 BRAKES*	
Anteriori *Front*	398 x 38 mm 15.7 x 1.5 in
Posteriori *Rear*	360 x 32 mm 14.2 x 1.3 in

CONTROLLI ELETTRONICI *ELECTRONICS*	
CST con sistema F1-Trac CST with F1-Trac system	Controllo stabilità e trazione Control for stability and traction
TPTMS TPTMS	Sistema di Controllo Pressione e Temperatura Pneumatici Tyres Pressure and Temperature Monitoring System

MOTORE *ENGINE*	
Tipo *Type*	V12 - 65° 65° V12
Alesaggio e corsa *Bore and stroke*	92 x 75,2 mm 3.62 x 2.96 in
Cilindrata unitaria *Unit displacement*	499,9 cm^3 30.51 cu in
Cilindrata totale *Total displacement*	5999 cm^3 366.08 cu in
Rapporto di compressione *Compression ratio*	11.9:1 11.9:1
Potenza massima *Maximum power***	493 kW (670 CV) a 8250 giri/min 493 kW (670 CV) at 8250 giri/min
Coppia massima *Maximum torque*	620 Nm (63 kgm) a 6500 giri/min 620 Nm (457 lbft) at 6500 rpm

PRESTAZIONI *PERFORMANCE*	
Velocità massima Maximum speed	oltre 335 km/h over 208 mph
0-100 km/h 0-62 mph	3.35 s 3.35 s
0-200 km/h 0-124 mph	9.8 s 9.8 s

CAMBIO *GEARBOX*	
F1 a 6 marce + RM *F1; 6 gears + Reverse*	

SOSPENSIONI *SUSPENSIONS*
SCM 2 a Controllo di Smorzamento Magnetoreologico *SCM 2 Magnetoreological damping Control*

CONSUMO COMBUSTIBILE *FUEL CONSUMPTION*	
Combinato (ECE+EUDC)* *Combined (ECE+EUDC)**	17,5 l/100 km 17,5 l/100 km

EMISSIONI CO_2 *CO_2 EMISSIONS*	
Combinato (ECE+EUDC)* *Combined (ECE+EUDC)**	411 g/km 411 g/km

*Allestimento Europa con adeguata dotazione opzionali / European market version with proper option equipment
** Engine power is expressed in kW, in accordance with the International System of Units (SI) and in CV for reasons of homogeneity. Included 3.7 KW/5CV by dynamic overboost.