

## ALFA ROMEO SETS A NEW STANDARD WITH THE GT

Alfa has set a new standard for performance, automotive beauty and driving exhilaration with the launch of the Alfa Romeo GT today (1 July 2004) without losing its renowned value for money reputation.

Styled by Bertone, the legendary Italian styling house, the Alfa GT takes all the Alfa Romeo elements that have lead to the Alfa Romeo sports cars, the 147, the 156 and the 166 be lauded for their unique elegance, style and eye-catching beauty and added their own unique additions to produce a car that is, quite simply a new byword for beauty.

No less of an achievement is the interior and, like Alfa Romeo's existing range, it can be expected that this interior will, too, become a palette from which other car makers draw their inspiration. But few will match the clarity of view that Alfa Romeo provides to produce an interior that is both snug like a sports car and spacious like a sedan; stylish to the to ultimate level, but easy to use and ergonomic, in summation an interior that is always an occasion in which to sit, whether in traffic jam or on a favourite stretch of road.

Power is supplied by Alfa Romeo's legendary 3.2 litre V6 engine, developing the same 300 Nm of torque as the renowned Alfa Romeo 156 and 147 GTA road racers. But while it delivers similar shattering performance – the zero to 100 kmh sprint is covered in just 6.3 seconds – a mild retune of the engine means its presentation of this performance is in a new, slightly mellower mode that matches the spirit of the Alfa Romeo GT. Nevertheless there is the wondrously evocative raspy burble produced by the race track bred engine from the moment the key is turned, a sound that can only be described as added an operatic edge to every drive in the Alfa GT.

But practicality has not been sacrificed at the altar of emotion. This is a coupé that is also remarkably practical. There is comfort for four people, space and seat belts for five, matched by a spacious boot of 320 litres, which may be enlarged by folding down the split rear seats and a through loading device only adds to the load carrying options. But there are also excellent detail features, such as the lockers on either side of the boot, the 12 volt power point located on one side of the boot and the polished chrome – who says practicality can't also be beautiful – tie luggage down points.

The Alfa Romeo GT is spectacularly well equipped. Naturally there is the equipment you would expect in this market position, such as power windows, remote central locking with remote boot opening, full leather interior and a powerful sound system, trip computer, cruise control and heated front seats.

But each of these items has been honed to match Alfa Romeo's requirements. Hand crafted, fine Italian leather is used on the elegant shaped and styled seats that offer both comfort and the lateral grip required in a sports car; the powerful stereo system is fitted with a Bose power amplifier and speakers, as well as a Bosch stacker CD unit and the ability to play MP3; the central locking includes auto-lock to ensure security; the readout on the trip computer to be changed to suit individual requirements.

Performance is nothing without safety and security and here, once again the Alfa Romeo GT has all the features expected of a car in the exacting class. Active safety features include the full range of electronic safety features, such as electronic stability controls (VDC, ASR and MSR) tuned to provide safety but without dampening down the driving experience, as well as the latest generation of ABS anti-lock brakes. Naturally, a responsive chassis aids accident avoidance, as well. Passive safety features are led by six air bags, crumple zones and an occupant safety cell.

With such a unique combination of performance, style and sheer presence, it could be expected that a car of the Alfa Romeo GT's abilities would command top-dollar. But with a recommended retail price of \$79,990, the Alfa Romeo GT represents commendable value for money.

"Few cars can offer the complete emotional experience supplied by the Alfa Romeo GT, even fewer, if any, at the price that makes this involving experience possible with the Alfa Romeo GT," says Kevin Wall, General Manager for Alfa Romeo Australia. "It touches nearly all the senses, making every drive a real occasion, an event to be savoured. Yet, at \$79,990, it is available at what is, considering what the Alfa GT offers, a very reasonable price. For Alfa Romeo, the GT represents yet another example of the unique spirit that has made Alfa Romeo a legend in the automotive industry, a byword for a motoring excellence, a name that is as instantly recognisable as the cars that it produces."

## **BEAUTY, STYLE AND AGGRESSION: THE ALFA ROMEO GT**

The Alfa GT is a car that arouses strong emotions: a dashing, aggressive design with a stylish and sophisticated looks. Herein lies the soul of the Alfa GT, bringing together the essence of the Alfa Romeo brand and elements of the 147, 156 and 166 in a unique design by the Bertone style centre.

All the great European designers have, at one time or other, helped clad Alfa cars. The long history of cooperation has mirrored changes in the company and in popular taste. Nowadays, the craftsmen of bygone times have given way to true designers who work with the Alfa Romeo Style centre, often as outside consultants.

This is the philosophy behind the Bertone Style Centre's creative contribution to the Alfa GT. It is no mere chance that the new vehicle immediately calls to mind the Giulia Sprint GT, the model created by Nuccio Bertone in 1963: Alfa's new coupé shares the same sporty nature, smooth tapering lines and great Italian sense of style.

The Alfa GT offers original style and exhilarating performance. It also represents a brand new concept in sportiness, where comfort and elegance combine. The car aims to offer all the driving satisfaction of an extraordinarily high-performing coupé without the compromises typically dictated by this type of car. The roomy luggage compartment - 320 litres - is one of the most generous in its segment.

With a length of 4.48 metres, width of 1.76 metres a wheelbase is 2.59 metres and a height of 1.37 metres, the Alfa GT Coupé is aggressive and compact with a shape marked by distinctive traits that define its strong personality and render it immediately recognisable.

A new interpretation of the distinctive Alfa motif is evident at the front. The Alfa shield is slightly larger and constitutes an imposing presence out of which the entire car appears to grow. The result is very effective: it oozes force and aggression. This impression is reinforced by two side air intakes and light clusters that are objects of beauty in their own right.

The rear end also has a lot to say stylistically. The tail end of the Alfa GT is compact and slightly dipped and tapering with large blended bumpers. The rear window is drop-shaped while the light clusters are embedded in the body. The tail also offers the right amount of balance and elegance with its strongly raked rear window and quality wraparound tail-light design.

The equally distinctive profile gives the model the appearance of an agile, solid and protective car. This is due above all to a pronounced shelf on the side that makes the car look slender and dynamic. Taut lines that meet at the rear and the small area of glass (compared to the large extent of metal at the side) add elegance and also sturdiness.

Like the exterior shape, the interior of the Alfa GT is as sporty as Alfa Romeos get. The steering wheel, pedals and gearbox, for example, are designed for maximum vehicle control. The instruments are also functional and allow clear, simple and immediate understanding of the information. They also look good. Two large round analogue dials - the speedometer and rev counter - are located on either side, while two smaller gauges are located in the middle - fuel level and coolant temperature - with a central display beneath. All the dials have a grey background and black numbers. Red lighting, with adjustable brightness, makes the dials easier to read at night. The shade is easier for the eye pupils to focus on as they adjust from the dark road to the bright dashboard.

The Alfa GT on-board instrument array includes a multifunction display that allows access to several menus and submenus that speak the motorist's language and offer a host of functions. For example: clock, date, programmable warning buzzer and displays for the radio, phone, check control etc. The trip computer provides a set of information on previous or current trips: fuel consumption (instantaneous and average), average speed, remaining range, journey time and kilometres covered.

In the centre of the fascia are the radio and controls for the automatic dual zone climate control system produced with a sophisticated design. In detail, the radio, complete with CD/MP3 player offers an outstanding sound system designed and adjusted to the passenger compartment that consists of six speakers and delivers a power output of 4x40 Watts. The radio may also be activated by controls on the steering wheel.

## **THE LEGENDARY 3.2 LITRE V6 ENGINE**

The Alfa Romeo V6 engine, from its birth has developed a legendary status for everything from its performance, through the sound it makes to its under bonnet appearance with its polished chrome inlet manifold, aluminium head covers and red badging. It is a race-track power unit that provides every Alfa Romeo to which it is fitted with a heart of unmatched strength and passion.

Evolved into the 3.2 litre version for the GTA versions of the 156 and 147, it gathered even more acclaim at its launch. The engineers changed the crankshaft and pistons to increase the cylinder capacity to 3.2 litres and lengthened the stroke to 78 millimetres. This change speaks volumes about the type of performance required because the power could simply have been increased by adjusting the timing, fuel system and electronics.

The fact that cylinder capacity has been increased by lengthening the stroke means that the aim was not simply to obtain out-and-out performance coupled with high power and torque peaks but also an even, gradual power delivery from the lowest speeds. As befits a car capable of thrilling performance that is suited for driving on ordinary roads as well as on the track.

The increase in cylinder capacity is naturally accompanied by a whole set of changes. The intake and exhaust ports have been tuned by applying a new timing pattern, the control unit software has been rewritten and the cooling system has been upgraded with the addition of an engine oil radiator.

For the Alfa GT, the engine has once again evolved to match the smooth character of the GT.

The result? Power output is 176 kW at 6200 rpm with a maximum torque of no less than 300 Nm at 4800 rpm. These figures are all it takes to achieve exciting performance and are complemented by a torque curve that provides instant response at low speeds. The car can also travel in sixth gear at less than 2000 rpm and unleash speed without changing gear. Extremely satisfying behaviour, therefore, even during daily use.

## **DRIVING EXCITEMENT BUT WITHOUT STRESS**

The Alfa GT provides a welcoming, well-lit environment that offers much more comfort than would be expected from a sports coupé in terms of space available to the driver and passengers. The new model now also offers all the extra systems and devices made available by contemporary technological advances: bi-zone automatic climate control system, Cruise Control, multifunction display, radio with steering wheel controls and a sophisticated Hi-Fi system by Bose®, the US company that leads the world in this sector.

## **Automatic dual zone climate control system**

Interior climate is one of the main comfort factors during a trip and is also very important for interior safety because temperature, humidity and ventilation affect the driver's well-being and thus his or her level of alertness and, of course, the heating and ventilation system is also responsible for demisting the windscreen and side windows.

For this reason, the Alfa GT comes with a sophisticated climate control system that automatically controls temperature, air flow, air distribution, compressor activation and recirculation by means of an electronic control unit. It also acts as a dual zone climate control system, to ensure two different temperatures simultaneously: one in the right part of the passenger compartment and the other in the left.

The Alfa GT also implements an equivalent temperature climate control strategy. It records internal and external temperature by means of sensors and assesses the sensation of thermal well-being experienced by passengers, the energy exchange between human body and passenger compartment that is affected by humidity, temperature and treated air flow.

Another sensor located in a central position at the windscreen base records solar radiation on the car and the angle at which the rays strike the passenger compartment. This allows the system to prevent an excessive increase in temperature inside the car caused by the sun and thus to inform the climate control system in time.

All these parameters are monitored continuously and used to update the distribution, ventilation and mixing automatically. Air temperature at the outlets and fan speed are therefore adjusted to ensure passengers experience the desired temperature. The result is a constant climate, even with significant changes in external conditions.

The system may be adjusted to one of seven set combinations to allow air taken into the car to reach all areas of the passenger compartment.

The system also offers three possible temperature settings: 'LO' (maximum cooling), 'HI' (maximum heating) and 'MAX DEF' (fast defrost).

The possibility of altering interior temperature gradually, half a degree at a time, makes for outstanding climatic comfort. The system may be used to bring about a temperature change of 16°C, with a maximum temperature difference of 7 degrees between the left and right areas.

Manual adjustment is used for: setting the interior temperature to the right and left, manual air flow distribution changes, fan speed and fan deactivation, compressor deactivation (in practice, the system works in the same way as an automatic heater), recirculation control and the 'MAX DEF' function for fast defrosting.

Manual choices always over-ride automatic settings. They are also indicated by deactivation of the Full Auto. Each time the system is turned on, it returns to the conditions saved upon deactivation, except for the 'MAX DEF' function, which is zeroed. The entire system can also be turned off manually to deactivate the air conditioning system fully.

## **Cruise Control**

All Alfa GTs are fitted as standard with Cruise Control, a system that helps motorists to manage vehicle speed and improve travelling comfort. The device allows a cruising speed set by the driver to be maintained automatically by governing the engine throttle directly. The device is controlled by means of a lever on the column switch. The first is turned to ON to activate the system while the second must be moved to the plus or minus sign to achieve the required speed. When the control is released, the car continues to travel at the saved speed without the driver pressing the accelerator pedal.

The Cruise Control system can work within the entire range of rpm levels allowed by the engine, but only at speeds over 30 kmh. It is therefore advisable to turn it on only if road conditions allow the set value to be maintained in safety.

When the accelerator pedal is pressed during overtaking, for example, the Cruise Control system is temporarily disabled even though the system stays on. The car therefore accelerates as required, but the system automatically restores the car to the stored speed as soon as the pedal is released. For obvious safety reasons, the device is released automatically when the driver presses the brake or clutch pedal. In this case, the preset speed may be returned to by pressing the RECALL button at the end of the Cruise Control stalk. A warning light on the display indicates system operation or deactivation status.

## **Multifunctional display**

A revolutionary multifunctional display in the middle of the Alfa GT fascia performs the twofold function of providing the driver with information on the main trip parameters – a trip computer - and providing instant feedback on car faults and action required.

The device provides access to several menus with submenus that speak the motorist's language (the choice is between Italian, English, Spanish, Portuguese, French, German and Dutch) and offer the benefits of a host of functions and information. For example: date, outdoor temperature, engine oil temperature speed limit setting, and fault display.

The driver can also use the Trip computer to find out a set of data on previous trips or the current journey: fuel consumption (instantaneous and average), average speed, remaining range, journey time (since the trip started) and kilometres covered.

## **Radio with integral steering wheel controls**

The Alfa GT offers a radio with CD player and MP3 player. The sound system is designed and adjusted to suit the passenger compartment that comprises eight speakers and offers a power output of 4 x 40 Watts.

The radio is integral with the dashboard design and located in the middle of the fascia in a position that is convenient for both driver and passenger. It can store up to 30 stations. It offers RDS (Radio Data System), TA (Traffic Announcement) and PTY (programme choice option) for when these services become fully available in Australia from broadcasters, in addition to an automatic device that adjusts the volume to the car speed and also a large alphanumerical digital display. Each time the radio is turned on, the volume is the same as when the set was turned off. The set is also controls an external CD stacker with a capacity of 10 CDs. The radio with CD player is also equipped with a 7 band graphic equaliser. This device offers a choice of four equalisation settings: the default setting and also Jazz, Rock and Classic. The driver can choose special effects, adjust and save the sound parameters. Many of these features can be operated from the controls on the steering wheel.

## **Bose® sound system**

The Bose® Sound System is produced for Alfa Romeo by the US company Bose, a leader in the Hi-Fi sound sector, offers each passenger exceptional listening quality under all driving conditions.

The audio system is complemented by a sound system consisting of eight speakers (six plus two full-range speakers) and a subwoofer with a 5-channel analogue amplifier (200 Watts of power) that reproduces the lower frequencies and is built into the luggage compartment.

The Bose® Sound System arouses the same emotions as you feel when you listen to a live concert. The system offers realistic reproduction with crystal clear high notes and full, rich bass tones. It does not fall into the trap

of creating unnatural sounds that are initially appealing but are tiresome for the listener in the long run. The sound also wraps around all the occupants and gives them the sensation that it is travelling through a much larger environment, because the sound system and the passenger compartment have been designed together to ensure perfect harmony between the technical specifications of both.

To achieve this result, the Bose® engineers carefully chose all the parts of the stereo system and established the best possible speaker position in relation to the listeners with the aid of advanced design software.

An integrated signal processor automatically adjusts bass tones so that they are always perfect at any volume. The device is more sophisticated than ordinary volume controls on conventional devices and ensures a high-quality sound that is always natural.

An active equalisation circuit ensures an excellent automatic electronic balance of all output frequencies, great stability and clarity of tone throughout the audio range. All this means that you can enjoy impeccable music reproduction under all driving conditions without having to fiddle with the controls.

Sound clarity is also aided by active compressor circuits that ensure the system does not display any distortion, even when the volume is turned up high. The interaction between all these sophisticated components gives rise to the extraordinary sound that has made the Bose® brand famous throughout the world.

## **CUTTING EDGE TECHNOLOGY FOR THE GREATEST SAFETY**

The Alfa Romeo GT offers the most modern safety features and equipment to prevent accidents and protect the occupants when accidents happen. In the preventive safety field, the new model offers xenon headlights, its active safety complement includes VDC with Brake Assist for total control of car dynamic stability under all conditions. As far as passive safety is concerned, the Alfa GT offers up to six airbags: two front airbags, two front sidebags and two window bags.

To ensure the Alfa GT offers the greatest passive safety, the Fiat Auto Safety Centre engineers examined all possible types of accident (frontal impact, side impact, roll-over, shunting and fire), taking into account the various speeds at which impact may occur, the different types of obstacle and the need to protect occupants with very different physical characteristics. The result: the new model is one of the safest cars in its entire segment.

### **VDC with Brake Assist**

To ensure absolute mastery of the car under all conditions, however extreme, the entire Alfa GT is fitted as standard with VDC (Vehicle Dynamic Control) with an emergency brake assist device.

This is the Alfa Romeo version of ESP, or Electronic Stability Programmes. This innovative device cuts in under extreme conditions when car stability is at risk and also helps the driver control the car. As befits a true Alfa, the VDC is a sporting device that allows outstanding roadholding. It enables the driver to enjoy total mastery of the vehicle while conditions are normal, cutting in only as the situation becomes critical. The VDC is permanently engaged.

The MSR (Motor Speed Regulator) cuts in when the gear is shifted down abruptly in low grip conditions. This device cuts engine to prevent the wheel skidding as a result of wheel lock-up.

To achieve these results, the VDC continually monitors tyre grip in both longitudinal and lateral directions. If the car skids, it cuts in to restore directionality and ride stability. It uses sensors to detect rotation of the car body about its vertical axis (yaw speed), car lateral acceleration and the steering wheel angle set by the driver, which indicates the

chosen direction. It then goes on to compare these data with parameters generated by a computer and establishes – via a complex mathematical model – whether the car is cornering within its grip limits or if the front or rear is about to skid, either understeer or oversteer.

To restore the correct trajectory, it then generates a yawing movement in the opposite direction to the movement that gave rise to the instability by braking the appropriate wheel (interior or exterior) individually and reducing engine power (via the throttle). This is the key attribute of the device designed by Alfa Romeo engineers. It acts in a modulated fashion on the brakes to ensure the action is as smooth as possible (and the drive is not therefore disturbed). The engine power reduction is restrained to ensure outstanding performance and great driving satisfaction at all times.

As it carries out its complex task, the VDC stays in constant communication with the brake sensors and engine control unit but also with:

- A Body computer that constantly exchanges information with the ABS, engine management unit and automatic transmission unit.
- An electronic throttle, that communicates with the ABS in turn.
- A control panel, active warning lights.
- The steering wheel and steering column via the steering sensor.
- A gyroscopic sensor installed on the passenger compartment floor to record car yaw and lateral acceleration.

The VDC fitted to the Alfa GT also comes with an emergency brake assist device. The function is carried out electronically by the ABS control unit and is referred to as EBA (Emergency Brake Assistance). In emergency braking situations, most drivers recognise a situation of danger and press the brake pedal very quickly. But not, however, with sufficient force. This is because people, unless they are professional drivers, are used to applying a certain load to the brake pedal. Because people tend to switch to autopilot mode when they carry out repetitive actions, the same level of force tends to be applied in all circumstances.

On the Alfa GT, however, the EBA device cuts in at this point. Although the pressure on the pedal is unchanged, the car is decelerated by the same amount as it would be if it were braked with all the necessary force. And there is more. Panic brake assist devices can even help experienced drivers who brake quickly and apply the correct amount of force in emergencies. This is because the system reduces braking attenuation time in all cases, the period between the time when pressure begins to be applied to the pedal and the moment when the circuit reaches maximum pressure and is able to offer maximum performance.

## Front airbags, front sidebags and window bags

The Alfa GT offers no fewer than six airbags, all as standard. Firstly the **front airbags**: for the driver (with capacity of 42 litres) and passenger (90 litres). Their operation is controlled by an electronic control unit on the tunnel that evaluates impact severity by means of sensors that are calibrated by conducting crash tests in the laboratory. Less time than the blink of an eye elapses between a crash and the airbag opening. The gas used to fill the bags is inert, non-toxic argon. The airbags are also made out of nylon 6/6, a permeable material that allows the bag to deflate in a few tenths of a second after impact to minimise skin abrasions. Bag structure is innovative: it is folded in a special way and equipped with two cloth strips that yield gradually to allow the bag to unfold more gradually and not directly toward the occupant.

The system comes with a diagnostic circuit for checking components electronically. The components are tested by a processor that monitors their operation continuously. The airbags will not be activated by low speed accidents, for example, a slight shunt or a bump while parking, or by stresses that are not due to impact, such as driving fast over a pothole).



The passenger front airbag may be deactivated manually by operating a switch on the end of the fascia with the ignition key. This means a baby can be carried on a baby seat facing in the opposite direction to the car's motion, but the pretensioner remains active.

The Alfa GT is fitted with **two sidebags** to protect the pelvis and chest of front seat passengers when the car is struck from the side. They are located inside the front seat squabs. This solution ensures the best possible protection for passengers regardless of their stature, sitting position or seat setting. For geometrical reasons, it is also possible to use a 12 litre airbag: this volume is lower than an airbag housed in the door would require to offer the same protection. The sensors controlling activation of these airbags are located in the central pillars. If an accident occurs, they receive a side acceleration signal and send it to the electronic control unit that is also responsible for operating the front airbags and seat-belt pretensioners. All systems are managed in an integral manner in accordance with a strategy of total, progressive occupant safety.

The Alfa GT is also fitted with **window bags** that drop down along the windows to safeguard the passengers' heads in the case of side impact. Compared to other solutions, the window-bags adopted on the Alfa GT are more protective (because they always take up the correct position), faster to inflate and less invasive for passengers. They open from top to bottom and do not involve a risk of secondary damage to occupants' arms. They also effectively safeguard the heads of front and rear passengers because they extend along the entire width of the window and ensure protection even during rollover.

Two bags (one on the right and the other on the left) are located under the roof rails where they are folded into a closed compartment. At the appropriate moment, the covering bends open to allow the bags to expand and drop downward.

### **The toughest tests for total protection**

The Alfa GT has passed all the tests conducted to the toughest European, US and Japanese standards: frontal impact ECE R 94 against a deformable barrier offset in relation to the vehicle axis (at 56 km/h); side impact ECE R 95 against a deformable barrier at 50 km/h; rear impact to ECE 32/34 standards (shunting at 35-38 km/h) and the Japanese TRIAS 33 test (shunting at 50 km/h). The new car has also undergone the simulated tests required for the Euro NCAP programme: frontal impact at 64 km/h against a deformable barrier offset at 40%; side impact at 50 km/h against a deformable barrier, and side impact at 29 km/h against a pole. The Alfa GT also performed very respectably in the Insurer's crash test that measures the likelihood that the car will suffer damage as a result of low speed accidents. In many European markets (particularly in Germany and Great Britain), the insurance premium varies according to the class attributed to the car by insurance category associations. This judgement is based on average repair cost and statistical frequency of claims.

The Alfa GT therefore represents the state of the art in the field of passive safety systems. This has been achieved by equipping the new sports coupé with all the most sophisticated devices currently available. These include: side impact bars in the doors, collapsible steering column, six airbags (described in the previous paragraph), seat-belts with pretensioners and load limiters and, on the central rear seat, a third head-restraint and seat-belt with reel.

In the Alfa GT the front and rear seat structure is designed to prevent 'ant submarining': in other words, rigid transverse elements beneath the cushion prevent occupants from slipping under the seat-belt in the case of accident. The load-bearing properties of the padding foam are also differential to give the correct support to different body parts, offer maximum comfort and assure good lateral and longitudinal containment even over twisty routes.

The Alfa GT is also fitted as standard with head-restraints at the front that can be tilted and adjusted for height and at the rear, including a third rear head-restraint combined with a belt. The new sports coupé is also

equipped with an inertia reel seat-belt, pretensioner and load limiter. In case of impact, an electronically-controlled pyrotechnic pretensioner rewinds the belt within a few milliseconds so that it fits snugly to the body. The front reels contain load limiters that yield in a controlled manner to modulate the force exercised on the shoulders of the belt wearer.

All these devices, including the airbags, are governed by a sophisticated “nervous system” that is controlled by an electronic control unit located in the front tunnel. This control unit receives signals from the various sensors distributed throughout the car (and others inside) and decides how many devices should be activated and which ones. This is why the system is said to be ‘smart’. It does not activate when the occupant is in no danger of striking the car walls regardless of whether an impact has taken place or not. It detects stresses that are not caused by an impact. It will even work if the electrical system stops working.

All this is made possible by particularly sophisticated operating strategies and detection terminals. Such as two-way accelerometers that provide a set of information that complements signals from satellite sensors on the central panels (responsible for activating the sidebags and window-bags).

The Alfa GT steering column structure is also telescopic to safeguard the driver against the steering wheel intruding into the passenger compartment (in case of frontal impact, particularly at high speed). The steering column is divided into two segments, the lower part consists of a collapsible sleeve that holds the steering wheel position steady at the moment of impact. The upper segment slides (for axial adjustment) and swings (for vertical adjustment).

The outstanding torsional rigidity of the body that is an essential requirement for safety and travelling comfort. The result achieved by the Alfa GT is more than 100,000 daNm/rad, one of the best in its segment. Many aspects contributed to this outcome and also allowed us to turn the passenger compartment of the new model into a veritable survival cell. Examples include rails that crumple in a controlled fashion to absorb impact energy, and doors with side impact bars and reinforcements on the central pillar and belt for greater protection against side impact. Plus front struts linked to the side panel by connecting elements that also help absorb frontal energy. Reinforced front hinges also offer high levels of resistance against crushing. Other strengthened parts include the connection between suspension and dashboard and the windscreen pillars that help make the passenger compartment more rigid side to side and ensure it is joined to the side panels at waist height.

Last but not least, the Alfa GT is also fitted with a Fire Prevention System. This is the most up-to-date and sophisticated solution for protecting a car against possible fire risks. The main system components include an inertia switch that immediately locks the electric pump following crashes of a certain entity. This brings about a pressure drop in the fuel ducts to prevent fuel emerging. On petrol versions, a cut-off valve is also fitted after the tank. This prevents fuel loss in the case of impact, roll-over or damage to the fuel lines. The fuel tank is made out of plastic material resistant to mechanical stress and fire. It is located in a protected position in front of the rear axle.

All electrical equipment power leads are fitted with maxifuses: devices that cut off the power supply when the temperature becomes too high. Connection leads to the starter motor and alternator are covered with an abrasion-proof coating and located in protected areas. Special care has also been taken over the arrangement of components and units (engine bay, electrical system, fuel system and brakes) that could become damaged by a fault or accident. The interior trim is fire resistant (with a flame propagation rate less than 100 mm/min) and meets tough US flame retardant standards.

## **Xenon headlights**

Preventive safety requires outstanding visibility, even at night and in tunnels. The Alfa GT is equipped with xenon headlights that offer an improved light emission quality and excellent performance in all weathers. In a

gas discharge bulb, the usual internal filament is replaced by two electrodes spaced a few millimetres apart. These generate a voltaic discharge in an environment saturated with low-pressure xenon gas.

The benefits over normal halogen headlights are easy to enumerate: light intensity doubles (from 1500 to 3000 lumens); efficiency increases from 25 to 85 lumen per Watt and hours of duration also increase (from 1500 to 3000). Xenon headlights also consume less energy and distribute the light beam more effectively.

Because they emit a shade that is closer to white light, they also ensure improved visibility even though the level of illumination remains the same. Due to the improved performance offered by the system (brighter, more far-reaching light), xenon headlights are combined with an automatic ride height corrector to prevent the headlights dazzling oncoming vehicles and keep the lit area constant for improved driving comfort.

The device cuts in automatically to compensate for static car changes due to changing loads and also dynamic changes caused by acceleration and braking. This result is guaranteed by sensors on the front and rear suspension that continually read body movements to detect acceleration or braking movements. This allows yawing to be predicted so that ride control can cut in.

## **RACETRACK HANDLING**

The Alfa GT borrows the Alfa 156's suspension layout and adds settings specific to the new model: high double-wishbone at the front, McPherson at the back with transverse rods of different lengths.

The choice of a double wishbone layout for the front suspension meets a specific aim: to achieve maximum lateral grip, a highly effective and precise steering response, excellent traction - and then wed all these specifications with an ability to absorb and dampen road surface roughness typical of the most comfortable cars in the segment. The double wishbone layout allows high longitudinal flexibility to be achieved on the wheel side without impairing roadholding on corners and steering dynamics.

The car's on-road behaviour is aided by a rear suspension able to give the model the greatest stability during high speed manoeuvres and all the agility required of a true sports car over tight mixed routes. Hence the choice of a McPherson suspension featuring asymmetrical arms and refined elastokinetic properties. In the Alfa GT, the rear suspension is connected to the chassis by a cross member made up of vacuum cast aluminium. The benefits of the MacPherson strut layout include low weight, great comfort (assured by extensive wheel travels and longitudinal flexibility) and numerous ride control options.

The front and rear suspension layout also allows the various joints, including the steering arm joints, to yield in a calibrated manner without this affecting driving precision. The set of features adopted allowed us to achieve the very highest level results in terms of insulating out all noise and absorbing the minor roughness that usually gives rise to annoying knocking sounds reverberating from the body.

### **Front**

The high double wishbone front suspension is the most advanced layout, geometrically speaking, because it reconciles a wide range of wheel travel with optimum control of tyre working conditions. This is the outcome of a combined study performed by the Fiat Research Centre and Alfa Romeo Design and Testing.

From a structural viewpoint, the double wishbone configuration consists of a lower cast iron arm, a steel strut and an upper arm in light alloy. The coaxial spring-damper unit is connected to the body via a flexible mount and to the lower arm via a fork in light alloy. For reasons of space and structural stiffness, the upper arm is jointed to an aluminium shell anchored to the body, which acts as a support to the upper spring-shock absorber attachment.

Suspension geometry is designed to ensure that wheel camber is taken up during rolling and steering movements, maintaining a constant offset – the distance between the centre of the tyre contact area on the ground and the point at which the steering axis intersects with the ground - regardless of load conditions.

The specific position of the upper wishbone with its axis of rotation tilting forward allows the king pin angle to be controlled under all driving conditions, even the most critical. As a result, the front wheels maintain optimum grip even when steered strongly and the effort required at the steering wheel is more gradual.

All this brings major benefits in terms of handling and on-road behaviour.

- optimised tyre grip;
- maximum roadholding on bends, whatever the load conditions;
- improved traction even under the most difficult conditions;
- precise, sensitive steering even when taking narrow, twisting bends;
- gradual effort on the steering wheel, which increases uniformly up to the grip limit;
- high anti-dive effect (i.e. the front end is prevented from dipping while braking) and anti-lift effect (the front end does not lift during acceleration);
- cancelling of reactions at the wheel when one of the two wheels loses grip;
- natural return of the steering wheel when the car emerges from the bend, with immediate realignment.

## Rear

The rear suspension features a MacPherson configuration with particularly advanced geometry and constructional details. The basic structure includes a vertical telescopic element with a coaxial spring, two long transverse rods and a longitudinal strut. The telescopic strut incorporates a pressurised double-acting damper and the coil spring is greatly offset to reduce friction. The end travel buffer cuts in at the final stage of suspension travel and is made out of a special closed cell polyurethane material (known as cellasto) that ensures very gradual elastic action that remains absolutely constant in time. Both transverse arms are pressed out of high strength sheet steel and are of different lengths for a small induced elastokinetic steering effect.

Toe-in is adjusted by means of a cam system on the rear arm. This replaces the conventional screw system, offering benefits in terms of weight and ease of servicing. Both transverse arms and the antiroll bar mounts are secured to a light alloy structure made by vacuum casting. This feature allows a weight reduction of about 1.8 kg compared to a conventional crossmember in steel.

Special attention was devoted to the system for connecting the suspension to the structure to ensure the greatest geometrical precision and minimal transmission of noise and vibration. All the body attachments are very solid and come with special features such as a shell for the front shock absorber unit. On the rear strut, the shock absorber fastening is separate from the spring support.

To absorb minor roughness more effectively, friction has also been reduced through the use of bushes with dynamic flow slide action on the front upper triangle and rear longitudinal strut attachments and Teflon seals for the shock absorber rods.

## THE 'SPORTS COUPÉ' ALFA ROMEO STYLE

Alfa Romeo has written many of the most important chapters in the history of motoring. The leading players in this story are the cars, the designers, the races and the engines that were the stars of technological progress and motorsport events in the Twentieth Century. This is the common strand that links all Alfa models, a venerable gene pool of engineering features and motifs that are critically reappraised and reinterpreted whenever a new car is created. Now, as then, the Alfa Romeo designers and engineers are working to design

and build good looking cars that are full of character, to achieve the elusive balance between reason and sentiment, between engineering culture and design creativity. The finest expression of the inimitable personality that makes a car bearing the Alfa Romeo shield stand out from all others on the roads. And the Alfa GT is no exception.

The new sports coupé is a quintessential example of Alfa's creative vitality and our exclusive understanding of cars. It is no mere means of transport but a car able to give its driver true sensations and break through the confines of necessity to the field of pure emotion: aesthetic taste, a passion for sophisticated engineering, the sheer pleasure of sitting behind the wheel and an expression of one's own personality.

The Alfa GT also succeeds in packing the results of Alfa's superlative engineering heritage into a shape inspired by a sense of style and flair that could only be Italian. The stylists were also able to call on a great Alfa Romeo tradition that has brought us models that, particularly within the GT category, remain benchmarks of their type: from the 1900 SS to the Giulietta Sprint, from the Alfetta to the Giulia Sprint GT.

For the aficionados, there follows a short summary of these historical cars. Each of these cars has lent a styling detail to the new Alfa GT but all have given it its character of stylish sportiness.

Firstly, the **Giulia Sprint GT**. Designed in 1963 by Nuccio Bertone and introduced firstly at Arese and then at the Frankfurt Motor Show, this extraordinary coupé is a stylistic development of the Giulietta Sprint. The car is more compact due to its slightly shorter wheelbase and features a penetrating shape hardly interrupted by a bumper outline, with light clusters embedded in the grille and tail end. The Giulia Sprint GT was equipped with a 103 bhp 1600 engine and could carry up to four people. It remained in production until 1966 and sold more than 22,600. The car's roomy passenger compartment, generous luggage compartment and top-quality interior made it a top-class saloon, but with an unsuspected sporty temperament. So much so that the UK magazine *Car and Driver* wrote: 'Driving this car is sheer enjoyment'. It was no mere chance the famous GTA logo was seen for the first time on a subsequent version of this model. Now we have reached 18 February 1965, the year when Autodelta presented the Giulia Sprint GTA coupé, where A stands for 'alleggerita' or lightened. The outer body was the same as that of the GT, but the interior trim was made out of Peraluman 25, a light alloy of aluminium, manganese, copper and zinc. The new car differed from its sister externally in the addition of front air intakes, handles and the triangular Autodelta badge.

The Alfa GT is truly the heir to this car of the early Sixties that met with such great commercial and sporting success. The same could be said of another two versions of the model: the Giulia saloon TI and the Giulia Super 1600. An advertising slogan of the day said that the TI was the car 'designed by the wind'. The shape was revolutionary: low front enclosed by four headlights, plunging bonnet, a windscreen as small as that of a fighter aircraft and, above all, a cut-off end. The engine was a 1570 cc unit capable of unleashing 92 bhp. Then came the Giulia Super 1600 of 1965, featuring padded, wraparound seats and a fascia with a wooden dashboard. The car was also fitted with a chrome strip beneath the doors and stainless steel bumpers. All these trappings disguised considerable power and torque: 98 bhp and 13.3 Nm.

Like the Giulia Sprint GT before it, the new Alfa Romeo model harks back to another prestigious car: the **Giulietta Sprint** designed by Nuccio Bertone in 1954, the car that many consider to be the forerunner of present-day sporty Gran Turismo cars. A top speed of 165 km/h made it the fastest car in its category. One year later, at the 37<sup>th</sup> Turin Motor Show, came the turn of the saloon: 1290 cc cylinder capacity, 53 bhp and 140 km/h top speed (rising to 62 bhp and 145 km/h in 1962). Nothing could beat it in its market category at the time and motorists knew it. For about ten years, the Giulietta – in the form of the Sprint, Saloon and Spider – continued to exert the same appeal and increased Alfa Romeo sales from tens of thousands of units to hundreds of thousands. The hundred thousandth Giulietta rolled off the Portello production line in February 1961 in the presence of its godmother, actress Giulietta Masina. Although its cylinder capacity and dimensions were small, the model deserves a place in the history of Alfa Romeo sports saloons for the way it

was able to interpret the contemporary motoring *zeitgeist*: the uncluttered, appealing lines of a coupé, state-of-the-art mechanical units, power and roadholding.

The third reference point for the new Alfa GT sports coupé was the **Alfetta**, with which it shares its original styling, whereby a compact external shape conceals optimum passenger room and a luggage compartment measuring more than half a cubic metre. The Alfetta saloon went on sale in 1972 and immediately became an icon of the decade. It owed its success to its excellent design, which combined an appealingly mettlesome style with a lively engine, sophisticated mechanical units and great production quality. The engine was a tried and tested 1.8 twin shaft four cylinder unit of 122 bhp capable of carrying this car, which weighed just over one thousand kg and measured 4.28 metres long, to 180 km/h.

In 1975, the model range was extended to include a version with a 109 bhp 1.6 engine (identifiable from the outside by its front end with just two headlights) while the 1.8 underwent a couple of changes. The Alfetta 2.0 that appeared two years later was something else entirely: the redesigned front end was ten centimetres longer; the headlights had become rectangular and other changes had been made to the grille, bumpers, tail-lights and – naturally – the interior. The facia was more linear (it was also walnut trimmed on the 2000 L from 1978) and the upholstery and door panels were in fine cloth. The steering wheel, seat profile and instruments and controls were also different. The bigger capacity made the car easier to handle and ensured the Alfetta was one of the best balanced cars in its category. After 1979, it also became the first turbodiesel saloon to feature a cylinder head divided into four parts, one per cylinder.

We will close this brief review of cars that inspired the new model with the **1900**, in particular the two Sprint and Super Sprint coupé versions that reached a top speed of 190 km/h. Apart from anything else, when Alfa Romeo launched the 1900 in 1950, it invented the ‘sports saloon’ and the model became the first Alfa with a load-bearing body. The result was, according to a apt slogan of the day, ‘the family car that wins races’. Above all, it introduced the idea of a new motoring concept: a high-performing saloon for everyday use. In some ways this four-doored saloon heralded the styling of the Giulietta. It was very roomy inside and could accommodate five people, plus a child on the front seat because the gear-lever was on the steering wheel. This was a family car, yet it came with an effervescent 1884 cc four cylinder in-line engine that offered the driver 90 bhp. This model took Alfa Romeo to success in sporting competitions: the Tour de France, the Targa Florio, the Stella Alpina and the Coupe des Alpes.

Altogether, the Alfa GT offers a deliciously nostalgic taste of these four famous models, yet packaged in an up-to-the-minute shape. Attention to detail is also its most telling attribute. Going back to the past does not necessarily mean stealing the shape of an earlier car. It means reclaiming the motifs that belong to Alfa Romeo by traditional right and reinterpreting them in the light of opportunities offered by present-day technology and contemporary customer taste.

## **THE CONTRIBUTION OF FIAT GROUP COMPANIES**

A sports coupé of decided personality and flair, yet also a cutting-edge car in terms of equipment, power units and mechanicals. This was the brief given to the Alfa Romeo engineers and technicians. To achieve its goal, Fiat deployed its best resources and ensured that maximum quality and reliability standards were applied throughout the product development and construction process. It also developed a profitable co-operative relationship with its outside suppliers and some Group Companies including Magneti Marelli, Teksid, Comau, Elasis and the Fiat Research Centre. Out of this cooperative venture came the many innovative solutions that make the Alfa GT the new benchmark in its category.

## **Magneti Marelli**

Magneti Marelli made available the cream of its new products for the new sports coupé. More specifically, the Alfa GT is fitted with the latest version of the Selespeed power assisted steering system that is the pride of Magneti Marelli technology. The system's first application on a standard production car was on the 156 model from which the Alfa GT is derived.

The front light clusters are also a product of Magneti Marelli technology. The Automotive Lighting engineers designed the extensive headlights that help make the car's penetrating, aggressive front end immediately recognisable and are available in a dual halogen and gas discharge bulb version. Comfort and safety are also assured by a Magneti Marelli suspension that includes a front system (right and left side and front crossmember assembly) and a rear system (axle and wheel unit components).

## **Teksid**

Through its subsidiary Meridian Technologies Inc., Teksid produces an underfacia beam in magnesium at its plant in Verres (Aosta). The use of this specific structural component allows a significant reduction in product weight: 60% less than a conventional steel beam. It also absorbs vibrations more effectively for greater comfort.

## **Comau**

The production plants Comau used to produce the Alfa 147 and 156 bodies were so flexible that the Pomigliano assembly lines could be quickly reconfigured for the GT model. It was therefore possible to assure the same quality standards already achieved on tried and tested Alfa Romeo products from the outset.

## **Elasis**

A shielded anechoic chamber measuring 23 m x 11 m x 9 m was set up at the EMC (electromagnetic compatibility) laboratory at the Pomigliano d'Arco centre that is unique in Italy and at the forefront of European technology. This was used to perform a set of extremely tough tests that involved subjecting the Alfa GT car to electromagnetic stresses 25 times as intense as the maximum EM pollution levels permitted by Italian legislation.

Static and dynamic characterisation rigs were used to adjust and optimise the main systems that affect interior noise (body, facia and trim elements) (acoustic comfort). In particular, subjective and objective measurements were performed on a dynamic characterisation rig (Four Poster rig) within a semianechoic environment where the car tyres were subject to vertical excitation using plates. Acoustic performance was also checked by putting the Alfa Romeo GT through ageing cycles on a road simulator located in a climatic cell (cobble cycle).

PowerTrain integration is managed by Hardware In The Loop simulation environments where PowerTrain elements are simulated and the necessary checks are performed on the electronic control units and software inside.

## **Fiat Research Centre**

Innovative procedures are required to build cars that offer extraordinary no-holds-barred performance - or any successful car for that matter. We allow our sporty Alfa customers to guide the design of their dream car, hand in hand with the designer and tester.

The outcome is a brand new car concept that offers considerably more dynamic performance, driving satisfaction and comfort than its competitors under all service conditions and for all drivers - along with the greatest safety, quality and reliability.

The Fiat Research Centre customised its own innovative design procedures to the distinctive traits of the Alfa Romeo brand and conveyed them to the team that designed and produced the new sports coupé. Some of these are described below.

## Vehicle

- First and foremost, **the car's extreme dynamic performance qualities (super-handling)**. These allow outstanding performance in terms of car handling and stability, features peculiar to Alfa cars and fundamental to the Driving Satisfaction they offer. These traits, also achieved through the application of the most recent objective on-road simulation and testing methods, allowed the suspension and controls (steering, brakes) to be carefully designed for a satisfying, predictable drive under all speed, manoeuvre and grip conditions.
- The Alfa style cockpit and interior appointments are the result of rigorous interpretation and customisation of the **physical ergonomic** criteria that underpin the design of the main controls (steering wheel, pedals, gearbox), driving position, car access and proper use of space, including optimisation of seats to ensure postural, hydrothermal, vibrational and dynamic comfort.
- To underscore Alfa's distinctive nature and custom features, **cognitive ergonomic** devices were used to guide the design of communication interfaces (secondary controls, control panel, display) so that Alfa customers could be put behind the wheel of the new car from the design stage through the use of **Virtual reality** laboratories. We are all aware of the importance of aerodynamics to sports performance: **computed dynamic flow** methods allowed us to optimise the vehicle's exterior aerodynamics for improved performance and less aerodynamic noise while also allowing interior comfort and wellbeing to be optimised in terms of climate and air quality by improving air flow inside the passenger compartment and helping to develop the specifications of single and dual-zone air distribution systems. Last but not least, noise levels: not all noises are unpleasant: music is not, for example, and the sound of an Alfa Romeo engine certainly is not. **NVH** (Noise, Vibration, Harshness) reduction methods aim in this case to minimise interference (to alleviate stress and help driving alertness) while also enhancing the characteristics that allow you to communicate with and manage the power of a true GT.

## Engine

The basic design layout and their subsequent distinctive high-performance customisation are determined by innovative technologies and computing procedures that allowed the development of:

- engine control strategies for simultaneous optimisation of performance, emissions and fuel consumption;
- thermal dynamic flow simulation of the combustion process in petrol and Diesel engines;
- structural analysis of critical power unit components with the aim of improving reliability and acoustic/vibrational comfort.



## Alfa Romeo GT: Technical Specification

### ENGINE

No. of cylinders, layout	6 in 60° V
Bore x stroke (mm)	93 x 78
Capacity (cc)	3179
Compression ratio	10 : 1
Max. power output EC: kW (bhp) at rpm	176 (240) 6200
Peak torque EC: Nm (kgm) at rpm	300 (30.6) 4800
Timing (control)	4 OHC, (toothed belt) with hydraulic tappets.
Fuel feed	Bosch Motronic ME7.3.1 phased sequential electronic MPI with selective knock control
Ignition	static, electronic digital combined with injection, knock sensor and 6 HT coils fitted in the head, 1 spark plug per cylinder
Emissions control	Euro 4
CO <sub>2</sub> emissions (g/km)	295

### ELECTRICAL EQUIPMENT (12V)

Battery: capacity (Ah)	60
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### TRANSMISSION

#### Transmission

Drive	front
Gearbox:	
1 <sup>st</sup>	3.500 : 1
2 <sup>nd</sup>	2.235 : 1
3 <sup>rd</sup>	1.520 : 1
4 <sup>th</sup>	1.161 : 1
5 <sup>th</sup>	0.971 : 1
6 <sup>th</sup>	0.818 : 1
Reverse	3.545 : 1
Final drive ratio	3.733 : 1

### WHEELS/STEERING

Tyres	225/45 ZR17
Wheels	17 inch alloy
Steering box	rack and pinion with power steering
Turning circle between kerbs (m)	12.1

### SUSPENSION/BRAKES

Front	independent, dual wishbones with double trailing arm and anti-roll bar mounted on ball joints
Rear	independent, MacPherson struts with transverse levers of different lengths anchored to an aluminium cross beam, reaction arms, offset coil springs, and anti-roll bar mounted on ball joints and linked to the shock absorber
Front: dia. (mm)	D 330 (ventilated)
Rear: dia. (mm)	D 276

### DIMENSIONS/ WEIGHTS

No. of seats / No. of doors	5 / 2
Length / Width (mm)	4489 / 1763
Height, unladen (mm)	1355
Wheelbase (mm)	2596
Front/rear track unladen (mm)	1524 / 1510
Boot capacity VDA (litres)	320
Fuel tank (litres)	63
DIN kerb weight (kg)	1410
Max. towable weight (kg) with braked trailer	1400

## PERFORMANCE - FUEL CONSUMPTION

Speed with engine at 1000 rpm in 5 <sup>th</sup> (km/h)	32.2
Top speed (km/h)	243
Acceleration (s)	6.7
(1 adult + 30 kg):	
- 0 to 100 km/h	
- 0 to 1000 m	26
<b>Fuel consumption</b> as per EC directive 1999/100 (l/100 km):	
urban cycle	18.6
extra-urban cycle	8.7
combined cycle	12.4

## Alfa Romeo GT: Colours

● available    ○ recommended    ≡ not available

	Fine-grained leather	Fine-grained leather	Fine-grained leather	Fine-grained leather
Leather colour	beige	red	grey	black
<b>Non-metallic colours</b>				
Alfa Red	○	≡	●	○
Luxor Black	○	○	●	●
<b>Metallic colours</b>				
Brunello Red	○	≡	●	○
Sail Blue	○	●	○	●
Metallic Blue	○	●	○	○
Sterling Grey	●	○	≡	○
Seagull Blue	●	●	≡	○
Metallic Black	○	○	●	●
Antares Grey	○	○	≡	○
Kafra Grey	○	○	○	○
Light of Amalfi Grey	●	≡	≡	○
Nuvola Blue	●	●	≡	●

## Alfa Romeo GT: Technical Specification

✓ = standard    0 = optional    -- = not available

VERSION	Alfa GT 3.2 V6
ABS with EBD	✓
Alloy wheels, 17inch	✓
Armrest, front with storage box	✓
Armrest, rear	✓
Audio System with CD and MP3 player, eight speakers	✓
Bose® hi-fi system with subwoofer	✓
CD-changer in luggage compartment	✓
Central locking/release with remote control (doors and boot)	✓
Climate Control AirCon with bi-zone	✓
Cruise control	✓
Driver and passenger airbag	✓
Follow-me-home device	✓
Front electric windows with automatic device and anti-obstruction system	✓
Front sidebags	✓

Headlight wash	✓
Headrests, rear, three	✓
Heated electric door mirrors	✓
Iridescent paint	0
Leather steering wheel	✓
Metallic paint	0
Passenger seat height adjuster	✓
Radio electric controls on steering wheel	✓
Rain Sensor	✓
Rear parking sensor	✓
Seats, Front heated	✓
Seats, Leather	✓
Seats, rear, three lap, sash	✓
Ski tunnel	✓
Split folding rear seat (60/40)	✓
Trip computer	✓
Tyre inflation kit	✓
Tyres, 225/45	✓
VDC	✓
Window-bags	✓
Xenon headlights	✓