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2024 Alfa Romeo Tonale Engineering: Best-in-class Driving Dynamics

- Optimal weight distribution for unparalleled corner handling
- Technology in the name of safety comes standard, with a host of driver assistance systems:
 - Adaptive cruise control
 - Traffic Sign Recognition (TSR)
 - Intelligent Speed Assist (ISA)
 - Blind-spot Monitoring and Rear Cross-Path detection
 - Forward Collision Warning and Automatic Emergency Braking with pedestrian detection
 - Driver Attention Assist and rear seat reminder
 - Lane Departure Warning with Lane Keep Assist
- Available level 2 autonomy with Traffic Jam Assist (TJA)
- The most direct steering in the segment (13.6); available aluminum shift paddles
- The only car in its class to adopt the Integrated Brake System (IBS), a brake-by-wire system that guarantees instantaneous response and manages regenerative braking
- Independent MacPherson suspension with Frequency Selective Damping (FSD) technology
- Electronic Alfa Active suspension adapts to the selected drive mode and driving conditions
- Alfa Romeo hybrid Q4 all-wheel drive for top handling and safety

February 8, 2022, Auburn Hills, Mich. - One of the primary objectives behind the design of the 2024 Alfa Romeo Tonale was to achieve maximum driving pleasure. One element that contributed to this goal was the optimal weight distribution between the two axles – specific to the Alfa Romeo tradition of construction. This strategic application of mass and materials was achieved by enhancing the car's layout and centering the heavier components. The latter is further optimized in the Q4 all-wheel drive version by the torque available on the ground for each axle to ensure ideal traction for safe travel on snow and ice. The combination of an internal combustion engine and an electric motor – on which Q4 traction is based – provides higher torque than a car with a conventional combustion engine.

ADAS heightens the emotions with Level 2 autonomy

The Tonale is equipped with the new Alfa Romeo Advanced Driver Assistance Systems (ADAS) for Level 2 autonomous driving with Traffic Jam Assist (TJA), automatic handling of acceleration and braking and remaining within the center of the lane while maintaining maximum driving safety and comfort.

In detail, the Alfa Romeo Tonale enables Level 2 autonomous driving by combining the forward-facing camera, which longitudinally and laterally monitors all the car's surroundings, the Intelligent Adaptive Cruise Control (IACC) and Lane Centering (LC) systems. Specifically, the IACC system automatically adjusts the car's speed to maintain a safe distance from the vehicles in front utilizing the Traffic Sign Recognition and Intelligent Speed Assist systems. The former uses the on-board camera to recognize traffic signs, reports them on the display, and alerts the driver of the current speed limit. The latter suggests the driver reduce or increase their speed to the limit detected. If the driver accepts, the cruise control settings are automatically adjusted. Conversely, the LC system controls the side movements of the car to keep the vehicle in the center of the lane, even in heavy traffic conditions.

Driving modes managed by the Alfa Romeo DNA system

Alfa Romeo's signature DNA drive mode selector now comes to the Tonale. This advancement of the Alfa DNA driving mode selector includes specific functions related to the chassis dynamics. "Dynamic" mode includes less intrusive electronic stability control (ESC) and more effective braking and quicker response from the steering wheel plus a firm and sportiness suspension. "Natural" mode automatically manages the braking, suspension and steering for the best performance optimization for everyday use with electronic stability control (ESC) fully activated. Advance Efficiency mode is calibrated with ESC fully activated, providing a softer suspension for a more comfortable drive.

Both powertrain variants also offer ESC Off selection for the most aggressive and dynamic driving experience.

The most direct steering in the segment

In any situation and at any speed, driving the Tonale C-SUV is always natural and instinctive, partly due to the most direct steering ratio in the segment (13.6). The steering feeling – as precise and direct as can be expected from an Alfa Romeo – is optimized by the adoption of the geometry in the independent front suspension. Rebound is reduced by limiting the application of software filtering and optimizing control of front wheel steering. The sportiness is further enhanced by the aluminum paddle shifters: a hallmark of the brand and distinctive in its class.

Integrated Brake System (IBS)

Unique in its class, the new Alfa Romeo Tonale adopts the Integrated Brake System (IBS), an innovative electromechanical system that combines stability control with conventional servo brakes. The integration between electronics and mechanics, significant weight optimization, optimal feeling and the total absence of pedal vibrations guarantee the system an instantaneous brake response. The adoption of fixed calipers by Brembo, with four pistons and self-ventilated discs at the front and full discs at the rear, contributes to the improved braking performance.

Dual Stage Valve electronic suspension

The Dual Stage Valve electronic suspension provides a choice between performance and comfort. Developed in conjunction with Marelli – a historical technology partner of Alfa Romeo – the electronic shock absorbers feature a special electroactuated valve within the shock absorber that provides independent damping curves. Two modes are available: Comfort and Sport. The former is the preset calibration in the DNA Advanced Efficiency and Normal selections to ensure the smoothest performance on uneven roads. Conversely, Sport mode predominates in the DNA Dynamic and ESC Off selections, which reduces body movements and increases vertical rigidity, aimed at improved vehicle dynamics on corners. Finally, by pressing the dedicated button on the DNA selector, the calibration of Dynamic mode can be activated or deactivated.

Independent MacPherson suspension with Frequency Selective Damping (FSD) technology

The suspension scheme, suitably customized for Alfa Romeo's DNA, provides for a MacPherson-type architecture. Specifically, the geometry on the front axle is optimized for rapid and precise changes of direction, and consistent with the steering feeling typical of Alfa Romeo. This reduces steering distortion, limiting the application of software filtering and optimizing control of front wheel steering. In the rear, the exclusive three-arm geometry ensures rapid response when engaging and the highest level of lateral acceleration on corners. Finally, the Tonale's suspension uses Frequency Selective Damping (FSD) technology – developed in collaboration with Koni, a historical technology partner of Alfa Romeo – to improve performance by ensuring perfect road holding and simultaneously improving comfort in all driving conditions.

Alfa Romeo

Born in 1910 in Milan, Italy, Alfa Romeo has designed and crafted some of the most stylish and sporty cars in automotive history. That tradition lives on today as Alfa Romeo continues to take a unique and innovative approach to automobiles. The Alfa Romeo Stelvio sets a benchmark in performance, style and technology in an SUV. The award-winning Alfa Romeo Giulia delivers race-inspired performance, advanced technologies and an exhilarating driving experience to the premium midsize sedan segment. In early 2023, Alfa Romeo will offer its first compact SUV with the all-new Tonale. The globally available Tonale is part of a radical evolution taking place at Alfa Romeo, which looks ahead to a new era of electrification and connectivity. Alfa Romeo is part of the portfolio of brands offered by leading global automaker and mobility provider Stellantis. For more information regarding Stellantis (NYSE: STLA), please visit www.stellantis.com.

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