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All-new Fiat 124 Spider Engineered for Dynamic Driving Experience

- 2017 Fiat 124 Spider delivers performance-oriented and engaging driving dynamics in a robust rear-wheel-drive package
- Turbocharged MultiAir 1.4-liter engine with a front-mounted intercooler delivers up to 164 horsepower and 184 lb.-ft. of torque, available with manual or automatic transmission
- Suspension, steering and noise, vibration and harshness (NVH) tuning contribute to a refined, yet responsive ride
- Easy-to-operate convertible soft top for open-air experience

November 18, 2015, Auburn Hills, Mich. - With its responsive handling, excellent power-to-weight ratio, MultiAir Turbo power, use of lightweight materials and precision engineering, the all-new 2017 Fiat 124 Spider delivers the dynamic driving experience synonymous with both the iconic Fiat 124 Spider of yore and today's FIAT brand.

High-performance engine design provides high output to the rear wheels

The 2017 Fiat 124 Spider in North America features the proven 1.4-liter MultiAir Turbo four-cylinder engine, the engine's first application in a rear-wheel-drive vehicle. The engine delivers up to 164 horsepower and 184 lb.-ft. of torque.

Structurally, the 1.4-liter MultiAir Turbo engine starts with a cast-iron block and an aluminum bedplate. Bore is 72 mm (2.83 inches) and stroke is 84 mm (3.31 inches) for a total displacement of 1,368 cu. cm (83.5 cu. in.).

Lightweight cast-aluminum, hard-anodized pistons contribute to the overall strength of the reciprocating assembly and the engine's high rpm capability. Full-floating piston pins are used for added reliability. Piston cooling jets, located at the bottom of each cylinder, contribute to consistent power delivery and efficient fuel usage by squirting oil on the bottom of the pistons to help maintain piston temperatures and reduce the possibility of hot spots along the cylinder walls or at the top of the piston, which could lead to detonation.

Compression ratio of the Fiat 124 Spider's 1.4-liter MultiAir Turbo engine is 9.8:1. For optimum fuel economy and performance, fuel with a 91 or higher octane rating is preferred, while regular 87 octane is acceptable.

The 1.4-liter MultiAir Turbo engine's induction system includes a front-mounted intercooler designed to remove heat in the air charge that the turbocharger generates while compressing incoming air (higher air density for more power). Reducing heat provides a cooler, denser air charge that helps increase the potential for more power while reducing detonation sensitivity.

Other high-performance engine components include a new fresh-air intake system, a high-flow air filter and smooth-flowing plumbing for maximum power.

Paired with either a six-speed manual transmission or a six-speed automatic transmission (with paddle shifters on the Abarth model), the proven 1.4-liter MultiAir Turbo engine in the Fiat 124 Spider is designed to meet the rigorous demands of performance driving throughout its 6,500 rpm range.

Automatic transmission delivers direct shift feel and excellent fuel economy

The 2017 Fiat 124 Spider's six-speed automatic transmission uses a lockup torque converter with a damper. Lockup control is available from second gear and up. As a result, the six-speed automatic transmission offers a more direct

feeling in response to pedal operation and improved fuel economy.

Lightweight manual transmission tuned for optimal clutch and shift feel
The 124 Spider's six-speed manual transmission is a directly connected six-speed gearbox that features a simple structure and compact, lightweight design. Its die-cast aluminum housing, control over the flow of transmission oil and material use contributes to its lighter weight.

Shifts are direct and smooth with only a light amount of force required. The choice of gearing allows the use of a compact rear differential unit to improve fuel economy.

To contribute to the 124 Spider's precise driving dynamics, the clutch pedal operation is optimized, allowing drivers to control acceleration G-forces and delivering easy, quick shifts. The clutch pedal is ergonomically positioned to ensure the optimal length of movement between the pedal at rest and the engagement point – allowing for rhythmical gear changes with a light feeling. Optimized tuning of the pedal based on muscle characteristics results in a clutch feeling that enables precise control over the rate of acceleration.

Rear-wheel-drive system
The balanced front-to-rear weight distribution is combined with a lowered yaw inertia moment (achieved by moving the engine rearward and adopting aluminum components at the front and rear ends of the body) and a low center of gravity to deliver a light, dynamic driving experience.

The rear differential unit features a ring gear optimized to support the amount of torque produced. The thickness of the aluminum casing is reduced, maintaining strength and noise vibration and harshness (NVH) performance characteristics. The rear differential unit is compact, and the shape of the inside of the unit is optimized to create a smooth flow of oil from the rear differential gears.

Convertible top system
An open-air driving experience is effortless with the Fiat 124 Spider's easy-to-operate soft top. The operation of the top is optimized by examining the natural path the driver's hand takes when operating the top and how the driver can most easily apply the force required. An assist spring supports the driver's action when raising the top from the fully open position, making the force required minimal. This optimization saves weight by eliminating the need for a power assist system.

When the lock levers are used to open or close the top, the windows are automatically lowered to 140 mm lower than their fully raised position, making it easier and more convenient to operate the top.

The 124 Spider's seat structure also makes it simple to operate the soft top while seated. The seat provides a consistent level of support from the thighs, rear, hips and side of the ribcage, while bolsters are less snug at the shoulder level – allowing the driver's upper body freedom of motion.

While driving the 124 Spider with the top and windows down, the human-centric proportions of the body design and the rearward placement of the front header surrounding the windshield help to guide the wind above the heads of occupants and toward the rear of the car – minimizing both the amount of wind striking occupants directly and any drafts wrapping around from behind.

Lightweight body structure
The Fiat 124 Spider's body structure applies the basic concept of using straight beams and creating a continuous framework wherever possible so the various individual sections function in harmony.

In addition, the use of aluminum and high-tensile steel provides safety and rigidity, producing a lightweight open-top body that responds briskly to a driver's will.

The straight high-mount backbone frame for the front tunnel section – a crucial component for an open-top vehicle – and the large cross section contribute to build a strong structure. In addition, the subframe and crossmembers connect the backbone to the front and rear sections, which help to provide a structure that is lightweight, safe and

highly rigid.

Driving performance is enhanced by the application of lightweight aluminum parts on the body and chassis. Components made of aluminum include the hood and trunk lid, front and rear bumper reinforcements, seatback bars, underbody crossmember and bulkhead panel. To further optimize weight, the 124 Spider features an advanced seat structure that uses a lightweight net material on the seatback and seat cushion.

Suspension setup and steering contribute to dynamic driving

The Fiat 124 Spider's front suspension uses a double-wishbone layout. The 124 Spider's multi-link rear suspension helps to improve control while cornering. The dampers are connected directly to the hub supports, delivering a 1:1 damper level ratio in relation to the suspension stroke. The mounting position of the dampers is optimized to minimize changes in the ratio, helping to improve the grip of the tires. The axis of wheel deflection is set behind the point of contact with the road in response to lateral input from the tires. This creates link positioning that uses lateral force from the tires to increase toe-in, even under higher G-forces while cornering, for greater stability while turning.

With the use of an electric power assist steering (dual pinion) system, the 124 Spider's steering is light and responsive, accurately transmitting road input with a minimum of torque variation. Applying the power assist directly to the steering rack delivers positive feedback when steering in the high G-force range. The straight steering shaft position creates a linear steering feel, with the steering gear ratio optimized to deliver a linear response that matches driver tendencies.

NVH enhancements deliver refined, quiet ride

To minimize noise and vibrations and create a quiet, comfortable ride whether the top is open or closed, engineers adjusted the characteristics between the engine mounts. In addition, the cross-section shape of the frame that joins the transmission to the rear differential is positioned to allow occupants to sit closer to the center of the vehicle, while reducing powertrain vibrations. Individual suspension components are optimized to avoid generating resonance with one another, achieving stability while handling and minimizing road noise.

Wind noise is combated with the adoption of an aerodynamically efficient design for the rear edge of the hood, the A-pillars and header. The seatbelt mounting position is located to minimize wind noise while driving with the top down.

The 124 Spider also uses materials to prevent fluttering and improve sound insulation in order to reduce noise while driving with the top up. The soft top features a headliner inside the vehicle for improved sound absorption, as well as a rear package mat that adds to sound absorption and insulation.

FIAT Brand

FIAT brand celebrates 125 years as an automaker and some things haven't changed. Iconic Italian design and refinement, plus a fun-to-drive factor, come standard with every Fiat.

In early 2024, FIAT brand will launch the Fiat 500e,the first Stellantis retail battery-electric vehicle offering in North America and the best-selling city EV in Europe.

FIAT 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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