Contact: General Media Inquiries

Ariel Gavilan

2014 Fiat 500L: Engineering

- New “small-wide” chassis architecture provides the all-new 2014 Fiat 500L with world-class torsional stiffness, driving dynamics and crashworthiness
- World-class interior quietness, thanks to structural rigidity and a specially designed quietness package for the North American market
- Fiat 500L’s touring-tuned chassis combined with Koni frequency selective damping (FSD) system at all four corners builds on the Cinquecento’s fun-to-drive DNA and delivers the perfect blend of performance and comfort
- Precise electric power steering (EPS) combined with driving steering torque (DST) system improves handling and performance feel

June 27, 2013, Auburn Hills, Mich. - Utilizing Fiat Automobile’s new “small-wide” chassis architecture, the all-new 2014 Fiat 500L is designed to deliver world-class ride, handling, comfort and safety thanks to its high level of torsional rigidity, a touring-tuned suspension with Koni frequency selective damping (FSD) system and extensive use of high-strength steel.

“For the all-new 500L to deliver the fun-to-drive characteristics the FIAT brand is known for, we’ve engineered the new ‘small-wide’ architecture to maximize chassis performance, crashworthiness and outward visibility,” said Phil Jansen, Fiat 500L Vehicle Line Executive — Chrysler Group LLC. “With its ultra-rigid body design, we were able to dial-in the chassis for an exceptional handling experience without compromising interior quietness and ride comfort.”

Fiat Automobiles’ new “small-wide” chassis architecture

With extensive use of advanced steels, composites and advanced computer-impact simulations, the all-new Fiat 500L’s “small-wide” architecture delivers world-class torsional stiffness for optimum control of body geometry. For its passengers, the new architecture enables the Fiat 500L to feel tighter and stiffer, with an added sense of confidence and control during higher speed maneuvers.

With the Fiat 500L vehicle development program led by Fiat Automobiles for all of its international markets, the all-new 2014 Fiat 500L is designed to be competitive in all aspects of crashworthiness in the B-segment. Designed and engineered for government regulations and third-party ratings around the world, the five-passenger Cinquecento is capable of achieving results at the top of its class.

Segment-leading interior quietness

For the new 2014 Fiat 500L to achieve an articulation index of 72 percent, a level at the top of its class, engineers maximized the vehicle’s structural design and tuned the interior environment for sound quality and sound level by isolating powertrain, wind and road noise.

The idea of “lightness” on the all-new Fiat 500L also is weighed in the quality of silence. This five-passenger Cinquecento features a noise, vibration and harshness (NVH) package designed specifically for the expectations of North American consumers and includes laminated acoustic windshield glass, body-cavity silencing foam, under-flush rolled-framed doors with triple seals and acoustic wheel-well liners to absorb road noise and quiet the cabin. Combined, these design improvements provide the all-new Fiat 500L with world-class interior sound quality.

Perfect combination of performance and comfort

Building upon the Cinquecento’s fun-to-drive DNA, the 2014 Fiat 500L features a touring-tuned chassis that complements its MultiAir Turbo engine’s best-in-class horsepower and torque.

To deliver class-leading levels of control and comfort, the Fiat 500L features a MacPherson front-suspension design with exceptional rigidity for increased cornering performance and reduced weight. A specially designed front cross member serves two roles by providing rigidity to achieve greater acoustic comfort and to integrate a third-load line to improve energy absorption in the event of a crash. A new innovation is the adoption of a “split” type shock absorber mounting that transmits road vibrations to the body through two different routes for improved acoustics and better efficiency of the shock absorber.

At the rear, the Fiat 500L features a new torsion axle structure with a high level of rolling rigidity to save the weight of an anti-roll bar. Unique to the North American market are specially tuned bushings that deliver ride control and comfort, with the durability needed for more treacherous unpaved roadways.

Premium Koni frequency selective damping system for North America
Taking a page from the track-proven Fiat 500 Abarth models, the all-new 2014 Fiat 500L for North America features Koni frequency selective damping (FSD) front strut and rear shock absorbers to deliver improved road-holding and handling characteristics. In addition, the Koni FSD system actively filters out high-frequency suspension inputs from uneven road surfaces and adjusts for comfort and smoothness while maintaining excellent ride control.

Advanced electric power steering system
The 2014 Fiat 500L features precise steering thanks to its electric power steering (EPS) and driving steering torque (DST) system that improve both handling and performance.

The all-new Fiat 500L features an advanced steering column mounted EPS system. The Fiat 500L utilizes the latest EPS system technology available, which delivers sporty handling by managing significant loads at all steering wheel operating speeds, power assist curves modulated according to driving conditions, and up to a 3 percent improvement in fuel efficiency when compared with a conventional hydraulic system.

With the Fiat 500L’s EPS system, all of the power boost, or assist, is provided via an electric motor, and because the system is fully electronic, the driver experiences optimal steering effort at all vehicle speeds with improved fuel efficiency since there is no parasitic loss from a power steering pump.

The Fiat 500L’s DST system improves both driving safety and handling performance by actively carrying out corrections and automatically controls oversteer over surfaces with low grip in all driving conditions. Moreover, the steering system is fully integrated with the vehicle’s electronic stability control (ESC) system to help compensate in split-traction, torque steer and pull-drift (crowned road) situations.

Four-wheel disc brakes with electronic stability control
The all-new 2014 Fiat 500L features a world-class brake system designed with class-leading performance and feel, state-of-the-art technologies and maximum refinement.

At the front, 2.24-inch (57 mm) single-piston calipers feature 12 x 1.10-inch (305 x 28 mm) vented rotors that provide a large sweeping area, while 1.49-inch (38 mm) rear calipers with solid 10.4 x 0.4-inch (264 x 10 mm) disc brakes contribute to the Cinquecento’s precise brake-pedal feel and reduced stopping distance.

The Fiat 500L features a four-channel electronic stability control (ESC) system that monitors the speed of each wheel individually. The four-channel system allows individual wheel braking for superior control and provides back-up braking in the unlikely event that one of the two braking circuits would fail. The anti-lock brake (ABS) software uses a steering-wheel angle sensor that allows the system to differentiate between straight-line braking and braking in a turn, resulting in better straight-line braking with minimal yaw.

ESC helps maximize driver control in all conditions by combining both engine torque and brake control to regulate wheel spin at all driving speeds. When the system senses impending wheel slip during acceleration, it signals the throttle control to reduce drive-wheel torque. Under extreme situations, such as going from pavement to ice during acceleration, the system will selectively apply the brakes to maintain control. An ESC button on the center stack allows the driver to partially turn off the system.

Other features in the Fiat 500L’s ESC system include:

- Electronic brake-force distribution (EBD)
- Electronic rollover mitigation (ERM)
- Hill-start Assist (HSA)
- Brake traction-control system (BTCS)
- Brake Assist

-###-

Additional information and news from Stellantis are available at: https://media.stellantisnorthamerica.com