

## **Magneti Marelli's innovations on the Lancia Delta: damping control system, Instant Nav, LED daylights**

*The components and systems supplied for the new sedan also include headlamps, instrument clusters, automated transmissions for the Multijet 1.6 120 HP and exhaust systems*

Delta, a combination of elegance, style and innovation: with its components and systems, Magneti Marelli makes an important contribution to the technological features of Lancia's new medium-size sedan. An absolute novelty is the damping control system called "**Reactive Suspension System**", which controls the shock absorbers electronically to reduce vehicle oscillations, for improved comfort and added safety. The Delta also features the debut of Magneti Marelli's new-generation infotainment systems, with the "**Instant Nav**" radio navigator unit. In the lighting sphere, on the other hand, a major innovation is the front headlamp with new LED daylight function called **Adaptive Daytime LED**. On top of the above, Magneti Marelli's contribution also involves telematics and electronic systems (**Blue&Me™, Blue&Me Nav™, Instrument cluster, Body computer**), lighting (**halogen and xenon headlamps, fog/cornering lamps**), engine control and transmission (**Selectronic automated transmission, manifolds and throttle bodies**), suspensions (**complete system**) and exhaust systems.

**In terms of suspensions**, Magneti Marelli equips the Lancia Delta with the innovative damping control system called SDC (Synaptic Damping Control), which takes on the name of **Reactive Suspension System** on the Delta model.

Through real-time electronic control of the shock absorbers, the **Reactive Suspension System** reduces oscillations of the vehicle body under all driving conditions, thus ensuring the highest levels of safety, comfort and handling.

By means of special sensors, the system can identify the current driving scenario and roadway conditions, then chooses the most suitable control laws accordingly. One of these laws is the "Sky Hook", which isolates the passenger compartment and makes it ideally stable in case of outside disturbances.

Thanks to an electronic control unit featuring high calculating power and to accurate solenoid valves capable of providing an immediate answer, controls are applied in real time, neutralising and solving any problems caused by rough road conditions as they arise. Even in case of sports driving, the system can assist the driver by increasing manageability and manoeuvring accuracy, without being forced to give up high comfort standards.

**The suspension diagram** supplied by Magneti Marelli for the new Lancia Delta features a consolidated architecture optimised for comfort and lightness. McPherson front suspension with mechanical cross-member and telescopic struts optimised for new load conditions. The

rear suspension features a twist beam solution and anti-roll bar for excellent handling performances.

**Regarding the Electronic Systems**, the Lancia Delta introduces the new generation of infotainment systems developed by Magneti Marelli for Fiat Group Automobiles.

The “RadioNav”, called “**Instant Nav**” on the new Lancia Delta, offers an excellent integration of map satellite navigator, radio receiver and dual tuner and CD player /MP3 reader in a single system. The car radio dual tuner is equipped with “diversity” technology for the optimal tuning of radio stations and for receiving traffic information on the RDS-TMC (Traffic message Channel). The CD player can also reproduce MP3 contents.

The colour display is a 6.5” TFT in 16:9 format, with brightness and sharpness levels that allow it to be visible under different lighting conditions and dimensions that make it easier for the driver to understand driving directions. The system also features a man-machine (HMI) interface with new graphics.

The itinerary calculation algorithms have been optimised by taking advantage of the access speed to the map database, which is now stored on an SD card inserted in a special slot.

The system can be hooked up to cell phones, hand-held computers and MP3 readers thanks to its perfect integration with Blue&Me™, thus making it possible to display information, control the media player and the Bluetooth™ connection.

**Blue&Me™ and Blue&Me Nav™**, the popular systems developed by Magneti Marelli as a result of the cooperation between Fiat Group Automobiles and Microsoft, are also available on the Lancia Delta.

Magneti Marelli also supplies the **instrument panel** for the Lancia Delta. On top of ensuring excellent ergonomics, this panel looks elegant and represents a crucial element for the appearance of the entire dashboard, also thanks to the pleasant serigraphy colours.

Finally, **Magneti Marelli Electronic Systems** supplies the **body computer**. This is an electronic control unit that carries out, above all, the gateway function for CAN network management at high and low speeds.

**In the lighting area**, **Magneti Marelli Automotive Lighting** equips the Lancia Delta with the front headlamp with LED daylight, which takes on the name of **Adaptive Daytime Led** on this particular model.

The Lancia Delta’s front **headlamp** stands out due to its high technological content and innovative design, which is nevertheless inspired by the glorious traditions of the Lancia models of the past.

The **daylight function** consists of an innovative system of **white LED light**, with 10 light sources that enhance the hi-tech contents through a point-shaped lighting, which can be distinguished immediately.

The contour of the LED-technology daytime lights also characterises the vehicle in terms of appearance, giving it a unique style. In addition, upon turning on the dipped headlights, the LED’s voltage is automatically reduced, and the daylight lamps become parking lights combined with dipped headlights.

Magneti Marelli Automotive Lighting equips the Lancia Delta with both **headlamps** in the typical version with **halogen lamps** and in the **Xenon-AFS** (Adaptive Front Lighting System) version, **with adaptive function**.

In the latter version, the high beam is the result of a device based on Xenon technology, featuring automatic vertical adjustment to avoid dazzling, and horizontal rotation when taking curves. The adaptive movement of the lights when taking curves is made possible by a cutting-edge electronic control system. The beam of light follows the commands given by the steering, rotating in proportion to the curvature radius, up to a maximum of 15°.

Finally, for the Lancia Delta Magneti Marelli also supplies the front fog lamps, with the additional **fog-cornering** function. The light parabola of up to 70° allows excellent visibility, especially when taking curves: in this case, when a certain steering angle is exceeded at low speeds, the fog lamp in the direction of the curve turns on automatically, triggered by the vehicle electronic control unit.

**In terms of engine control**, Magneti Marelli Powertrain supplies **throttle bodies and air intake manifolds** for the three diesel engine versions offered by Lancia Delta.

**Magneti Marelli Powertrain** also supplies the **six-speed automated transmission**, known as “Selectronic” on the Lancia Delta, which will also be available on the 1.6 Multijet 16v 120 HP version in the future. The automated transmission is an electro-hydraulic automation system of the manual transmission and of the clutch that combines comfort with reduced consumptions and emissions. The system is based on an electronic control unit and a hydraulic system that supervise clutch use and gear shifting, allowing the driver to shift gears in sequential mode without using the clutch or in a fully automatic fashion.

Last but not least, **in the exhaust systems area** Magneti Marelli equips the Lancia Delta with systems for the after-treatment of exhaust gases in EURO 5 configuration, for both the 1400 turbo gasoline engine and for the new 1600 Multijet engine.

The solutions developed by Magneti Marelli for turbo engines running on gasoline use catalytic converters, while for the 1600 Multijet engine a specific after-processing system was developed consisting of catalytic converter and particulate filter fitted close to the engine. The exhaust pipes, designed and developed to ensure high appeal, look great and particularly well made.

**Magneti Marelli**, a company belonging to the Fiat Group, designs, produces and markets advanced systems and components for motor vehicles. With its 46 production facilities (56 production units), 9 R&D centres and 27 application centres in 16 countries, 28,000 employees and a turnover of 5 billion Euros in 2007, the group supplies all the leading carmakers in Europe, North and South America and the Far East. The business areas include: Lighting - Electronic systems- Powertrain – Suspensions and Shock absorber systems - Exhaust systems– Aftermarket Parts & Services - Motorsport.

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