PRESS RELEASE

Magneti Marelli at Auto Shanghai 2011

At the Chinese tradeshow scheduled from April 21st to the 28th, focus on technologies that will have an impact on CO_2 reduction: GDI injection, hybrid-electric engines, "open platform" infotainment, Xenon and LED lighting

Magneti Marelli will be at the 14th edition of Auto Shanghai 2011, confirming its strategic focus on the Chinese market which, last year alone, led to an increase of more than 40% in turnover (232 million/€ in 2010 compared to 162 million in 2009), thus exceeding the performances of an automotive market already marked by strong growth (about 32%). A growth built along the line of products and technologies in the Lighting, Powertrain and Electronic Systems areas which, together with exhaust systems, suspensions/shock absorbers and motorsport, are all represented in Magneti Marelli's **stand (B005)**, **Hall W4** at the Auto Shanghai 2011.

On the wake of previous participations, but especially in this year's edition, Magneti Marelli's presence configures itself in the framework of technologies pertaining to motor vehicle **CO_2 emission reduction** objectives, which are taking on a clear-cut regulatory shape in China too, with the definition of limits for carmakers (120 gCo_2/km in the cycle by 2020).
In this sense, at Auto Shanghai 2011 Magneti Marelli will be highlighting its contribution in the area of technological factors that will have a crucial impact in CO_2 reduction for automobiles: **powertrain** technologies aimed at improving the efficiency of the engine and transmission, "emerging" technologies such as the ones relating to **infotainment** and cooperative vehicle, and another category of systems defined as **"Eco-innovations"**, which are measured outside the regular type-approval cycle and include the vehicle **lighting systems**.

In the powertrain area, Magneti Marelli focuses especially on **GDI** (**Gasoline Direct Injection) technology**, in other words direct injection systems that, thanks to high operating pressures and sophisticated strategies of multi-point injection combined with turbocharger, allow engine downsizing, improved performances, and significant reductions in fuel consumption and emissions.

As the use of automobile fuel supply technologies such as diesel or CNG (methane) is not commonplace in China, GDI direct injection represents, together with hybrid-electric engines, the most effective powertrain technological solution in order to fall in step with the trend of emission reduction required by regulations, with very interesting growth opportunities on the market. In this scenario, at the Auto Shanghai tradeshow Magneti Marelli, already one of the world's leaders in the production of GDI injectors, showcases its role of system supplier and integrator for GDI systems, as its offer includes all system components – injectors, pump, electronic control unit, software – as well as the integration know-how.

As for the **hybrid-electric engine** area, on the other hand, Magneti Marelli maximizes the experience acquired in Formula 1 with **KERS** (the Kinetic Energy Recovery System– fitted on the racing cars of some top team, also last week-end in the Shanghai F1 Grand Prix), and in

systems and components aimed at mass-produced hybrid and electric engines (motor generators, electronic controls systems, inverters, battery control, etc.).

Specifically, **three prototypes of hybrid-electric engines** (electric motor generators plus built-in inverters) will be on display at the Auto Shanghai 2011. These engines can deliver power of **60, 120 and 180 kilowatt**, respectively, yet feature compact size (approximately 320x240x220 mm) and reduced weight (between 33 and 57 kg), allowing for easy installation on the vehicle and shorter time-to-market. One example of an electric motor generator and built-in inverter is also on display at the **Pininfarina stand** *(Pavilion W2 – Stand W206),* installed on the **"Demo Vehicle"** that Pinifarina developed at the Nido laboratory.

On the powertrain front, the "transmission" area is also relevant from a standpoint of CO_2: in its stand, in addition to the traditional and successful **AMT (Automated Manual Transmission) Freechoice®** robotized gearshift, which combines comfort of use and reduced consumptions and emission, Magneti Marelli also display solutions for **electronic management of the Dual Clutch gearshift**, a dry dual clutch system that allows drivers to select gears with no interruption in the flow of torque/power from engine to wheels, for smoother and cost-effective driving.

Moving on to **infotainment and telematics**, Magneti Marelli has specifically set up an area of its stand for technologies that allow automobiles to be connected to the wide world of communication networks, Internet and services, in particular to regulate and monitor their use and flows, optimize operating costs and emissions, and allow in-vehicle entertainment and information with added value.
In the foreground, specifically, telematic boxes and infotainment systems based on an **"open platform"**, an approach in which Magneti Marelli has always been on the cutting edge, having pursued developments, in parallel, in Microsoft and Linux/Genivi environments, now with the addition of the Google/Android architecture.

The **open platform** represents the technological base for advanced in-vehicle information, entertainment and connectivity functions, and it allows for multimedia, telematic and advanced navigation devices to be fitted on automobiles. The open platform makes it possible to build a common platform between suppliers and carmakers, with clear advantages from the standpoint of sharing and cutting down on development costs, shorter time-to-market, and openness and compatibility with constantly evolving consumer devices. It also offers the highest possibility to customize devices, functions and user interfaces (HMI).

The area of "Eco-innovations" rightfully includes vehicle **lighting systems**: **Xenon and LED headlamps and rear lights** are on display in a dedicated area of the stand. When used together (i.e.: Xenon technology for the low beam/high beam functions and LEDs for all the other front and rear lighting functions), these technologies can potentially guarantee – according to research carried out by Automotive Lighting – **savings of up to 80 Watts and 2 grams of CO_2 emissions** per kilometre. Moreover, at Auto Shanghai 2011 Magneti Marelli's Automotive Lighting division also displays the latest technological frontier as far as lighting its concerned: **the first full-LED headlamp with adaptive functions**. This headlamp features all-LED lighting

functions, together with a sophisticated electronic management system that adapts the light beam to vehicle speed, itinerary type and different weather conditions, offering drivers the best possible lighting at night or in adverse weather, considerably improving safety levels.
Inside a darkroom set up at the Magneti Marelli stand, visitors will have a chance to appreciate the features of this headlamp thanks to a demo device that simulates driving and recreates different itineraries and visibility conditions.

In addition to a taste of the Motorsport division's know-how (among various products and systems, Magneti Marelli supplies injectors to practically all Formula 1 teams), the Magneti Marelli stand at Auto Shanghai 2011 also displays technologies in the areas of Exhaust Systems and Shock Absorbers and Suspensions. As far as the latter is concerned, the Dynamic Systems business area presents the latest version of the electronic control system for suspensions called **Synaptic Damping Control**, which combines sophisticated technology and competitive costs. Through control of shock absorbers by an electronic control unit, this system reduces vehicle body oscillations under all driving conditions, thus guaranteeing the highest levels of safety comfort and driveability. By means of special sensors, the system can identify the driving scenario and roadway conditions, and consequently choose the most appropriate control laws.

Magneti Marelli will be in Pavilion W4, Stand B005.

Magneti Marelli *designs and produces advanced systems and components for the automotive industry. With its 77 production units, 11 R&D centres and 26 application centres in 18 countries, about 33,000 employees and a turnover of 5.4 billion Euros in 2010, the group supplies all the leading carmakers in Europe, North and South America and the Far East. Its business areas include: Electronic Systems, Lighting, Powertrain, Suspensions Systems and Shock absorbers, Exhaust Systems, Aftermarket Parts & Services, Plastic Components and Modules, Motorsport. Magneti Marelli is part of Fiat Spa*

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