



## PRESS RELEASE

### Magneti Marelli at Auto Shanghai 2019

- *From 18<sup>th</sup> to 25<sup>th</sup> April, Magneti Marelli will be present at the 19th edition of Auto Shanghai at the National Exhibition And Convention Center (NECC) hall 5.2, stand 5B F151*
- *In the spotlight: advanced HMI and Connectivity, Electrification, Autonomous Driving and Intelligent Lighting*
- *Within the stand, a “Sparks of history” path celebrates 100 years of company history*

The 2019 edition of Auto Shanghai focuses on the themes of future mobility in all its technological forms in a market as important as that of China.

In line with the message of the auto show, **Magneti Marelli’s** stand at Auto Shanghai will focus on technologies in the field of **HMI (Human-Machine Interface) and Connectivity, Electrification and Autonomous Driving**.

The technological “storytelling” of Magneti Marelli at Auto Shanghai 2019 also includes chapters devoted to **Powertrain** and **Intelligent Lighting**. Another key element in the narration is the 100th anniversary of the company, which takes place this year. In a devoted area of the stand, a series of graphic panels named “Sparks”, describes the experiences, the know-how and the main stages of the history along the last 100 years.

The presence of Magneti Marelli at the Shanghai auto show is characterised by the concept “**A part of... your Future**”, which recalls the company mission to be a future-oriented technology enabler and its key role in the integration of various components of the vehicle as a system, and of the mobility system in general. Visitors to the stand will have the opportunity to experience this concept taking a “journey” that will lead them to explore technologies. The path begins from the inside of the engine – to discover alternative powertrain technologies – then moves inside the cockpit – with the world of advanced HMI – and finally comes to the outside of the car – with Perception technologies and detection solutions, aimed at future evolutions of autonomous driving. All of this, with the Shanghai skyline on the background.

Among the most relevant technologies displayed in the area of advanced HMI and Connectivity, Magneti Marelli is placing particular focus on the innovative solutions developed in the R&D centre in Guangzhou, with a selection of displays and instrument clusters.

In the spotlight is also the **3D Digital Cluster**, a new solution to introduce 3D perspective into instrument clusters. Differently from all the other solutions on the market, and thanks to “auto-stereoscopic” technology, this solution allows 3D vision effects without the use of

diverse optical layers, thus making a simple and cost-effective solution possible. 3D displays can be useful for perception of the surrounding environment, during a parking sequence, or to provide immersive navigation. At the same time, they can replicate complex surfaces of an object or they can be used to display alerts to the driver.

Also worthy of note are the 8" **Polablack displays** which – when switched off – are perfectly integrated with the rest of the dashboard, and – when switched on – guarantee 40 percent more transparency and luminosity than traditional systems.

Another area of particular interest is that dedicated to the **E-Cockpit**, where Magneti Marelli will be presenting solutions with fully integrated digital screens which are capable, with a single electronic control unit (ECU), of managing two different operating systems, for example one that handles infotainment functions and one dedicated to the instrument cluster. This technology, which is called **Hypervisor**, can be seen applied to two E-Cockpits on display: the **Cardea Multi-Display** and the **EVoK**, which will be accompanied by a **27" EVoK V-Shape** and the **27" Evo**. In particular, the Cardea is a Multi-Display E-Cockpit solution with Hypervisor technology based on an Android operating system and integrates a single ECU capable of managing both the instrument cluster display and the secondary infotainment display. The two AMOLED displays are fitted to seamless curved glass with touchscreen functions.

In consideration of the relevance of the hybrid-electric field in China, an area of the stand is dedicated to **electrification** and to the **know-how** developed by Magneti Marelli in the last years.

All the solutions developed by the company in this field are displayed here, starting with the 48-volt **BSG (Belt Starter Generator) electric motor** which substitutes the starter motor and also serves as an alternator, capable of providing a power boost to the internal combustion engine in the region of approximately 20 HP. The hybrid-electric system **PERF.E.T (PERForming and Efficient Transmission)** created by Magneti Marelli in China and the **BMS (Battery Management System)** control unit for HEV-BEV vehicles which avoids and prevents damage to the battery array, maximising power and efficiency, will also be shown. The stand will also be presenting **SiC (Silicon Carbide) miniaturised inverters** used in the motorsport field.

In the field of energy recovery systems, in the booth are also on display the developments of Magneti Marelli in the area of **regenerative shock absorbers**, a mechatronic damping system to recover kinetic energy to transform it into electric energy.

A fundamental role for electric vehicles, but in the perspective of weight reduction, is also played by **suspension systems and shock absorbers** made of **composite material**, that are displayed at the booth as well.

Another crucial element for completely electric vehicles is also represented by **exhaust systems**, with particularly reference to "sound" production. International regulations are in fact beginning to frame these systems as fundamental elements to produce distinctive

sounds, in order to indicate the presence of a moving electric vehicle. This is why Magneti Marelli will be presenting **Active Sound System/Brand Sound Signature** technology at Auto Shanghai, which allows car makers to personalise the sound produced by a virtual exhaust system. The particularities of this system can be experienced via an interactive app which will allow visitors to personalise and listen to the simulation of various sounds. In parallel it will be exposed an **exhaust system with TEG (ThermoElectric Generator) technology** will also be on display, which converts exhaust gases into thermoelectric energy used to recharge the batteries for secondary systems.

The third significant trend for future mobility is **Autonomous Driving**. A part of the stand, dedicated to this theme, focuses on the know-how related to **Sensing Technologies** – which allow processing sensors' signals, detecting and recognising objects around the vehicle, permitting 3D positioning and tracking – and to components aimed at **perception and sensing functions**.

Particular focus is therefore placed on the **Smart Corner**, named a **CES® 2019 Innovation Award Honoree**, and the technology produced by **Smart me up**, a French startup acquired by Magneti Marelli in 2018 and specialised in Perception Software. This area will also be showing a video which presents the “**Smart Service**” vision of **Magneti Marelli Checkstar** for that which has been defined as the “**Workshop 4.0**”.

Within Magneti Marelli's stand at Auto Shanghai, significant space is of course devoted to the field of Lighting, a strategic business area for the technological and products portfolio of the company. A “**lightroom**” will present the functions of **Digital Lighting Processing (DLP)**, the first mass-produced 1.3-million-pixel headlight in the world. DLP technology creates ideal lighting conditions and allows for the projection of images onto the road to communicate with both drivers and pedestrians.

Visitors will also have the opportunity to admire a number of examples of Magneti Marelli's Chinese production, which has in the **Changchun** plant, in the province of Jilin, an excellence production hub, supplying the main premium car-makers with advanced solutions. Therefore, a number of solution will be on display such as the **All-LED** headlamps and **3D LED** rear lamps used by the car manufacturer Changan, and the **Flat Folia LED**, a particularly efficient solution which replicates the characteristics of OLED systems but with lower manufacturing costs.

Other powertrain technologies will be on display, such as the **GDI** injection system with a working pressure of 1000 bar, and the **Water Injection** system complete with control unit, rails, injectors, and water pump and tank. In particular, the Water Injection system for petrol turbo-compressor engines is capable of injecting water into the combustion chamber thanks to the presence of an additional injector for every cylinder. This guarantees improved performance and efficiency, optimising operating conditions inside the combustion chamber and allowing for a reduction in CO<sub>2</sub> emissions of approximately 3-5%.

Magneti Marelli's presence at Auto Shanghai is a further demonstration of the consolidated development of the company in China, where it has been present since 1996 with production plants and R&D/Engineering Centres in Shanghai (SAGW Powertrain JV), which is also the

location of the headquarters, Wuhu (Automotive Lighting), Guangzhou (Electronic Systems, Suspension Systems), Chagnsha (Exhaust Systems), Hangzhou (Shock absorbers in JV with Wanxiang Qianchao Company), Changchun (Powertrain and lighting in JV with FUDi), Hefei (exhaust systems with JAC and Lingdatang), Foshan (Automotive Lighting), and Xiaogan in the province of Hubei (China South Industries Group Corporation - CSI Automotive Lighting JV).

***Magneti Marelli** designs and produces advanced systems and components for the automotive industry. With 85 production units, 15 R&D centers in 20 countries, approximately 44,000 employees and a turnover of 8.2 billion Euro in 2017, the group supplies all the major carmakers in Europe, North and South America and the Asia Pacific region. The business areas include Electronic Systems, Lighting, Powertrain, Suspension and Shock Absorbing Systems, Exhaust Systems, Aftermarket Parts & Services, Motorsport.*

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