

News Release

Hyundai Motor showcases Advanced Wearable Robots at the 2017 Geneva International Motor Show

- Innovations in assistive technologies allow Hyundai Motor to deliver mobility solutions beyond the automobile
- Hyundai Motor's wearable powered robots can provide independent personal mobility for paraplegics and the elderly
- Robotic developments include a wearable exoskeleton to assist with heavy lifting in the workplace

March 7, 2017 – Hyundai Motor has revealed new wearable powered robots that will revolutionize the future of personal mobility. The advanced assistive medical, work and daily life exoskeletons are on show at the 2017 Geneva International Motor Show, demonstrating Hyundai Motor's ambition to provide customers with personal mobility solutions and freedom beyond the automobile.

The H-MEX (Hyundai Medical EXoskeleton) helps patients with lower spinal cord injuries regain the ability to walk. By utilizing a wireless clutch with on-board motion control system, the equipment gives paraplegics the ability to sit, stand, move, turn and even walk up or down stairs.

The HUMA (Hyundai Universal Medical Assist) exoskeleton operates on a different control principle, but it provides assisted mobility support for people with limited muscular power. It provides assistive torque to help those with limited mobility to easily move their bodies. By adjusting assistive torque according to each form of movement, such as walking, running, or going up and down stairs, HUMA assists users to move effortlessly. It can support up to 40kg of a wearer's weight and, unloaded, can run at a speed up to 12km/h – capabilities that would benefit for military/industrial purposes such as load-carrying. Meanwhile, the Hyundai Waist EXoskeleton, known as H-WEX, provides upper-body and hip support to prevent back injuries for workers doing repetitive manual work or lifting heavy objects.

H-MEX and HUMA are powered by removable and rechargeable battery packs and their light-weight frames are adjustable in length to fit different sizes of user for ultimate comfort. The lower back and knees are supported with harness fixture points, while the devices change shape and flexes around the artificial joint structures of the robotic frame to manage body posture and deliver gait efficiency for walking.

In this vein, H-MEX provides individually-tailored gait pattern adjustment by calculating a series of factors, including walking pace, length of stride, and torso tilting angle via an application program installed in a smart device. Moreover, HUMA uses a series of advanced joints and mechanisms to align its movement with that of the user, enabling agile motion.

The H-WEX takes similar form but instead provides a safety solution for the workplace, assisting users with heavy lifting and other strenuous or repetitive activities. Activating the Waist Assist function enables the

exoskeleton to flex its joints at up to 180 degrees per second, with an operating algorithm built-in to ensure ultimate user safety. As with the other exoskeletons, the frame of the device supports and protects the user's lower back and upper legs for optimal body positioning and is light-weight to ensure portability and ease of use.

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About Hyundai Motor Europe

In 2016, Hyundai Motor achieved registrations of 505,396 vehicles in Europe – an increase of 7.5% compared to 2015. During the last two years the company replaced 90% of its model line-up to create the youngest car range in Europe. 90% of the vehicles Hyundai sold in the region are models designed, engineered, tested and built in Europe to meet the needs of European customers, served by the company's extensive European infrastructure. This includes two factories in the Czech Republic and Turkey, which have a combined annual capacity of 600,000 units. Hyundai Motor sells cars in 31 European countries through over 1,600 dealerships responsible for over 2,100 outlets.

Hyundai Motor offers its unique Five Year Unlimited Mileage Warranty package with all new cars sold in the region, providing customers with a five-year warranty with no mileage limit, five years of roadside assistance and five years of vehicle health checks.

More information about Hyundai Motor Europe and its products is available at www.hyundai.news.

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About Hyundai Motor

Established in 1967, Hyundai Motor Company is committed to becoming a lifetime partner in automobiles and beyond. The company leads the Hyundai Motor Group, an innovative business structure capable of circulating resources from molten iron to finished cars. Hyundai Motor has eight manufacturing bases and seven design and technical centres worldwide and in 2016 sold 4.86 million vehicles globally. With more than 110,000 employees worldwide, Hyundai Motor continues to enhance its product line-up with localized models and strives to strengthen its leadership in clean technology, starting with the world's first mass-produced hydrogen-powered vehicle, the ix35 Fuel Cell, and IONIQ, the world's first model with three electrified powertrains in a single body type.