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The smallest exoskeleton in the world / Ottobock at Hannover Messe



The smallest exoskeleton in the world

Ottobock presents new exoskeletons for ergonomic workplaces during the Hannover Messe trade show

From 1 to 5 April 2019, Ottobock will be presenting its industrial exoskeletons for the first time at the Hannover Messe trade show. Visitors to booth G18/1 in hall 17 will have the opportunity to personally test the passive exoskeletons in the Paexo product family and experience the relief they provide. "Exoskeletons designed for industrial settings will bring about permanent changes in many working environments," says Dr Sönke Rössing, Head of Ottobock Industrials. "They can play a major role in preventing workplace injuries in many sectors, and help to make workplaces more ergonomic. Based on our 100 years of biomechanical and orthopaedic expertise, we are driving this change."

Paexo Thumb - the smallest exoskeleton in the world

The new Paexo Thumb supports people who place strain on their thumbs at work on a daily basis. Such activities can include clipping, inserting or plugging tasks on assembly lines. The small and extremely lightweight exoskeleton relieves the thumb by up to 70% by redirecting forces to the entire hand. This relieves strain on the thumb joints and protects the tip of the thumb against mechanical influences. In addition, users automatically assume an ergonomic hand position when wearing the Paexo Thumb.

"The Paexo Thumb is the smallest exoskeleton in the world - but it has an impressive effect," says Rössing. "It was developed using the new opportunities offered by 3D printing and in close collaboration between our biomechanics experts and industry partners." Ottobock developed and tested the Paexo Thumb together with companies in the automotive and home appliances sectors. The new device was deployed in paint shops and on assembly lines, for example. "The potential of the Paexo Thumb was clearly evident in these settings. It's a simple yet innovative solution for preventing joint problems in the hand," says Rössing.

The Paexo Thumb is one of the first Ottobock products to be fabricated in series production using a 3D printer. The exoskeleton is "printed" in Germany, in seven sizes, and will be available from the end of April 2019. For those buying in bulk, prices start at EUR99 per piece for larger quantities. Companies interested in testing the product can obtain sample kits with seven pieces for 149 euros.

Paexo Wrist - support for the wrist

The new Paexo Wrist will also be available starting in April 2019. This exoskeleton supports the wrist when the user lifts and holds heavy objects. Ottobock Industrials based the Paexo Wrist on a medical device aimed at treating conditions such as inflammation in the wrist. It is used as a preventive tool in industrial settings to protect the sensitive area of the wrist. It can be used, for example, when holding rivet removers and welding equipment or when moving or installing generators and starter motors.

The Paexo Wrist's innovative material makes it particularly comfortable to wear, as it regulates the temperature of the skin. It can

be donned and removed with just one hand and is priced starting at EUR149.

Paexo Shoulder - overhead work made easy

The Paexo Shoulder was the first product to be launched by Ottobock Industrials and has been available since October 2018. Weighing just 1.9 kilograms, it is the lightest exoskeleton of its kind. The Paexo Shoulder is worn close to the body, similar to a backpack. The arm shells transfer the weight of the raised arms to the hips, using mechanical cable pull technology. This provides noticeable relief to the shoulder muscles and joints, and enables users to perform overhead activities much more comfortably. The design is based on natural human movements. Users can walk, sit and also pick up objects with the exoskeleton. It can be donned and removed in fewer than 20 seconds and can be comfortably worn for more than eight hours.

The fact that the Paexo Shoulder can be used in very different sectors - e.g., in aviation and automotive companies, in the food industry, at shipyards and on building sites - demonstrates the exoskeleton's potential. Since 2012, Ottobock has been researching innovative solutions to make jobs in industry, logistics and the trade sector more ergonomic.

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