

New products of 2018

Otto Bock HealthCare GmbH

From pattern recognition for the bebionic hand to combination braces – innovations from Ottobock



A world first that Ottobock (Duderstadt, Germany) will be exhibiting at OTWorld is a pattern recognition system for the bebionic hand. This is an approach to the development of an intelligent control mechanism with the ability to learn. With it, myoelectric prosthetic arms will, in future, acquire even greater functionality than ever before. The specialist audience in Leipzig will be able to observe movements of the bebionic prosthetic hand based on pattern recognition. A dedicated app gets the user to execute a range of predetermined movements. As the user does

so, the control system learns and stores the pattern of specific muscle group activity as a template in the prosthesis. Eight pairs of electrodes are required to register the complex patterns of movement (rather than the two that have been used hitherto). They are fitted in the socket around the residual arm.

Another innovation is the 4R10=111 Quickchange adapter from Ottobock, which permits the rapid swap-over of prosthetic feet. If, for instance, different prosthetic feet are needed for different everyday situations, such as sporting activities or to wear with different height heels, amputees can change their prosthetic foot themselves with one hand. The integration of the Quickchange attachment does not alter the construction of the prosthesis itself. Technicians need to build up the various prosthetic feet just once, so that they are all the same height. The adapter is then added like any normal component.





Also part of Ottobock's OTWorld portfolio is a cosmetic cover, providing functional shape equivalence for their prosthetic knee joints, the Genium and the C-Leg 4. It replicates the natural size and shape of the leg and thus makes the artificial leg visually more unobtrusive. It interferes significantly less with the functionality of the knee, compared to traditional cosmetic approaches. Equally, it minimises the impact on other components of the prosthesis, such as the screw-on adapter. The shape equaliser consists of a functional knee component, a lower leg component that

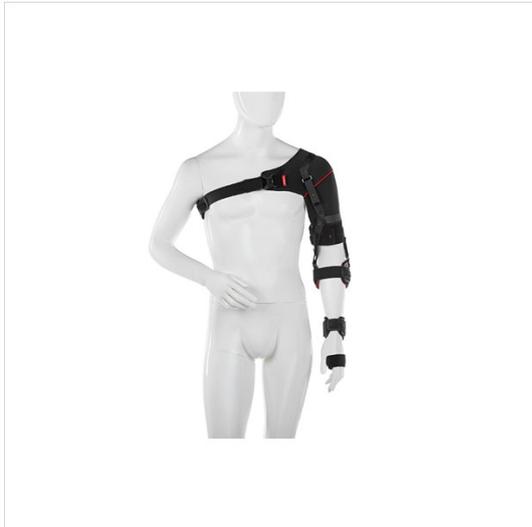
can be individually shaped and a visually pleasing, washable cover. All components are to a large extent prefabricated. The knee component comes ready shaped to provide a perfect fit and saves the orthopaedic technician the painstaking job of making both components in the workshop. The internal contours of the lower leg component are pre-designed to fit the contours of the knee joint exactly.

Ottobock's Agilium Sofffit brace extends the Agilium range of orthoses for patients with osteoarthritis. At OTWorld, the company will be exhibiting their textile-based, 'single-upright' model that can be used with unicompartmental osteoarthritis. This is based on the traditional three-point principle. Both varus and valgus deformities are covered with a single orthosis and there is only one model for the right and left leg.



Ottobock will also be presenting their double-action ankle joint, Nexgear Tango, in Leipzig. It is the first product in their new universal premium joint range, Nexgear. It has been developed for use with paralysis and partial paralysis of the lower extremities and opens up new treatment options for AFOs and KAFOs. With its three functional modules, the Nexgear Tango can be adapted to changing requirements in terms of both function and design – in the course of rehabilitation, for example. The modules can be added or removed at any time. The core is the reaction

module, which exercises dynamical control and support for the rise and fall of the foot, as well as acting upon the knee in the standing phase. There is a variety of different reaction springs available for this, which means that different individual requirements can be met with respect to the need for the device to store energy and then give it up again to create a more dynamic gait. Even with high-powered springs, the ankle retains a considerable flexibility of movement.



Extended functionality is also promised by the first-time combination of Omo Neurexa plus and Manu Neurexa plus – Ottobock's shoulder and hand braces. The units, that have been combined in the Shoulder-Elbow-Wrist-Hand-Orthosis (SEWHO), support the rehabilitation process following strokes and / or damage to the central or peripheral nervous systems. At the same time, Omo Neurexa plus can be used to treat both shoulder pain and shoulder dysfunction. The Manu Neurexa plus helps to control the wrist, hand and fingers. The advantages to be

achieved from combining the two products, both of which can be put on with one hand, are improved control and repositioning of the arms, as well as reduced spasticity.