ottobock.

For more real-time dynamics

C-Brace® increases movement horizon in the field of orthotics

Quality for life

Being the world's first stance and swing phase-controlled orthosis, C-Brace® opens up unforeseen possibilities in the field of neuro-orthopaedics. On one hand, it enriches the job profile of orthopaedic technicians, while at the same time increasing the user's movement abilities in everyday life. In neurological indications of the lower extremities inhibiting a secure stabilisation of the knee, the paralysis orthosis ensures a dynamic gait cycle, which the system controls permanently and in real time.

Thanks to the unique sensor technology of the SSCO®-system (Stance and Swing Phase Control Orthosis), C-Brace® regulates the stance as well as the swing phase mechatronically. As opposed to conventional, locked orthoses, this alternative solution reacts intelligently to the entire movement process. Via a user-friendly software, the orthopaedic technician is able to adapt the orthosis to fit the user's individual needs. Based on the natural example, the courses of movement such as descending stairs step-over-step, flexing under load as well as walking on uneven surfaces are, for the first time ever, almost physiologically possible. In the long run, the orthosis system promotes natural body posture by decreased compensation movements on the contralateral side. With the combination of these innovative product characteristics, the C-Brace® can offer more mobility and security for patients suffering from paralysis of the lower extremities.

Technical features for a harmonic gait pattern

The individually manufactured SSCO® system consists of upper and lower leg shell as well as a foot piece, all of which are hydraulically driven by the lateral C-Brace® joint unit. A sensor-integrated fibre composite spring connects the foot element with the shell of the lower leg. From this spring element, an ankle moment sensor transmits the current gait phase to the knee unit, which is integrated into a carbon fibre frame along with the electronics. At the same time, a knee angle sensor continuously measures the flexion of the knee joint and its angular velocity. This way, a microprocessor recognises in real time the phase of the user's gait cycle, and

accordingly regulates the hydraulic resistances and controls flexion and extension. Due to the continuous calculation, the C-Brace® is able to optimise the gait pattern in every single phase.

The C-Brace® not only persuades from a technical point of view, but also with its special composition of individual components. Principal element of the orthosis system is the PrePreg fibre composite material. It distinguishes itself through its maximum stability at minimum weight and is, at the same time, easy to reproduce. The combination of PrePreg and carbon offers an enormous gain in functionality. A high-quality Li-Ion battery integrated into the C-Brace® joint unit ensures electrical power supply.

Entering fresh grounds in the job profile of orthopaedic technicians

Ottobock as the manufacturer offers obligatory certifications for orthopaedic technicians so they can provide patient fittings and are able to take advantage of the manifold functions C-Brace® has to offer. The seminars provide extensive know-how regarding the individual work steps as well as the technical details of the fitting process. Use of the adjustment software C-Soft 2.6 for individual configuration of the orthosis is also one of the focuses. It is easy to understand, thus easily leading the technician through the patient's movement cycle while at the same time analysing each and every gait phase via Bluetooth®.

Further information:

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