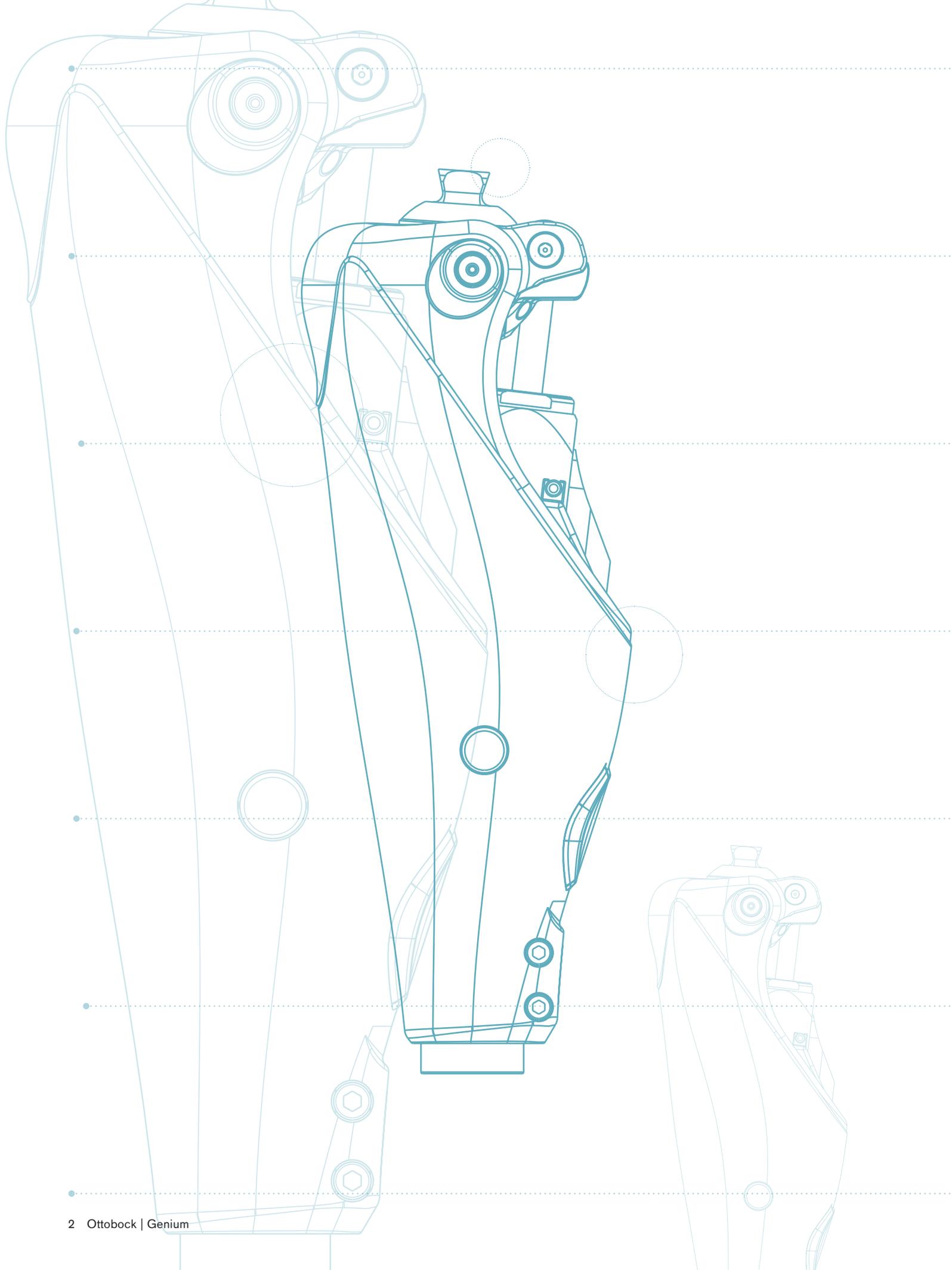


Genium

Reclaim your strength.



Quality for life



The new Genium

Incomparably close to nature

What users want most is to think about their prosthesis as little as possible. They want to move naturally and intuitively. And be able to focus entirely on their own strengths. This is precisely why we developed the Genium.

The launch of the Genium – Bionic Prosthetic System in 2011 was a breakthrough in the field of knee prosthetics. For the first time, a virtually natural replication of the physiological human gait was possible with a leg prosthesis system. And it offered previously unimaginable possibilities, even when walking backwards and taking stairs step-over-step. For independence in everyday life and beyond. With the Genium, the user's movements are more natural than ever before.

Developing through experience

In recent years, technicians and users around the world have gained valuable experience with the Genium. The acquired knowledge continually influenced the system's further development. Among other features, we upgraded the proven OPG function (optimised physiological gait) – to make walking even more intuitive, more natural. We integrated functions which make everyday life easier for bilateral amputees in particular. With the new Cockpit app, the prosthesis can be conveniently controlled using a smart-phone. And the design more clearly emulates the shape of the leg. Its moulding and colouring are clear and vibrant.

The new Genium is for users who want to move as effortlessly and dynamically as possible, and who live their lives the same way. For doers.



These further developments have naturally also benefited the new Genium X3 – the leg prosthesis system that sets another new standard not only with regards to naturalness, but durability as well.

Genium X3: Turn the brochure to read more.

Enhanced OPG

The unique way to walk naturally

The Genium imitates natural movements nearly identically. This progressive technology is unique and results in incredible freedom in everyday life and beyond. But how was it possible to further optimise the optimised physiological gait (OPG)? We were able to do this by continually evaluating practical experience and turning it into technology. The new Genium can also be controlled even more intuitively. Its hardware and software are absolutely state-of-the-art.

All for one goal: to emulate the best possible way of walking. Which is to say, the natural, physiological way. Step by step.

Safety
Protection
Endurance
Relief
Mobility

- Good support on uneven and unfamiliar ground
- Significantly reduced risk of tripping due to increased ground clearance, independent of walking speed
- High degree of safety when moving in small spaces, walking backwards, opening heavy doors, carrying heavy loads and walking down stairs and ramps

Safety
Protection
Endurance
Relief
Mobility

- Reduced impact at foot contact
- Increased ground clearance, leaving more room to manoeuvre
- Round, symmetrical movements and a nearly natural swing phase
- Automatic setting of the swing phase according to weight of footwear

Safety
Protection
Endurance
Relief
Mobility

- Fewer orthopaedic problems thanks to protection of locomotor system
- Smooth gait pattern due to reduced step length asymmetry and decreased impact at foot contact as well as ideal ground clearance in many situations
- Relieves load placed on the knee and hip joint of the unaffected side

Protection
Endurance
Safety
Relief
Mobility

- Support for forward movement at foot contact
- Effort-saving, especially on slopes, uneven ground, grass and sand
- Greater endurance over long distances

Protection
Endurance
Relief
Safety
Mobility

- Activities of daily living can be easily performed thanks to intuitive control
- The prosthesis makes complex movement patterns of the upper body easily possible, e.g. tasks around the house or at work

1 PreFlex

Very smoothly electronically controlled, physiological 4° preflexion of the knee joint upon heel strike. This converts the ground reaction force into forward movement and the impact at foot contact is effectively damped. This also leads to quicker, secure full contact of the prosthetic foot and clearly promotes flexion in the stance phase.

2 Adaptive Yielding Control

The knee features intelligent real-time control of stance phase flexion and stance phase extension movements. The flexion and extension resistances adjust automatically depending on the forces acting on the knee system. For example, stance phase flexion resistance is dependent upon the movements of the user, the ground as well as the upward and downward gradient.

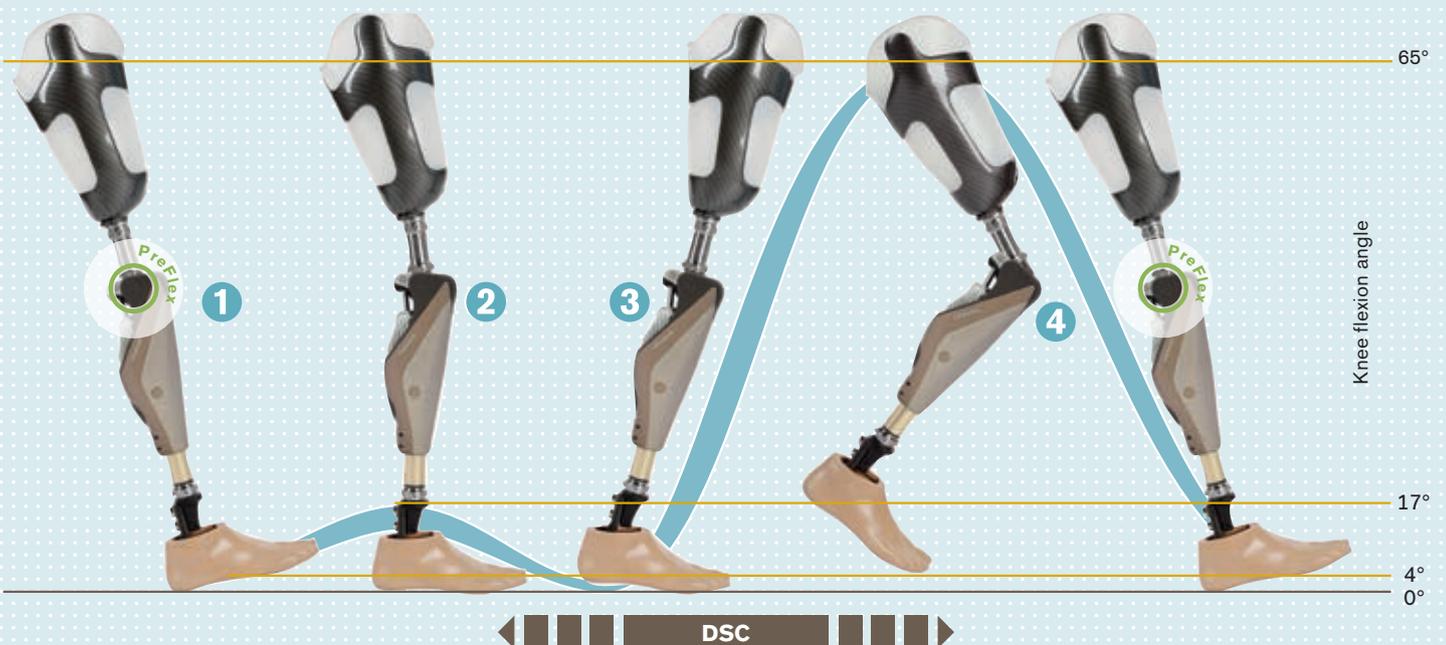
3 Dynamic Stability Control (DSC)

The critical moment in the gait cycle occurs when the stance phase changes to the swing phase and vice versa. The switching point is determined using an innovative and patented method for monitoring all movement situations – precisely, down to $1/100$ of a second. DSC recognises when the user is walking backwards, in which case the swing phase does not need to be initiated. It also detects when the user takes on or is relieved of a load due to heavy objects or walking aids.

4 Adaptive Swing Phase Control

The lower leg pendulum movement is precisely regulated to 65° of flexion – regardless of the walking speed. If the user walks slowly, ground clearance is increased; if they walk quickly, this feature prevents over-swinging to the rear and delayed swinging to the front. Walking is more efficient and physiological. The control system is also key in preventing falls in critical situations.

OPG - Optimised Physiological Gait



Special freedom

In nearly any situation

Stairs and obstacles function

The stairs and obstacles function is unique in the field of prosthetics. It makes climbing stairs step-over-step possible – with barely any compensating movements. Intuitively and as part of the movement pattern, without any special commands. An innovation that was unthinkable for non-motorised prostheses. With the Genium, barriers like kerbs, obstructions around the house and other everyday tripping hazards can be managed completely naturally.

- For more freedom in everyday life and beyond
- Load relief for the sound limb
- Enhanced safety when weight is placed on the flexed prosthesis



Walk-to-Run function

Walking slowly and then suddenly increasing speed – this situation no longer presents a challenge to the Genium's users. Whether roughhousing with the kids or avoiding hazards – the Walk-to-Run function enables a quick switch from a normal walking pace to running full speed. No need to think about it – just run.



Individually program five MyModes

The user can manage most everyday life challenges using the Genium basic mode.

You can individually program up to five MyModes for special situations. Does your customer like to golf? Set the knee flexion they need for their personal tee. The user can fine-tune the setting on the spot using the Cockpit app. After teeing off, they can reset to basic mode with two clicks and head to the next hole as usual. The large selection of MyModes offers flexibility and independence – not only during training, but also in various situations in the workplace.



The new Genium is weatherproof and thus protected against occasional exposure to water such as rain.

Stance functions

The Genium recognises when weight is placed on it while standing still. For users, this permits a natural distribution of body weight and balanced load – even on inclines and uneven surfaces. The user can now choose between two stance functions. The desired function is set by you as the prosthetist.

Intuitive stance function: The user does not need to consciously activate and deactivate the stance function; both occur intuitively. The user can take the first step from the standing position with the prosthesis side or the contralateral side.

Deliberate stance function: The stance function is initiated by intentionally holding the prosthesis still for just 125 milliseconds. The user ends the stance function deliberately by taking weight off the prosthesis or extending it slightly. This function meets the need for enhanced stability of users with bilateral amputations in particular. It is a new feature of the Genium.

- Considerably more balanced load on the prosthesis: relaxed stance and reduction of postural corrections
- Relief for the prosthesis-side hip joint as well as the contralateral side: reduces strain on the locomotor system and back
- Enhanced stability for bilateral users



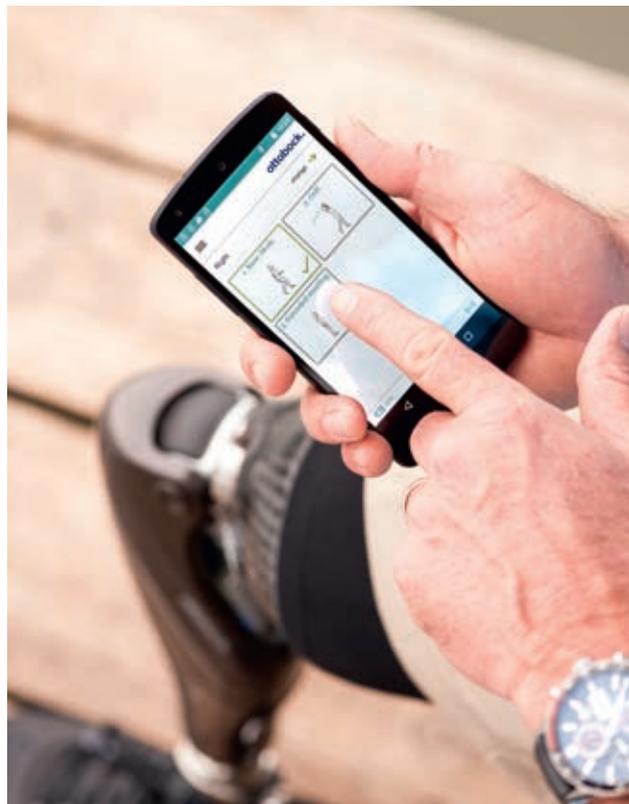
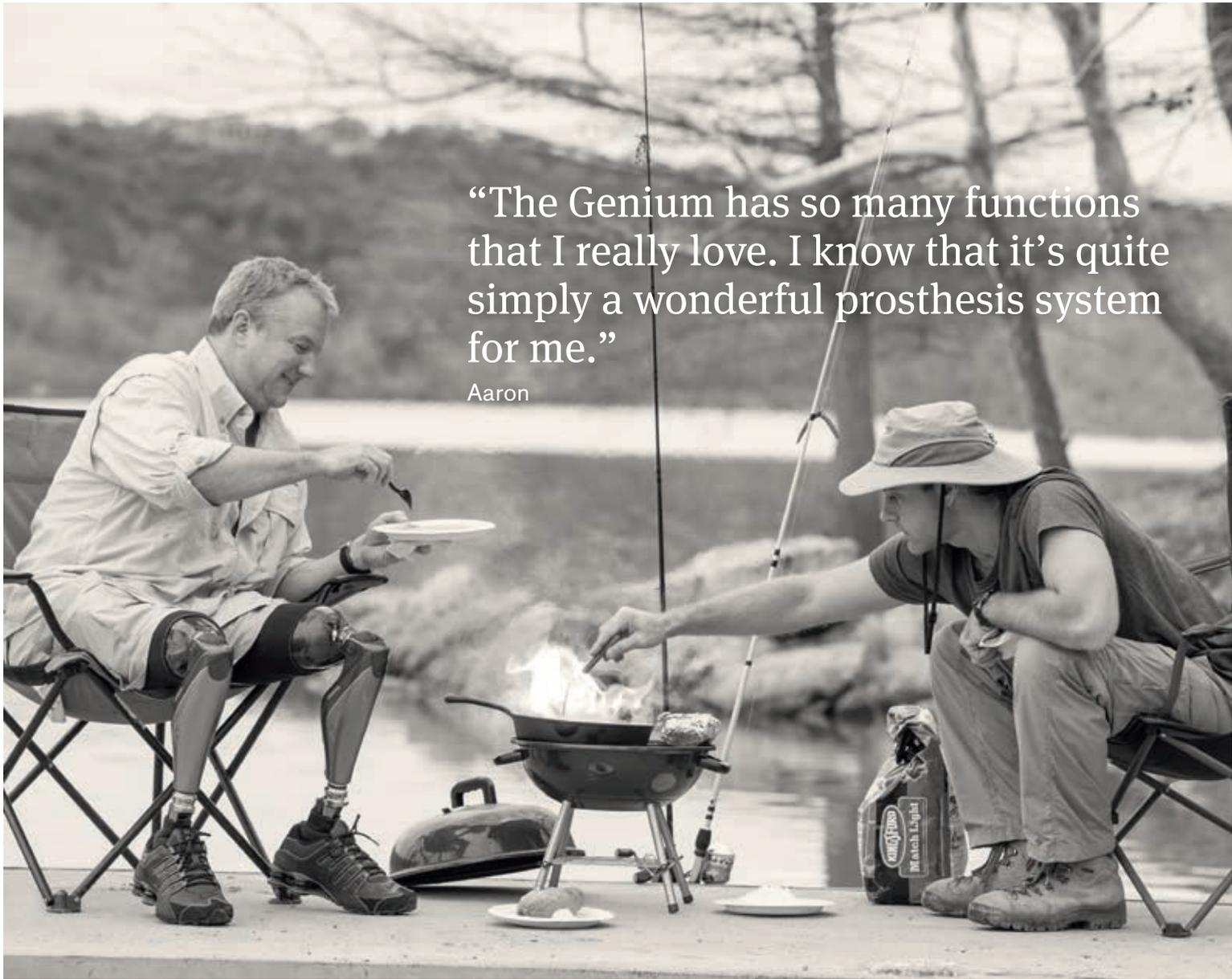
The advantage for bilateral users

During the further development of the Genium, we placed special focus on the needs of people with bilateral transfemoral amputations. Together with bilateral Genium users we developed solutions that meet the need for enhanced stability:

- Slow movements towards the floor, for example when lifting objects, without the knee locking unintentionally (also advantageous when sitting down slowly)
- Intentional stance function: In case of slight jolts, e.g. on public transport, the joint maintains the engaged lock

“The Genium has so many functions that I really love. I know that it’s quite simply a wonderful prosthesis system for me.”

Aaron



The Cockpit app Easy mobile control

With the new Cockpit app for Android devices, the Genium offers a simple option for controlling the joint and activating and deactivating functions like the sitting function. The app also displays other information such as the battery level of the Genium.

Freedom in everyday life

Easy to operate

Smart energy management

The battery life of the new Genium is an **average of five days**. To save even more energy, the knee joint activates the **sitting function** when the user is sitting down: The Genium then switches to a free-swinging position. This not only reserves the battery, but is comfortable for the user in this position as well. The sitting function activates and deactivates intuitively. If the Genium's functions are not currently required, e.g. if the user is sitting or if the prosthesis has been taken off, the user can also select the **deep sleep** mode via the Cockpit app or remote control. The deep sleep mode is simply practical in many situations – and saves energy.

The user does not need to take off the Genium to charge it. The charger can be magnetically docked to the joint at any time, for example at the office. The so-called **inductive charging** function even works through clothing or cosmetic covers.

Switch sounds off with mute mode

Sometimes, receiving feedback through a sound or vibration from the joint isn't desirable – for example at the cinema, theatre, at a lecture or at home when children are sleeping. With the new Genium, **mute mode** can be activated using the Cockpit app or remote control. Only safety-relevant notifications are passed on to the user.

Switching off Bluetooth®

Communication between the Genium and the app and remote control functions via Bluetooth®. The user can also deactivate Bluetooth® if they wish.



Alternatively, the user can control the Genium by remote control, which is available as an optional accessory. In addition, there is always the option of using the rocking pattern to simply and discreetly switch between functions and to obtain information regarding the Genium.



X-Soft and CAA software

High-tech at the workbench



A well-managed overall system plays a significant role in providing a Genium user with a successful fitting. Thanks to individually configurable parameters, you can make the most of the numerous setting options of the Genium – Bionic Prosthetic System here.

The innovative X-Soft software guides you through the alignment, adjustment and coordination of the entire system step by step. Following completion, the Computer Assisted Alignment (CAA) provides a wireless read-out of the Genium's sensors in real-time, evaluates them and provides a graphical representation of the information in the form of force application points and force vectors.

This gives you an inside view of the system, for a customised alignment.

Cable-free adjustment

You can configure the prosthesis system directly using Bluetooth®. This enables you and the user to test various parameters during the fitting and quickly determine the ideal setting.

i If you are already certified to provide Genium fittings, your certification is valid for the new Genium as well.

+ The advantage for you as a technician: the activity report

It is becoming increasingly important for orthopaedic technicians to be able to track and document the individual use of a component. Whether checking the user's progress towards their rehabilitation goals, satisfying reimbursement requirements or optimising service for the relevant prosthesis system.

That's why we developed the activity report and integrated it into the X-Soft software. It is particularly easy to use and simultaneously provides a broad range of information. When the function is activated in the X-Soft software, it records, for example:

- Average number of steps per day
- Average step speed
- Time stamps for walking and sitting and use of the MyModes
- Number of steps on ramps and stairs as well as other values that provide information on negotiating smaller surface irregularities and the use of the OPG function

Genium knee joint

Article no.	3B1-2 3B1-2=9.2	3B1-2=ST 3B1-2=ST-9.2
Proximal connection	Pyramid adapter	Screw-top connector
Distal connection	Tube clamp	
Weight without tube adapter	1,395 g	1,400 g
Prox. system height up to alignment reference point	0 mm	26 mm
Minimum distal system height with 2R20/2R21 AXON tube adapter	298 mm/330 mm	
Maximum distal system height with 2R20/2R21 AXON tube adapter	514 mm/546 mm	
Knee flexion angle	135° without flexion stop*	
Frame material	Carbon	
Moisture protection	Weatherproof	
Mobility grade	2, 3, 4	
Max. body weight	150 kg (330 lbs)	

* Flexion stop reduces the knee flexion angle by 7.5°, 15° or 22°.

AXON tube adapter

Article no.	2R20	2R21 (torsion unit)
Weight	290 g	530 g
Material	Aluminium	Aluminium
Moisture protection	Weatherproof	
Max. body weight	150 kg (330 lbs)	125 kg (276 lbs)

The tube adapter is supplied in a standard length and is cut to size with a pipe cutter by the prosthetist. The correct length of the tube adapter is determined using the X-Soft adjustment software.

Genium Details

Inertial motion unit (IMU)

The gyroscope and the acceleration sensors allow the acceleration and position of the Genium in space to be measured in real time. An angle sensor determines the flexion angle and flexion angle speed of the joint. Prosthesis control is based on movement analysis and additional force measurement.

Knee moment sensor

The knee moment sensor supplies data regarding the knee moments and therefore provides important information for precisely determining the forces acting on the prosthesis.

Carbon fibre frame

In order to withstand the varied demands of everyday life, the frame is made of carbon - an especially strong, high-grade and lightweight material.

Colour options:



Volcano Shadow/Desert Pearl



Hydraulic unit

The hydraulic unit controls the Genium. The flexion and extension resistances are controlled independently of one another by two control valves.

Bluetooth®

Integrated Bluetooth® technology permits straightforward communication with the joint. Bluetooth® can be deactivated if necessary.

Battery and electronics

In the Genium, the battery and electronics are enclosed and protected by the frame. The integrated microprocessor coordinates all measurement and control processes.

Inductive charging

The inductive charger is connected with magnets to the back of the knee joint. This technology permits charging through clothing and cosmetic covers.

Intelligent AXON tube adapter with distal pyramid receiver

The AXON tube adapter measures both the ankle moment as well as the vertical force acting on the joint in real time. The AXON tube adapter can be connected to a foot without a connecting piece.

Warranty and service

The comprehensive warranty package offers your customers guaranteed mobility with no repair costs for 6 years:

- Six-year manufacturer warranty
- Repairs free of charge*
- Free service inspections in month 24 and 48
- Free service unit during the repair and service inspections

Ottobock also offers an optional 3-year warranty package. The warranty can be extended to 6 years at a later date.

* Superficial damage and damage resulting from improper use, intent, negligence or force majeure are not covered.

Genium Protector attractive protection

Visualised knee rotation point

Orientation aid for prosthetic alignment.

Easy to use closure technology

Allows user to put on and take off the main Protector component.

Volumising shape

For a less conspicuous appearance under long clothing.

Opening for inductive charger

Allows for inductive charging even through clothing.

Solid exterior

Specialised protection for the Genium charging unit.

Anatomically moulded knee section

Facilitates kneeling.

Smooth surface

Makes it easier to dress and undress.

Robust main Protector component

Protects the Genium prosthesis system from jolts, the environment and normal wear and tear.

Length adjustment area

Main Protector component can be shortened by qualified personnel.

Anti-slip fabric

Helps keep socks from slipping off.

Innovative foot cuff

Hybrid construction of plastic and fabric offers flexibility and maintains shape.



The Genium Protector shields the Genium against external influences such as scratching and surface contamination. It consists of a main Protector component and a foot cuff. The foot cuff creates a smooth transition between the main Protector component and the footshell and features a high-quality hybrid construction.

A sturdy synthetic material gives it shape while a textile material ensures adequate mobility. This allows the cuff to equalise dynamic loads such as pronounced relative movements very well. Such movements occur between the Protector and footshell of highly functional carbon feet, for example.



reddot design award
winner 2015



Components and accessories

All components and accessories for the Genium – Bionic Prosthetic System have been designed to work together. This interplay is a basic prerequisite to allow your customers to enjoy the maximum benefits of their leg prosthesis system.

Adapters



Flexion stops

Genium knee joint with pyramid adapter



Genium knee joint with threaded connector



Genium protective cover



Inductive charger, power supply, tools, installation ring and remote control



Prosthetic foot



Tools



Ottobock Cockpit app



Bluetooth® PIN card

Information



Components and accessories

Tools



Ottobock Cockpit app



Bluetooth® PIN card

Information



647G1149

Instructions for use



646D460

patient information

Prosthetic foot

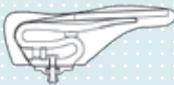
1C63 Triton LP



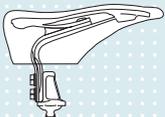
1E57 Lo Rider



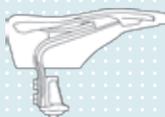
1D35 Dynamic Motion



1C64 Triton HD



1C60 Triton



1C30 Trias



1C61 Triton Vertical Shock



1C40 C-Walk



1C62 Triton Harmony



1E56 Axion



Inductive charger, power supply, tools and remote control

4X350-X3



757L16-3



4E60



4X194



BionicLink PC/X-Soft

4X1* X-Soft



60X5 BionicLink PC



Genium X3 knee joint with pyramid adapter

3B5-2



Genium X3 knee joint with threaded connector

3B5-2=ST



Genium X3 protective cover

4X900



4X193-1



AXON tube adapter

2R19



Adapters

4R118



4R104=60, 4R104=75



4R119



4R57, 4R57=ST



4R40



4R41, 4R43, 4R89



4R11=N, 4R11, 4R116, 4R11=T



4R72=32/45/60/75



Flexion stops

4H104



4H101



4H102



Genium X3 Moving the boundaries



Move naturally and freely with an absolutely robust leg prosthesis system: The Genium X3 opens up possibilities that were unimaginable just a short time ago. The Genium X3 naturally benefits from the further developments to the Genium as well. The greatest strength of the Genium X3 is its resistance to water and corrosion. Selected materials such as titanium, hard anodised aluminium, stainless steel and high-end coatings combined with specially sealed components protect the joint's sensitive sensor technology and electronics. Showering, swimming in the sea, playing with the kids in water or working in wet conditions – there are hardly any limits for the user anymore.

The Genium X3 is based on the Genium. The launch of the Genium in 2011 was a breakthrough. It stands for unique technology that enables nearly natural movement for users.

Genium: Turn the brochure to read more.



Special functions:

- Choice between two extra-robust protective covers, which easily withstand even high demands
- Special running mode for sports
- Water and corrosion resistant
- (tested according to IP68 in a water depth of 3 metres for 60 minutes)





Quality for life

Reclaim all you want to be.
Genium X3

otobock.