



Echelon^{VAC}

Exceptional control and comfort

Blatchford



“As an amputee, socket security is one of the most important things.” Charlie

Echelon^{VAC}

Optimal socket connection is critical to an amputee's comfort, security and stability. By pairing Biomimetic Hydraulic Technology with an elevated vacuum system, the design of EchelonVAC works to create a secure and comfortable socket connection.

Energy Absorption
Hydraulics absorb energy to minimise tissue stress

Self-alignment
To fine tune joint position for improved posture, gait symmetry and reduced socket interface stress

Adjustment and control
Fine tuned to the user's requirements

Viscoelastic
Using both spring and damper to reduce the rate of loading and removing force from the system and therefore the limb

Biomimetic Design



Relative movement is a major issue for amputees and can lead to:

Rubbing/chafing

=



Potential skin breakdown

Pistoning

=



Increased risk of falls and reduced gait symmetry

Reduced proprioception

=

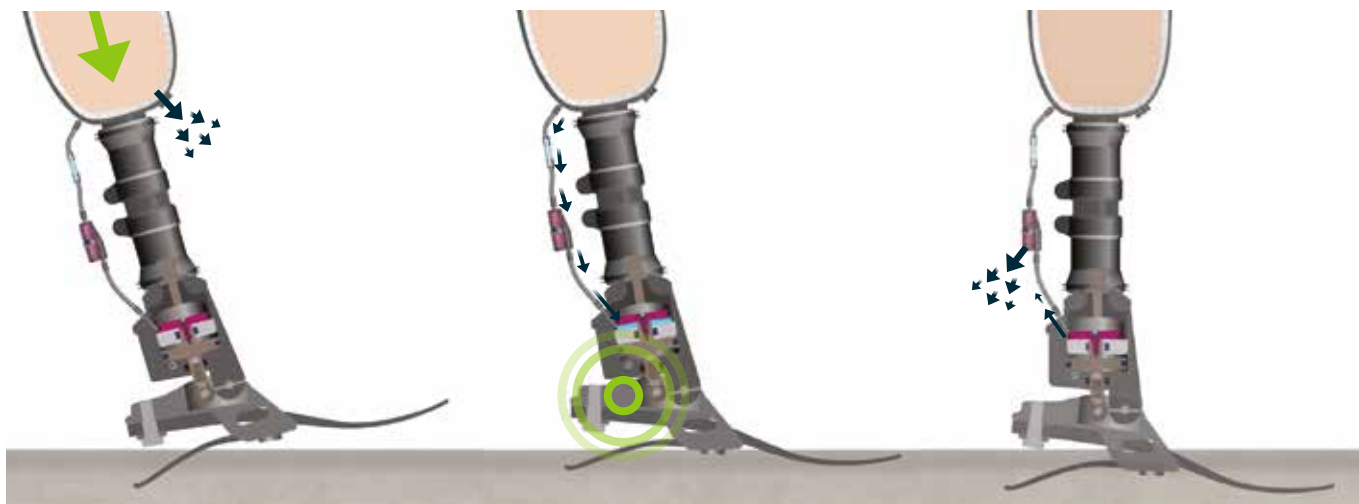


Less control, compromised safety

By harnessing natural ankle motion, EchelonVAC quietly creates elevated vacuum, helping to maintain an optimally fitting socket throughout the day.

With every step, the wearer presses their weight into the prosthesis, initially expelling air through a one-way valve. Simultaneously the ankle plantarflexes, actively drawing air out of the socket. This air is held in the vacuum chamber and expelled through a secondary one way valve as the tibia progresses and the ankle dorsiflexes.

The result is greater residual limb volume control and an improved connection between the residual limb and the socket. For the user, this reduces relative movement, improving proprioception and control of the prosthesis for greater comfort and safety every day.



A person wearing a bright blue t-shirt and dark shorts is sitting on a wooden bench outdoors. Their right leg is a prosthetic, and they are wearing a red and black athletic shoe. The background is a blurred green landscape.

“It’s had
a great impact
on my day-to-
day life.”

Charlie



Innovative Design

The innovative design of EchelonVAC is **lightweight** and has a **low build height** as no external power source is required.

With **no batteries** or **pump** to worry about, EchelonVAC is **quiet** and **easy to fit**.

When used in conjunction with a Silcare Breathe liner, the vacuum is applied directly to the residual limb to further enhance the connection between the limb and the socket.



The Evidence

Active vacuum systems help to stabilise residual limb volume to improve socket stability and proprioception. Scientific studies* have shown that elevated vacuum systems help to:

- Reduce volume fluctuation ¹
- Reduce interface pressures ²
- Improve wound healing ³
- Reduce pistoning ⁴⁻⁷
- Improve gait symmetry¹, balance⁸ and reduce risk of falls ⁹
- Greater comfort and improved overall satisfaction ¹⁰⁻¹¹

*Please refer to the back cover for further details.

Echelon^{VAC}

Features

- Biomimetic Hydraulic Technology with integrated elevated vacuum
- No power required, quiet gentle operation
- Lightweight, compact design
- Low build height
- E-carbon springs for efficient energy return
- Split toe design for ground compliance on uneven terrain
- Weatherproof - suitable for outdoor use
- Sandal toe footshell

Technical Information

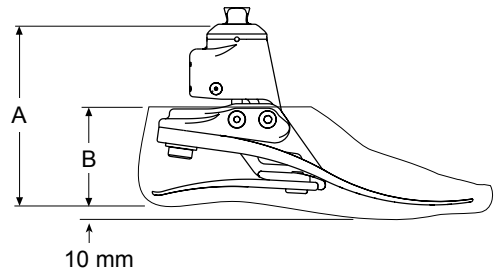
- **Maximum User Weight:** 125kg
- **Activity Level:** (2), 3, (4)*
- **Component Weight:** 930g[†]
- **Maximum Vacuum:** 17" Hg
- **Build Height:** Sizes 22-24: 121mm
Sizes 25-26: 126mm
Sizes 27-30: 131mm
- **Heel Height:** 10mm



Order Example

Product Code	Size	Side	Width*	Spring Set	Sandal Toe
EVAC	25	L	N	3	S

*For sizes 25-27 only.
For dark tone add suffix D.
Example: foot size 25, left, narrow, spring rating 3, sandal toe.



Size	A	Size	B
22-24	121 mm	22-26	65 mm
25-26	126 mm	27-28	70 mm
27-30	131 mm	29-30	75 mm

Spring Set Selection

Activity	User Weight								Foot Spring Set
	44-52 (100-115)	53-59 (116-130)	60-68 (131-150)	69-77 (151-170)	78-88 (171-195)	89-100 (196-220)	101-116 (221-255)	117-125 (256-275)	
3	1	2	3	4	5	6	7	8	

*Dependent on local reimbursement guidelines. May not be suitable for running or high impact activities.
†Component weight shown is for a size 26cm without footshell.

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Patent numbers; US8308815, GB2536056 App, EP2124843 App, EP2124842 App, US8574312, US7985265, US8740991, US8641780, JP5336386, JP5560045, WO 2007/054736, WO 2008/071975, WO 2008/103917



An annual visual inspection is recommended. Check for visual defects that may affect proper function. Maintenance must be carried out by competent personnel. Before carrying out any new activities of daily living, please check with your clinician whether specific training is required.

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