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The echelonVT

The unique prosthetic foot with four degrees of freedom



Example

ECVT25L 5 2 *For dark tone add suffix D

Size side Spring set Axial spring

Foot example: echelonVT, size 25 left, spring rating 5

Max. Amputee weight: 100kg / sizes 22-24
125kg / sizes 25-30

Activity level: 3

Size range: 22cm-30cm

Component weight: 800g*

Build height: 168mm sizes 22-24
173mm sizes 25-26
178mm sizes 27-30

Heel height: 10mm

Fitting Instruction: 938315
**Component weight shown is for a size 26cm without footshell*



Selection

Activity	User Weight								kg lbs
	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	Foot spring set

Size 25-30 only

- ◀ Axial shock spring rate indicated as shown
- ◀ Axial spring

Users at Level 2 and 4 activity who would benefit from this foot will require softer or stiffer springs as appropriate for the individual.

Spring set recommendations are for trans-tibial users. For trans-femoral we suggest selecting a spring set one level lower.

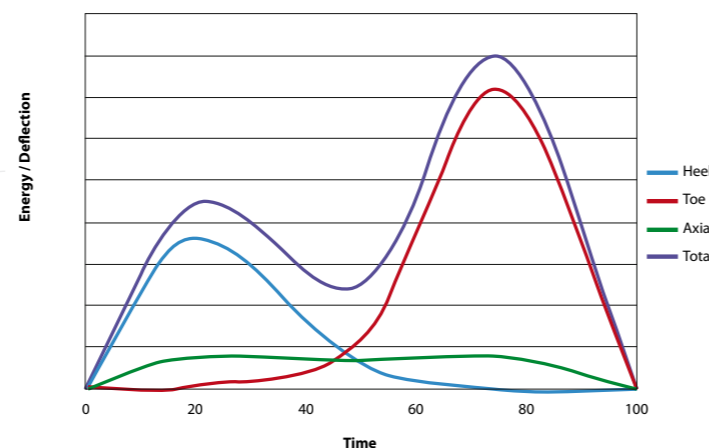
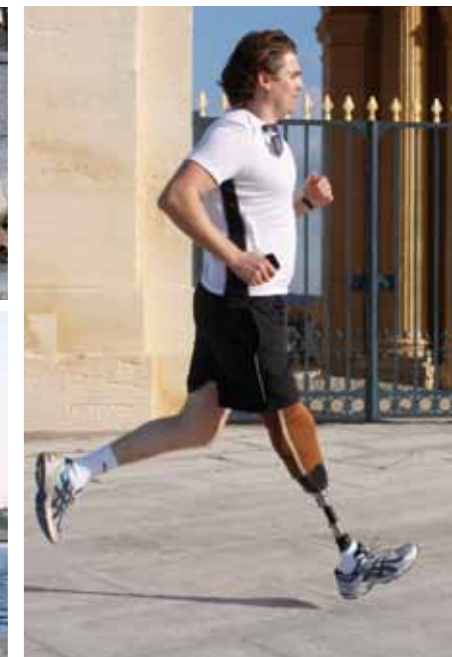




The echelonVT has 4 degrees of freedom.

The Echelon VT allows movement at the ankle in all 3 rotational directions as well as allowing axial compression.

1. The fluidity of the hydraulics provides a smooth comfortable progression from heel strike to toe off and ensures that the toe is raised during swing phase for improved ground clearance. The hydraulic ankle unit promotes postural symmetry regardless of terrain.
2. The e-Carbon heel and toe springs conform to the terrain and provide the power for an energy efficient toe off.
3. The efficient, axial coil spring ensures a comfortable heel strike and then returns the energy to enhance toe-off response.
4. The titanium coil spring also absorbs rotational shear forces that might otherwise irritate the skin or proximal joints and allows the user to pivot naturally over the foot when turning or taking a shot on the golf course.



echelonVT foot elements deflection graph

echelonVT elements

In designing a foot with several degrees of movement it is crucial to incorporate a unifying element so that the transition from one plane to another is seamless and smooth. This design combines the responsive function of two eCarbon foot springs and a high spec. titanium coil spring with a hydraulic ankle.

The echelonVT deflection graph shows the combined activity of the mobile elements of the foot during stance phase. The heel and toe springs show energetic forward progression and the continuous activity of the axial spring ensures shear force attenuation and comfort. The hydraulic ankle smoothes out the transition from one spring action to another, creating a natural interaction between the body and the foot.

User Perspective

Architectural Designer, Lee Boxall, in Montpellier for a site visit to Zaha Hadid's iconic Pierres Vives Building, is interested in how manmade objects interact with the topography and the environment. "The concepts underlying Hadid's designs show a strong interaction with the natural environment and work in synchronicity with their surroundings and functional requirements."

Lee's interest is more than simply work related. He uses an echelonVT prosthetic foot and considers the interaction between his body, the foot and the terrain as a microcosm of how a large scale building works. The elegance of the design must incorporate the full freedom of movement to allow fluid motion whether he's striding across a building site or going for a run through the nearby park.

endolite energy management system:

Energy efficient gait requires an energy management system with an optimised alignment. The synergy between the various spring elements maximises and smoothes the transfer of energy for an excellent overall performance.

