

allard
Support for better life!

Discover Meracus®

100% composite design for
a seamless gait experience

Pure composite
Pure motion



Pure composite. Pure motion.

Meracus® – a new prosthetic foot from Allard

Looking for the best for your patients? With Meracus® you can offer them the opportunity to move smoothly with balanced energy return with every step they take.

Introducing Meracus®, brought to you by the dedicated team behind the Allard AFO. This unique prosthetic foot is custom-crafted from 100% composite materials, free from metal joints or extraneous components. The pure composite design combined with a rocker heel and toe facilitate a smooth transition from heel strike to toe-off, ensuring a fluid, natural and confident stride.

Let your patients experience a seamless gait with Meracus® and join us in our mission to provide Support for Better Life!





We know composite technology

At Allard we have nearly three decades of experience with producing functional dynamic orthotics from composite materials, also commonly used in aerospace, civil and military engineering, and motorsports. Our expertise in composite materials and processing techniques allows us to enhance both manufacturing efficiency and quality. With our unique competence of combining carbon and glass fibers of various functionality, we are able to craft composites of the highest standard and target specific mechanical properties in our materials. Mastering the art of lay-up and fiber selection gives our designers great freedom to shape products for optimal function. Our state-of-the-art facility employs the latest manufacturing techniques and equipment, and we have a fully equipped QA laboratory to ensure the highest product quality. By eliminating voids in the laminates, which can negatively impact mechanical properties, we have significantly improved our products over time.

Today, all our composite products are made using 100% renewable energy. Our commitment to continuous improvement ensures that we will develop even better products in the future. Our expertise and experience in composites and orthotic products have enabled us to confidently develop and launch an innovative new prosthetic foot.

Meracus® – a prosthetic foot for everyday activities

Meracus® is a dynamic response foot that features a low build height, J-shaped keel, extended heel lever, roller shape, and a unique innovation to join the heel and keel together, made from 100% composites. The Meracus® foot's dynamic properties simulate the anatomical foot by providing shock absorption during heel strike, a smooth transition to a stable stance phase, a smooth roll-off of the forefoot and an efficient energy return during push-off.

Meracus® is well suited for individuals with the ability, or potential, for ambulation with variable cadence. Typical of the community ambulator who has the ability to traverse most environmental barriers and may have therapeutic or exercise activity that demands prosthetic utilization beyond simple locomotion.

Meracus® contributes to:

- a smooth and natural walking motion throughout the gait cycle
- support and comfort while standing
- active everyday life due to its versatile features

Meracus® is tested to the latest product safety standard, our foot meets the requirements of ISO 22675.

- Lightweight
- Dynamic
- Adapts to terrain



100% composite design for a seamless gait experience

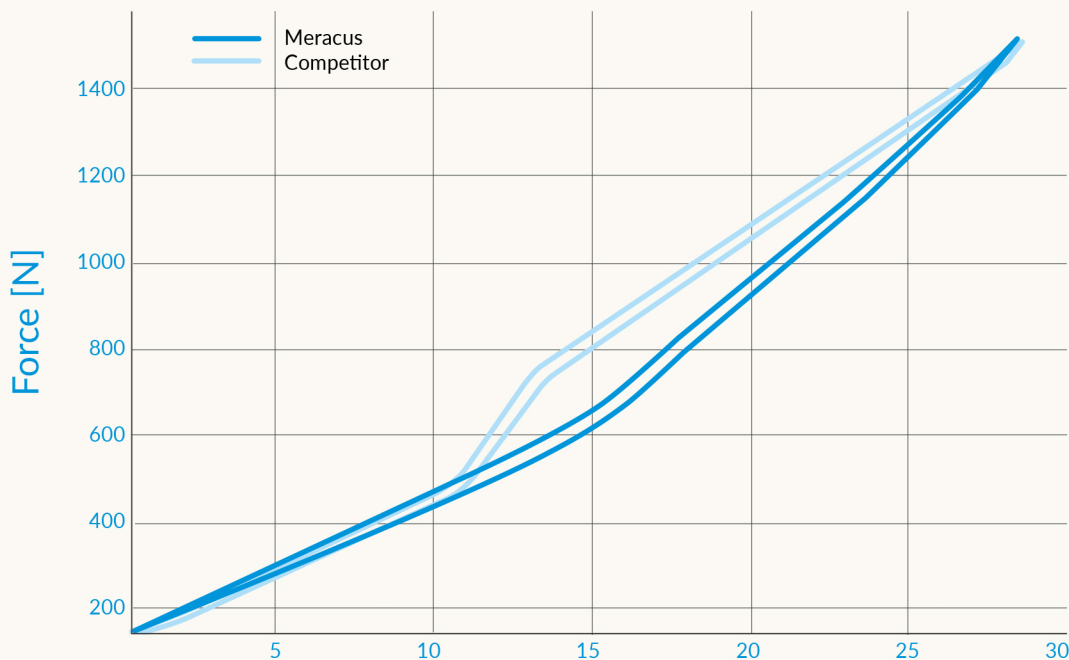
A prosthetic foot should mimic the actions of the human foot and ankle in all phases of the gait cycle. Meracus® is designed to optimize the walking pattern throughout the gait cycle. With our unique recipe and innovative design, Meracus® provides a seamless gait experience.

Hybrid composite technology

- From the attachment to the toe, the composite design of Meracus® offers a smooth transition and improved dynamic response.
- The lay-up of composites is designed to maximize function and support throughout the gait cycle.
- The heel and keel are joined with composite rivets, a new patent pending innovation that eliminates metal fasteners for improved flexibility and strength.

A smooth and confident walk with 100% composite design

Forefoot loading and unloading



Mechanical tests show that metal fasteners can result in a stiffer product at the forefoot area. With our composite rivet technology, Meracus® presents a deflection that is evenly distributed throughout the forefoot.

A man with a prosthetic lower leg is walking on a rocky path in a forest. He is wearing a blue long-sleeved shirt, a black quilted vest, dark blue pants, and grey New Balance sneakers. He is looking down and to the left. The background consists of tall, thin trees and a clear sky.

*"So soft and flexible,
feels like my own foot!"*

— 53-year-old lower leg amputee

Design innovations for flexibility and stability throughout the gait cycle



Extended heel lever design

Flexible J-shape keel

Loading response

Normally the shock absorption is done by a slight knee flexion, a controlled ankle plantar flexion and a subtalar valgus. For a person with a transtibial (below knee) amputation, the prosthetic foot must act as the two latter. At initial contact, the heel section of the prosthetic foot is deflected upwards.

The relatively long lever arm on the Meracus® heel plate accomplishes a deflection of about 10 mm for a person weighing 70 kg (154 lbs). This deflection pulls the forefoot down towards the ground, enabling the shock absorption and a stable weight bearing and initiates the tibial progression over the foot.

Midstance

When the center of gravity moves forward the deflected heel is restored and pushes the keel forward allowing for tibial progression. When the heel and keel are in total contact the keel starts its deflection and the ankle dorsiflexes. The resistance in the material controls the movement of the lower leg.



Low profile design

Dynamic roller shape

Terminal stance

The keel continues to compress when the center of gravity passes through the ball of the foot. The geometry of this area is very much inspired by the Allard AFO, ensuring a natural and smooth roll-over at terminal stance.

The compression of the keel - about 25 mm for a person weighing 70 kg (154 lbs) - will load the keel with energy which will be released during pre-swing.

Pre-swing

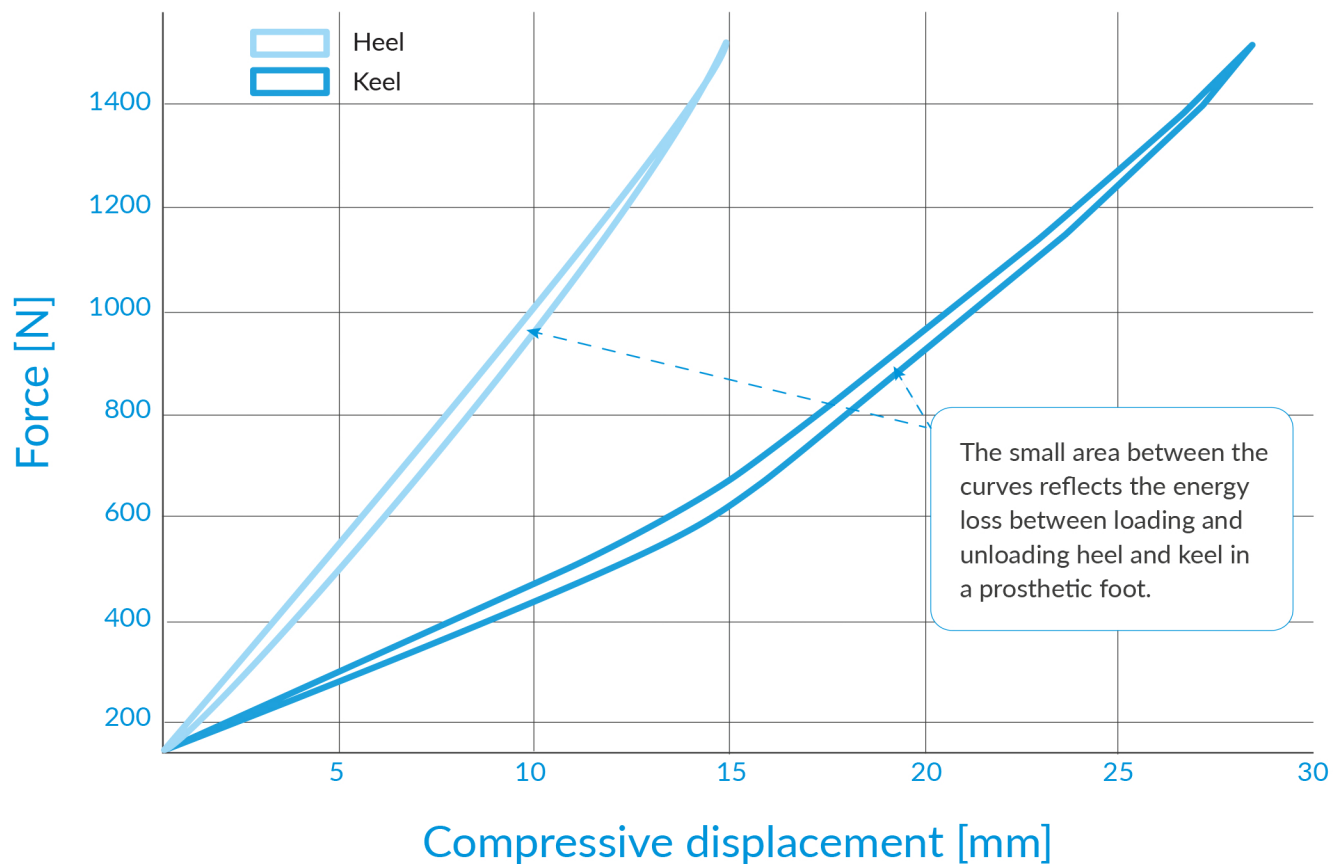
When unloading the dorsiflexed (compressed) forefoot, the foot releases the energy and contributes to push-off the limb into the knee flexion needed for toe clearance during swing phase.

Effortless movement with over 95% energy return

Meracus® provides an energy return well above 95% (heel ~98%, keel~97%), empowering the user throughout gait. It is well established that the lack of functional ankle musculature in persons with lower limb loss reduces ankle push-off and can decrease walking performance^{1,2}. An energy-storing prosthetic foot will assist the foot from heel-strike to midstance and provide push-off at terminal stance, mimicking a healthy foot during walking.

The geometry and lay-up in Meracus® score high in functional energy return. By closing the gap of energy loss between loading and unloading, Meracus® brings dynamics to gait.

Energy Return



¹ Hashim A. Quraishi, Max K. Shepherd, Leo McManus, Jaap Harlaar, Dick H. Plettenburg and Elliott J. Rouse; A passive mechanism for decoupling energy storage and return in ankle-foot prostheses: A case study in recycling collision energy. *Wearable Technologies* (2021), 2, e9

² Ava D. Segal, Karl E. Zelik, Glenn k. Klute, David C. Morgenroath, Michael E. Hahn, Michael S. Orendurff, Peter G. Adamczyk, Steven H. Collins, Arthur D. Kuo and Joseph M. Czerniecki; The effects of a controlled energy storage and return prototype prosthetic foot on transtibial amputee ambulation. *Hum Mov Sci.* 2012 August; 31(4): 918-931



Product selection

Selection chart

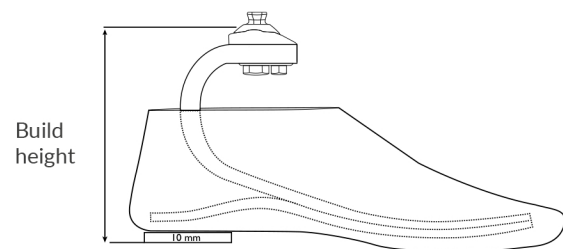
Weight, kg	≤60	≤80	≤100	≤125	≤150
Weight, lbs	≤139	≤179	≤224	≤275	≤326
Size 23	23P3	23P4	23P5	-	-
Size 24	24P3	24P4	24P5	24P6	-
Size 25	25P3	25P4	25P5	25P6	25P7
Size 26	26P3	26P4	26P5	26P6	26P7
Size 27	27P3	27P4	27P5	27P6	27P7
Size 28	-	28P4	28P5	28P6	28P7

Size	Build height (mm)
23	133
24	133
25	140
26	140
27	144
28	144

Our selection chart is based on testing at each weight level. If a stiffer foot is preferred, you may move up one weight category.

Example:

26P4	→	26P5
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Meracus® is Patent Pending

Item No.	Model	P-level	Size
29000	Meracus® Prosthetic Foot	P3-P7	23-28
29002	Meracus® Foot Shell	-	23-28
29006	Spectra Sock, Black	-	One Size

Scan or click for a complete list of item numbers.



SIZE CHARTS AND PRODUCT CODES

BEIGE Prosthetic Foot Kits (Comes with 1 prosthetic foot; 1 foot shell; 1 sock)

LEFT	WEIGHT < 139 LBS	WEIGHT < 179 LBS	WEIGHT <224 LBS	WEIGHT <275 LBS	WEIGHT <326
23	FOOTP323BEI-LPK	FOOTP423BEI-LPK	FOOTP523BEI-LPK	N/A	N/A
24	FOOTP324BEI-LPK	FOOTP424BEI-LPK	FOOTP524BEI-LPK	FOOTP624BEI-LPK	N/A
25	FOOTP325BEI-LPK	FOOTP425BEI-LPK	FOOTP525BEI-LPK	FOOTP625BEI-LPK	FOOTP725BEI-LPK
26	FOOTP326BEI-LPK	FOOTP426BEI-LPK	FOOTP526BEI-LPK	FOOTP626BEI-LPK	FOOTP726BEI-LPK
27	FOOTP327BEI-LPK	FOOTP427BEI-LPK	FOOTP527BEI-LPK	FOOTP627BEI-LPK	FOOTP727BEI-LPK
28	N/A	FOOTP428BEI-LPK	FOOTP528BEI-LPK	FOOTP628BEI-LPK	FOOTP728BEI-LPK
RIGHT	WEIGHT < 139 LBS	WEIGHT < 179 LBS	WEIGHT <224 LBS	WEIGHT <275 LBS	WEIGHT <326
23	FOOTP323BEI-RPK	FOOTP423BEI-RPK	FOOTP523BEI-RPK	N/A	N/A
24	FOOTP324BEI-RPK	FOOTP424BEI-RPK	FOOTP524BEI-RPK	FOOTP624BEI-RPK	N/A
25	FOOTP325BEI-RPK	FOOTP425BEI-RPK	FOOTP525BEI-RPK	FOOTP625BEI-RPK	FOOTP725BEI-RPK
26	FOOTP326BEI-RPK	FOOTP426BEI-RPK	FOOTP526BEI-RPK	FOOTP626BEI-RPK	FOOTP726BEI-RPK
27	FOOTP327BEI-RPK	FOOTP427BEI-RPK	FOOTP527BEI-RPK	FOOTP627BEI-RPK	FOOTP727BEI-RPK
28	N/A	FOOTP428BEI-RPK	FOOTP528BEI-RPK	FOOTP628BEI-RPK	FOOTP728BEI-RPK

Brown Prosthetic Foot Kits (Comes with 1 prosthetic foot; 1 foot shell; 1 sock)

LEFT	WEIGHT < 139 LBS	WEIGHT < 179 LBS	WEIGHT <224 LBS	WEIGHT <275 LBS	WEIGHT <326
23	FOOTP323BRN-LPK	FOOTP423BRN-LPK	FOOTP523BRN-LPK	N/A	N/A
24	FOOTP324BRN-LPK	FOOTP424BRN-LPK	FOOTP524BRN-LPK	FOOTP624BRN-LPK	N/A
25	FOOTP325BRN-LPK	FOOTP425BRN-LPK	FOOTP525BRN-LPK	FOOTP625BRN-LPK	FOOTP725BRN-LPK
26	FOOTP326BRN-LPK	FOOTP426BRN-LPK	FOOTP526BRN-LPK	FOOTP626BRN-LPK	FOOTP726BRN-LPK
27	FOOTP327BRN-LPK	FOOTP427BRN-LPK	FOOTP527BRN-LPK	FOOTP627BRN-LPK	FOOTP727BRN-LPK
28	N/A	FOOTP428BRN-LPK	FOOTP528BRN-LPK	FOOTP628BRN-LPK	FOOTP728BRN-LPK
RIGHT	WEIGHT < 139 LBS	WEIGHT < 179 LBS	WEIGHT <224 LBS	WEIGHT <275 LBS	WEIGHT <326
23	FOOTP323BRN-RPK	FOOTP423BRN-RPK	FOOTP523BRN-RPK	N/A	N/A
24	FOOTP324BRN-RPK	FOOTP424BRN-RPK	FOOTP524BRN-RPK	FOOTP624BRN-RPK	N/A
25	FOOTP325BRN-RPK	FOOTP425BRN-RPK	FOOTP525BRN-RPK	FOOTP625BRN-RPK	FOOTP725BRN-RPK
26	FOOTP326BRN-RPK	FOOTP426BRN-RPK	FOOTP526BRN-RPK	FOOTP626BRN-RPK	FOOTP726BRN-RPK
27	FOOTP327BRN-RPK	FOOTP427BRN-RPK	FOOTP527BRN-RPK	FOOTP627BRN-RPK	FOOTP727BRN-RPK
28	N/A	FOOTP428BRN-RPK	FOOTP528BRN-RPK	FOOTP628BRN-RPK	FOOTP728BRN-RPK

Foot Shells

SIZE	FOOT SHELL BEIGE LEFT	FOOT SHELL BEIGE RIGHT	FOOT SHELL	FOOT SHELL BROWN RIGHT
23	290021023	290022023	290031023	290032023
24	290021024	290022024	290031024	290032024
25	290021025	290022025	290031025	290032025
26	290021026	290022026	290031026	290032026
27	290021027	290022027	290031027	290032027
28	290021028	290022028	290031028	290032028

Sock

SIZE	SPECTRA SOCK
UNIVERSAL	290060000
27	290021027
28	290021028

Support for Better Life

Everyone should be able to live their life to the fullest, regardless of their mobility challenges. With innovative solutions developed in close collaboration with healthcare professionals and patients, we strive to provide Support for Better Life.



Available in Canada exclusively from:

Professional Orthopedic Products

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