Avior

Confidence in every moment

Talk to us today on 01256 316600
www.blatchfordmobility.com

Blatchford
Mobility Made Possible

Avior

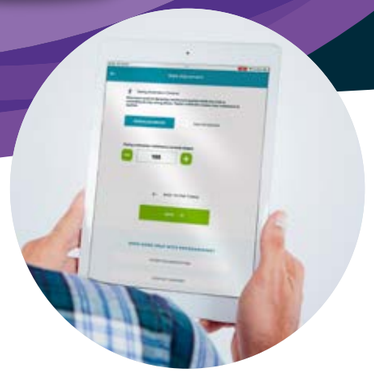
Redefining what's possible

Meet Avior – our next-generation microprocessor-controlled knee that's redefining mobility for lower activity individuals. Perfect for new amputees, Avior delivers stability, safety[1], and a smooth walking experience, all powered by our groundbreaking biomimetic design philosophy. Then as wearers improve and grow in confidence, watch Avior evolve with them.

SMARTSTEP®
With you every step of the way

Featuring our exclusive **SMARTSTEP®** technology, Avior showcases Blatchford's revolutionary digital care management platform. This cutting-edge platform not only enhances patient outcomes but also simplifies care delivery, making it a true leap forward in prosthetic technology.

Learn more about Avior:



Easy To Set Up With Three Base Configurations

Quick and intuitive to set up, simply download our new **SMARTSTEP®** app, which guides you step by step through the programming sequence. In just 10 minutes, Avior is ready to go!

Select the base configuration that best suits your wearer:

- LOCK-LOCK
- LOCK-FREE
- YIELD-FREE

Fine Tune And Customise Key Features And Settings

Once the device is programmed, additional features can be fine-tuned to deliver optimal levels of resistance, maximising comfort, safety, and confidence for every wearer. These include:

- Stance Flexion
- Swing Extension Control
- Standing Support
- Dynamic Slope and Stairs Descent
- Supported Standing and Sitting

Connecting Prosthetists And Physios For Better Outcomes (COMING SOON)

Our new **SMARTSTEP®** app will soon be accessible to Physios. Allowing them to adjust the device's base configurations during physio sessions, supporting wearers in a safe environment as their mobility changes.

Physios will also be able to video record activity sessions with wearers, which get logged against the device record so prosthetists can review at their convenience, or during the next prosthetic appointment.

Aids Rehabilitation In Between Clinic Sessions

Avior, powered by our **SMARTSTEP®** technology, enables remote monitoring of device usage statistics, including walking, sitting, and standing. This provides valuable insights into a wearer's functional abilities and progress over time.

For remote support or troubleshooting, wearers can securely record and share videos, data and any issues they encounter in their own environment via the **SMARTSTEP®** app, ensuring seamless communication with their prosthetist.*

*Wearers must download the Blatchford **SMARTSTEP®** app to sync device data. Wearers need to connect to their Avior device as often as possible.

Easily Adaptable To The Wearer's Needs

Avior can be adapted to suit a range of functional abilities, whether the wearer starts out in a wheelchair or is a more confident ambulator.

As the wearer's confidence evolves, settings on Avior can be adjusted up or down at any time providing a truly flexible device.

Designed for Today, Ready for Tomorrow

Thanks to the innovative **SMARTSTEP®** technology built into Avior, firmware updates can be made Over the Air (OTA). This allows clinicians to access updates directly in the clinic without returning the device to the manufacturer. As Blatchford releases new features and functions, clinicians can immediately access them using the OTA functionality.*

*Upon release, only the Blatchford team will be authorised to perform OTA updates.

Meet Avior

Microprocessor technology has been proven to reduce falls and injuries, reducing longer term medical costs.[2,3,4]

1 Bluetooth®

The built-in **Bluetooth®** feature enables easy programming via our new **SMARTSTEP®** app.

2 Adaptor

Fixed pyramid proximal adapter supplied as standard. M36 adapter also available.

3 Knee Pad

Replaceable reinforced knee pad.

4 Knee Angle Sensor

The Avior knee angle sensor is positioned on the knee axis and precisely measures the degree of knee flexion. The software interprets this data and uses it to determine the resistance needed.

5 Carbon Fibre Finish

To meet the diverse demands of everyday life, the frame is crafted from carbon—an exceptionally strong, lightweight, and high-quality material.

6 Hydraulic Unit

The hydraulic cylinder controls the flexion and extension resistances in swing and stance.

7 Inertial Motion Unit (IMU) and Microprocessor

The IMU tracks the limb's position, movement, and speed relative to the ground, while the software interprets this data to control the knee and ensure the wearer is walking safely and to their ability.

The only IP65 rated K2 MPK available.

IP65

Polycentric knee design, knee draws in to match sound limb when seated.

8 Embossed Buttons

Easy-to-locate embossed buttons, designed for intuitive use and accessibility.

9 Battery

Stay powered for longer with up to **48 hours battery life**, ensuring reliable performance.

The convenient battery status indicator keeps wearers informed, and with a quick 4-6 hour recharge time, you're always ready to go.

10 ON/OFF Button

11 Charge Point Cover

12 Magnetic USB A Charging

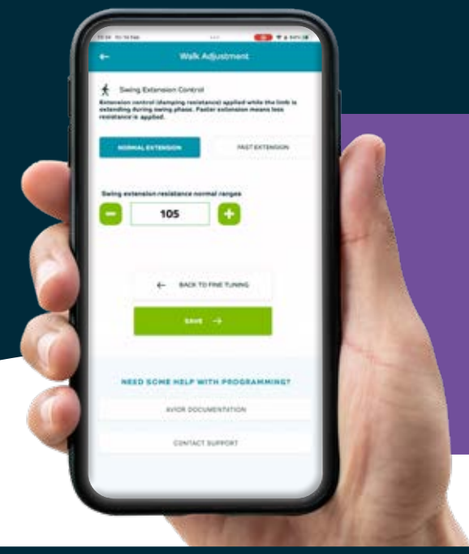
Avior charges using a magnetic USB-A charger, a common charging connection found in most homes, cars and other places, meaning wearers can easily charge their device on the go.

The magnetic charging connection means it is easy for wearers to know when the charger has 'snapped' into place to charge.

Base Configurations

Three baseline configurations to get you started

Programmed with a choice of three base configurations, Avior is designed to support users at every stage of their journey and adapt with them, building confidence as they progress. Each configuration allows for key feature customisation, ensuring an optimal and natural user experience.



SMARTSTEP®
With you every step of the way

Fine-tune and customise key features in our new SMARTSTEP® app

	Overview	Benefits	Stance Flexion	Swing Extension Control	Standing Support	Dynamic Slope and Stairs Descent	Supported Standing	Supported Sit to Stand	Stumble Recovery	Donning Mode	Wheelchair Mode
LOCK-LOCK Locked in stance and in swing phase	The **LOCK-LOCK** Base Configuration is ideal for someone new to or building confidence with a prosthesis. It keeps the knee locked while walking or standing for maximum security but allows controlled sitting. The optional stance flexion function provides shock absorption at heel strike, and cushioning on every step. The wearer will feel more confident walking down slopes without the sensation of falling forward or "vaulting" over their leg.	• Often used as the initial setting during rehabilitation to help build wearer confidence • Allows wearer basic mobility and confidence knowing that the limb will not flex or collapse	Adjust to 0°, 5° or 10°	N/A	By Default - already Locked in Stance	N/A	Ratchet function (lock)	Adjustable Yield Resistance UNIQUE	Yes	Yes	Yes
LOCK-FREE Locked in stance and free in swing phase	As the wearer grows in confidence the Base Configuration can be adjusted to **LOCK-FREE**, keeping the limb locked in stance but free in swing. This allows for a more natural gait, maintains stability and prevents buckling. Stumble Recovery is active, providing safety and confidence if there is a stumble. The Swing Extension Control feature is available in this configuration and regulates the swing speed enabling a smooth, full leg extension after heel rise and offers adjustable speed to match the wearer's needs The optional stance flexion function provides shock absorption at heel strike, and cushioning on every step.	• Helps wearer improve their gait and confidence in walking • Provides the wearer with optimal stability by remaining locked during stance and free during swing	Adjust to 0°, 5° or 10° UNIQUE	Select FAST or NORMAL UNIQUE	By Default - already Locked in Stance	N/A	Ratchet function (lock)	Adjustable Yield Resistance UNIQUE	Yes	Yes	Yes
YIELD-FREE Yields in stance phase, free in swing phase	The **YIELD-FREE** Base Configuration is adopted when the wearer can confidently control their prosthesis in both stance and swing. This configuration further improves their gait. Stumble Recovery is active in this configuration giving wearers safety and confidence if there is a stumble. The Dynamic Slope and Stair Descent Feature allows wearers to safely and smoothly navigate stairs and slopes.	• Walking step-over-step down slopes and stairs • Promotes a more natural gait cycle, reducing excessive forces on the sound limb and improving comfort • Stumble Recovery increases safety, minimising injury from trips and falls	N/A	Select FAST or NORMAL UNIQUE	Knee flexion between 0° - 30° Adjustable timing: Normal/Low/ Very Low UNIQUE	Adjustable Yield Resistance UNIQUE	Ratchet function (lock)	Adjustable Yield Resistance UNIQUE	Yes	Yes	Yes

Functions and Modes

Adaptable settings for a truly personalised experience

Stance Flexion

The Stance Flexion feature allows the knee to flex to a specified angle at the heel strike, absorbing shock and cushioning on every step. It also controls limb extension (damping) during stance flexion. With Avior the amount of stance flexion can be adjusted to suit the wearer and is available in the base configurations LOCK-LOCK and LOCK-FREE.

Benefit:

Stance flexion means walking feels more natural and comfortable as every step is cushioned, reducing shock and strain on the body. This helps the wearer feel more confident walking down slopes without the sensation of falling forward or “vaulting” over their leg.

Swing Extension Control

Swing extension controls the swing speed for a smooth, full leg extension after heel rise. The speed can be adjusted to Fast or Normal to suit the wearer:

- Fast option helps the wearer have a better sense of position and movement of their leg as it rapidly slows down when it’s close to full extension. While it may feel less natural, it provides reassurance of the leg’s position and helps build wearer confidence. This setting is ideal for first-time prosthetic wearers or those new to a free-swing knee.
- Normal option provides less feedback at full extension but in this option the swing resistance can be adjusted.

Benefit:

This feature helps give the wearer confidence and a feeling of control when walking, knowing that their leg is decelerating and when their foot will strike the ground. The control comes from the wearer choosing which swing speed is most comfortable for them.

Standing Support

When standing still, the advanced sensors detect when a wearer is stationary and the standing support feature activates automatically, locking either when the leg is fully straight (full extension) or with a slight knee bend for wearer comfort. This eliminates the need to focus on balance, allowing wearers to stand confidently and securely during everyday activities, whether preparing food, waiting in line, or standing on uneven ground.

Benefit:

Standing support helps gives the wearer confidence, and frees the wearer from worrying about stability, making everyday tasks more manageable and enjoyable.

Dynamic Slope and Stairs Descent

Walking on slopes, uneven terrain or downstairs can be challenging for amputees. Avior helps wearers maintain a steady and controlled pace by increasing flexion resistance as knee flexion increases; this adjusts the walking speed to match the wearer’s needs.

Benefit:

This feature can instil confidence to navigate slopes and stairs; the automatic adjustment of walking speed will ease concerns about balance and control.

Stumble Control

Amputees often face a higher risk of trips and falls, but Avior’s intelligent sensors continuously monitor the wearer’s gait in real-time. Its Stumble Control feature detects and responds to potential missteps, triggering a high-yield reaction to prevent a stumble from turning into a fall and help wearers regain their balance.

Benefit:

Stumble Control gives the wearer confidence to feel safe when walking. The device detects and responds to stumbles giving them confidence as well as preventing them from falling.

Controlled Sitting and Standing

For many, sitting down or standing up requires a level of control and strength that they don’t have. Avior detects the sitting motion and maintains a steady and controlled resistance by increasing flexion resistance, supporting the wearer into their seat. When standing up, Avior’s sensors and high-tech algorithms automatically detect moments of apprehension and, if needed, provide resistance to lower the wearer back into their seat. It also offers a ratchet mechanism which supports the wearer into a standing position.

Benefit:

This provides reassurance that the wearer won’t collapse when lowering to sit or raising to stand. It also enables the wearer to have the strength and balance to sit or stand.

Wheelchair Mode

The wheelchair mode on Avior allows wearers to elevate and lock their limb in a comfortable position, preventing it from catching on the ground. If accidentally knocked, the knee will safely release and slowly descend for added protection.

Benefit:

Being able to elevate the leg makes moving around in a wheelchair easier. There’s no need to worry about the foot catching, and it’s reassuring to know that the knee won’t be damaged if it gets knocked, as it releases.

*Ref: 8637619467 Avior Product & Clinical Evidence

Indications and Contra-indications

Studies show for patients wearing a microprocessor knee there is a strong chance that the wearer will improve their overall activity level.[5,6]

Indications:

- Low activity walkers not exceeding speeds of 2.5mph/4 kmph.
- Primary amputees, who require a high level of safety while walking or standing.
- Those with the physical and mental capacity to perceive visual, auditory or mechanical vibration signals.

Contra-indications:

- Not suitable for Activity Level 3 or Activity Level 4 wearers.
- Not suitable for wearers whose weight and/or activity levels fall outside of the minimum and maximum levels.
- Not for bilateral transfemoral, osseointegrated or transpelvic applications.
- Not suitable for wearers who do not have the cognitive and physical ability to use and operate the device.

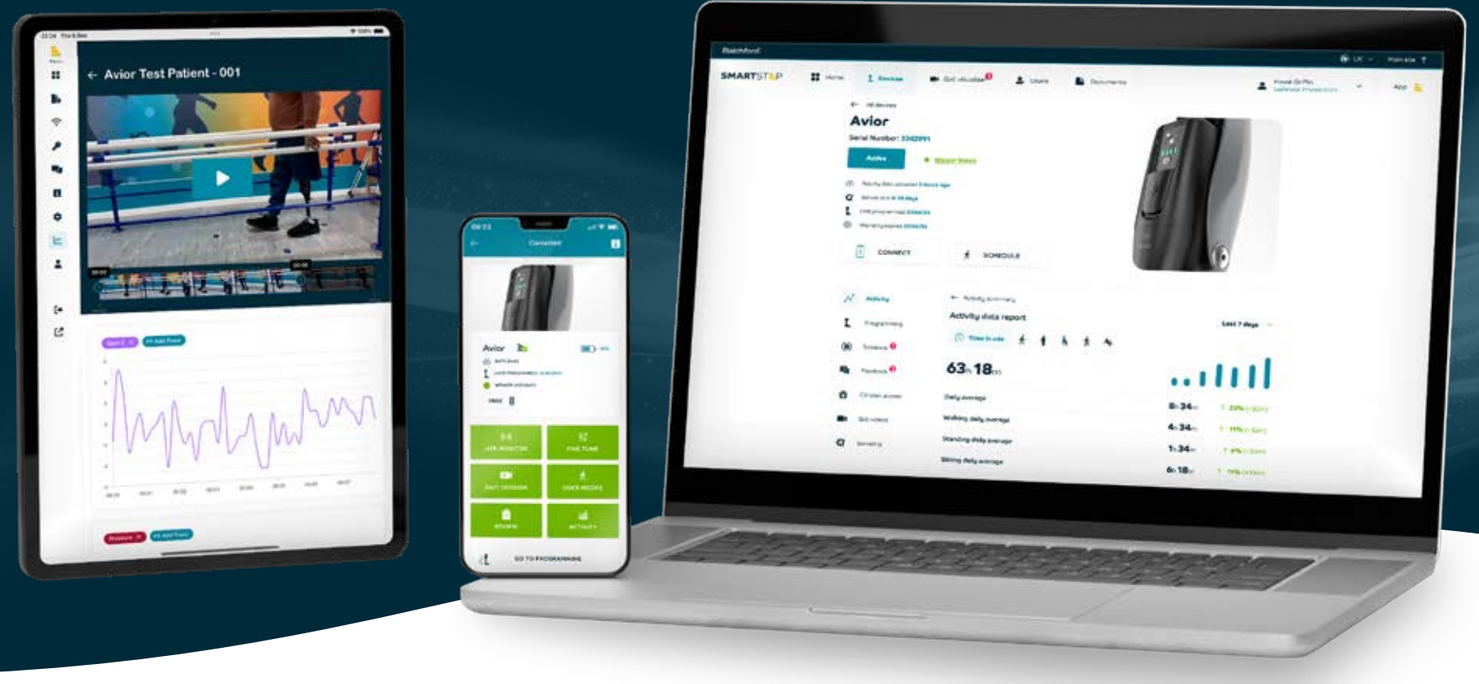
Wearer Criteria

Minimum Wearer Weight	44kg/97lb/6st 9lbs
Maximum Wearer Weight	125kg/275lb/19st 6lbs
Minimum Wearer Height	150cm/4ft 11”
Activity Level	1, 2
Amputation Level	Transfemoral amputation

Introducing SMARTSTEP®

With you every step of the way

SMARTSTEP® – a cutting-edge digital care management platform developed exclusively by Blatchford and built into our prosthetic and orthotic devices. Designed to provide Healthcare Professionals and wearers with access to detailed device data to improve outcomes, reduce rehab times and simplify care delivery.



Find out more:

For Healthcare Professionals

Introducing our new **SMARTSTEP®** platform, now accessible on smartphone, tablet, and desktop. Simply log in using your clinician account and start using the app or portal. **SMARTSTEP®** conveniently shows all device information in one location for ease of use and simplification. Additionally, it offers new features such as our innovative and exclusive Gait Visualiser to aid the fitting process.

GET IT ON Google Play | Download on the App Store

Quick and Easy Programming

Program Avior in just 10 minutes using our new intuitive **SMARTSTEP®** app. Available on both Android and Apple platforms.

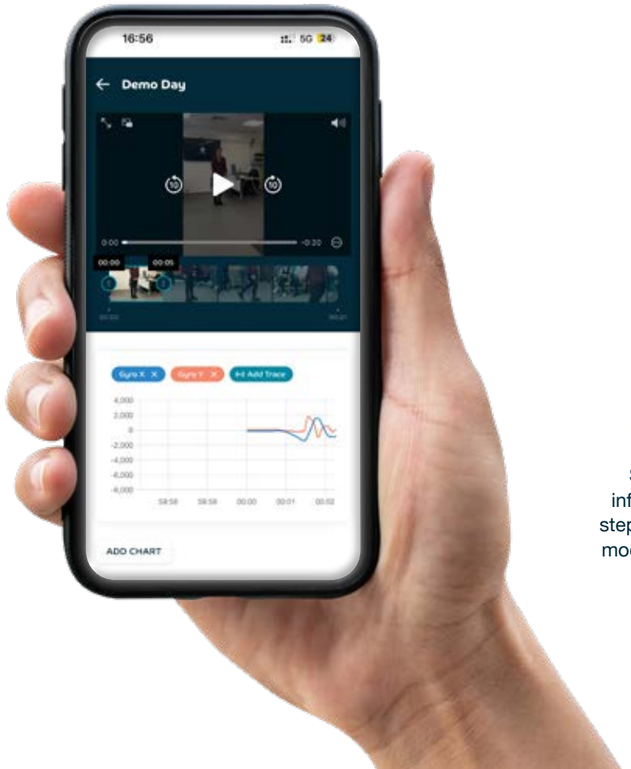
Gait Visualiser

Our innovative and unique Gait Visualiser transforms the fitting process by allowing clinicians to view video recordings of the wearer's movements alongside device sensor data. This enables clinicians to adjust settings to achieve the optimal fit.

The Gait Visualiser also helps clinicians assess a wearer's movements during specific parts of the gait cycle. This allows progress to be tracked over time by comparing recordings. In addition because **SMARTSTEP®** creates time-stamped data, it can support clinical notes, demonstrate medical necessity, and assist with reimbursement claims.

Save and Restore

If a wearer requires a temporary or new device for any reason, **SMARTSTEP®** allows you to restore their device settings from the old to the new device, for quick and easy care.



For Wearers

Bringing Patients and Clinicians closer, **SMARTSTEP®** allows wearers access to their prosthetic device data, and the ability to communicate directly with their prosthetist. Accessed via an Apple or Android device by simply downloading the **SMARTSTEP®** app in the Apple App Store or Google Play Store.

Monitor Device Status

SMARTSTEP® displays essential information like battery charge levels, step counts, and time spent on different modes, ensuring wearers stay informed about their device and activity.

Remote Troubleshooting

Something not quite right? Using **SMARTSTEP's** unique Gait Visualiser, wearers can share recordings of themselves using their prosthetic device with their clinician from the comfort of their own environment.

Clinicians can then view this video alongside selected data points to remotely understand any issues.

Register Their Account

Give wearers peace of mind by allowing them to register their account quickly and easily via **SMARTSTEP®**. With self-registration, they gain direct access to support and important updates - without added administrative burden on your team. This seamless process ensures their device is supported from day one.

Made to Complement

Whether it's weight, cost or build profile, Blatchford offers a range of feet to pair with Avior.

Avalon^{K2}

Suitable for a higher K2 ambulator that has the strength and balance to handle the extra range of motion of the Avalon. Promotes easy rollover and also easier "stand to sit" motion.

- K2
- Stronger wearer
- Full community ambulator that encounters more uneven terrain

Specifications

Maximum User Weight	150kg/ 330lbs/ 23st 6lbs
Activity Level	2
Size Range	22-30cm
Component Weight	780g
Build Height	115mm
Heel Height	10mm
Range of Motion	6° plantar to 6° dorsiflexion

Order Code: AV

780g WITHOUT FOOTSHELL · £ £ £ £ · BUILD HEIGHT 115mm

Esprit

Designed for higher-level K2 users with the potential to progress to K3 ambulation. Offering a lightweight, low-profile solution with high stability and enhanced energy return.

- Mid to high K2
- Lightweight
- Limited build height clearance
- Full community ambulator

Specifications

Maximum User Weight	125kg/ 275lbs/ 19st 6lbs
Activity Level	2-3
Size Range	22-30cm
Component Weight	530g
Build Height	65mm - sizes 22-24 70mm - sizes 25-26 75mm - sizes 27-30

Order Code: ESP

530g · £ £ · BUILD HEIGHT 65-75 mm

Epirus

Suitable for a higher-level K2 user with potential to transition to a K3 ambulator. For wearers who want to navigate uneven terrain, require a lightweight solution, and has limited space for a taller prosthetic foot.

- Mid to high K2
- Lightweight
- Limited build height clearance
- Full community ambulator that encounters more uneven terrain

Specifications

Maximum User Weight	125kg/ 275lbs/ 19st 6lbs
Activity Level	2-3
Size Range	22-30cm
Component Weight	610g
Build Height	85mm
Heel Height	10mm

Order Code: EP

610g · £ £ · BUILD HEIGHT 85mm

Navigator

Ideal for K2 ambulators who require enhanced stability with a smooth and effortless rollover. The Navigator's specially engineered keel supports an easy transition through midstance while maintaining reliable stability.

- K1-K3
- Lightweight
- Stability
- Limited community ambulator

Specifications

Maximum User Weight	125kg/ 275lbs/ 19st 6lbs
Activity Level	1-3
Size Range	22-30cm
Component Weight	565g
Build Height	95mm
Heel Height	10mm

Order Code: NAV

565g · £ · BUILD HEIGHT 95mm

Component weight includes footshell.

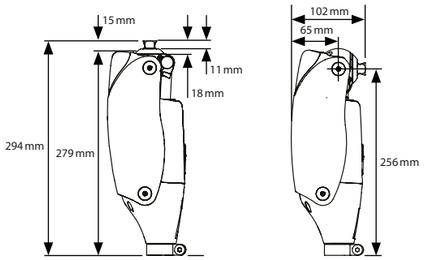
Avior

Confidence with every sweep

Technical Information

Activity Level	K1, K2
Colour	Black
Weight	1.39kg/3lbs 1oz
Build Height	294mm
Proximal Adapter	Fixed Pyramid or M36 Thread
Proximal Alignment Attachment	Male Pyramid (Blatchford)
Distal Alignment Attachment	Ø 30mm Tube clamp connector
Knee Flexion Angle	Max. 130 degrees
IP Rating	IP65
Charging Time	From flat to full charge; Typical 4 hours – Maximum 6 hours
Battery Life	2 days normal use
Charger Type	Magnetic USB A
Device Connectivity	Bluetooth®
Programming App	Android and iOS **SMARTSTEP®** enabled

Build Height



No servicing required for the first 3 years.

Ordering Information	**Part Number**	**Description**
	AVIOR	**Avior MPK**

Accessories	B-0001511	Avior Knee Pad Kit
	B-0001512	Avior Protective Cover
	B-0001513	M36 Adapter Kit
	B-0001514	Flexion Stop Kit
	B-0001515	Clinicians Tool Kit
	B-0001516	USB Charger Cable
	B-0001517	USB Wall Charger With Interchangeable Plug
	B-0001518	Clamp Kit
	B-0001519	Distal Cover Kit
	B-0001507	Avior Accessories Kit (UK)
	B-0001508	Avior Accessories Kit (USA
	B-0001509	Avior Accessories Kit (EU)
	B-0001510	Avior Accessories Kit (AUS)
	B-0001536	Avior Accessories Kit (Universal)
	AVIOR - WARRANTY 6 YEAR (3+3)	Avior 6 Year Warranty

Warranty Information	Standard Warranty Period - 36 months included.
	Servicing within Standard Warranty Period - Not required.
	Extended 3-year warranty - Available to purchase. Must be purchased within first 12 months.
	Full service will be required between 30-36 months if extended warranty purchased.

References

1. 8637619467 Avior Product & Clinical Evidence
2. Kaufman KR, Bernhardt KA, Symms K. Functional assessment and satisfaction of transfemoral amputees with low mobility (FASTK2): A clinical trial of microprocessor-controlled vs. non-microprocessor-controlled knees. Clin Biomech 2018; 58: 116–122.
3. Campbell JH, Stevens PM, Wurdeman SR. OASIS 1: Retrospective analysis of four different microprocessor knee types. Journal of Rehabilitation and Assistive Technologies Engineering. 2020;7:2055668320968476
4. Chen C, Hanson M, Chaturvedi R, et al. Economic benefits of microprocessor controlled prosthetic knees: a modeling study. J Neuroengineering Rehabil 2018; 15: 62
5. Chin T, Maeda Y, Sawamura S, et al. Successful prosthetic fitting of elderly transfemoral amputees with Intelligent Prosthesis (IP): a clinical pilot study. Prosthet Orthot Int 2007; 31: 271–276
6. Wurdeman SR, Stevens PM, Campbell JH. Mobility analysis of amputees (MAAT 3): Matching individuals based on comorbid health reveals improved function for above-knee prosthesis users with microprocessor knee technology. Assist Technol 2018; 1–7.

blatchfordmobility.com

Blatchford
Mobility Made Possible

8497500297EN_GB Iss2 04/25