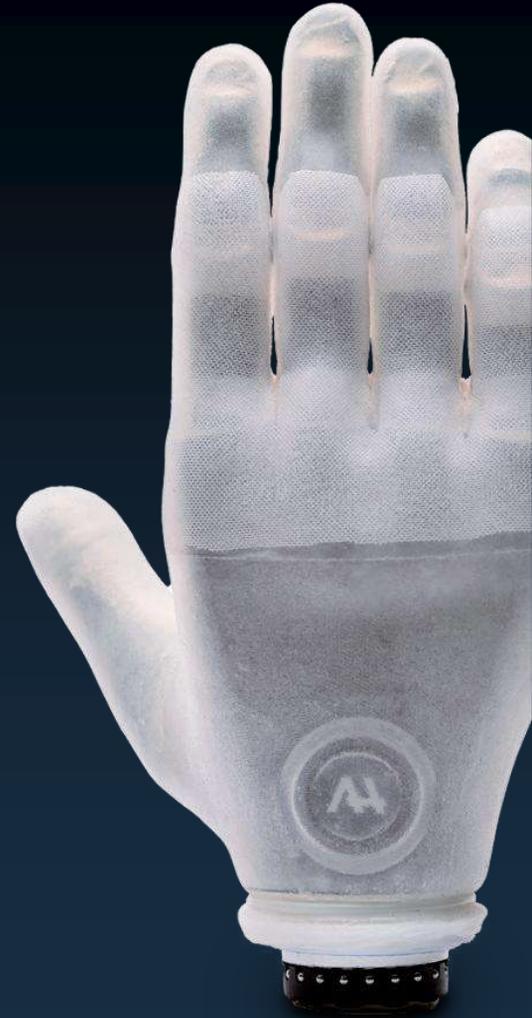




ADAM'S HAND[®]

The First of its Kind



BIONIT LABS[®]
TURNING DISABILITIES INTO NEW POSSIBILITIES



BIONIT LABS[®]

TURNING DISABILITIES INTO NEW POSSIBILITIES

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WELCOME

Here you have the chance to take a deeper look at what **6 years of R&D in close contact with individuals with upper limb differences and professionals in the O&P industry** can generate. Thanks to the work of a team committed to change in the O&P industry, our mission remains “Turning Disabilities into New Possibilities”.

Why are we dedicating our life to reach this goal?

“Nowadays, people with disabilities are continually forced to adapt to an environment that has not been designed considering their needs, but rather following the wishes of the majority of the “able-bodied” population. The interfaces that allow a person with motor, visual, auditory or other impairments to interact immediately and effectively with the environment and other individuals are generally few and inadequate. It’s therefore our responsibility to breathe life into Innovative Technologies that can concretely improve people’s quality of life, thus creating a more equitable and accessible world.”

Giovanni Zappatore – CEO & Founder of BionIT Labs



ORGANIZATION

BionIT Labs was founded in 2018 with the belief that a great idea in the hands of a highly competent and motivated team is the key to bring meaningful changes in the prosthetic industry.

We are composed of a multidisciplinary team of 40 members, spanning R&D, Sales & Marketing, Clinical and Technical Operations, Admin and Finance.

To reach our goals, we merge cutting-edge technology and scientific knowledge with unique human values.

Our company, built on 6 foundational technology patents, has successfully tested and fitted numerous individuals with upper limb differences with our first of its kind prosthesis, the **Adam's Hand**.

BionIT Labs has already obtained ISO 9001 and ISO 13485 quality certifications and it is Registered with the FDA under the registered establishment number 3018070844, where the Adam's Hand and associated accessories are listed.

Our quality certifications are a testament to our commitments to customer satisfaction & continuous improvement.





BIONIT LABS

TURNING DISABILITIES INTO NEW POSSIBILITIES

WE ENVISION A FUTURE WHERE SCIENCE AND TECHNOLOGY CAN HELP MANKIND CREATING A MORE EQUITABLE AND ACCESSIBLE WORLD.



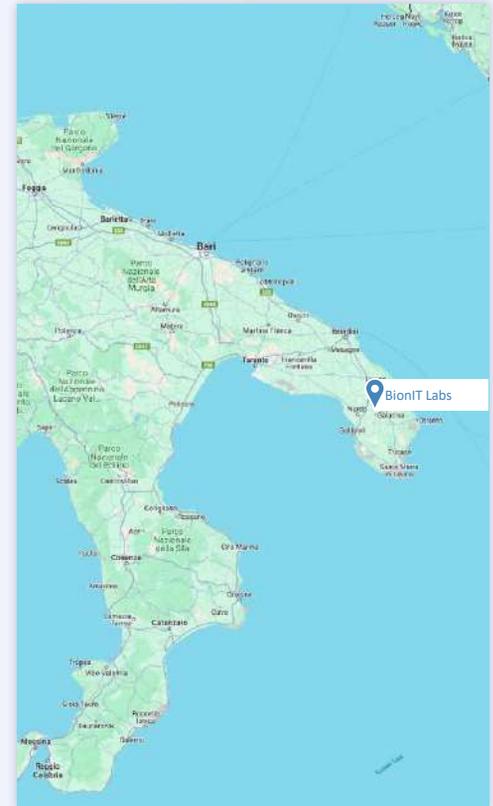


OUR HEADQUARTERS

BionIT Labs headquarters are in Soleto, Italy, a small city 20 km from Lecce (known as the “Florence of the South” for its architectural beauty) in Apulia, the southernmost region of the country’s “boot heel”. Apulia, a land rich in history and tradition, offers breathtaking sea and countryside landscapes. Its warm, vibrant people welcome people with open arms, energizing one’s soul and making it an ideal place for innovation.

The innovative culture found where we are located was captured by the New York Times, who stated “There’s something in the air, an energy that inspires people to create.” **This land of sea, culture, and inspiration is the perfect backdrop for BionIT Labs’ mission to improve quality of life.**

Our desire to bring innovation to this field does not stop here; **we have now a US-based headquarters, too, to ensure we provide best-in-class service to our US customer base.**





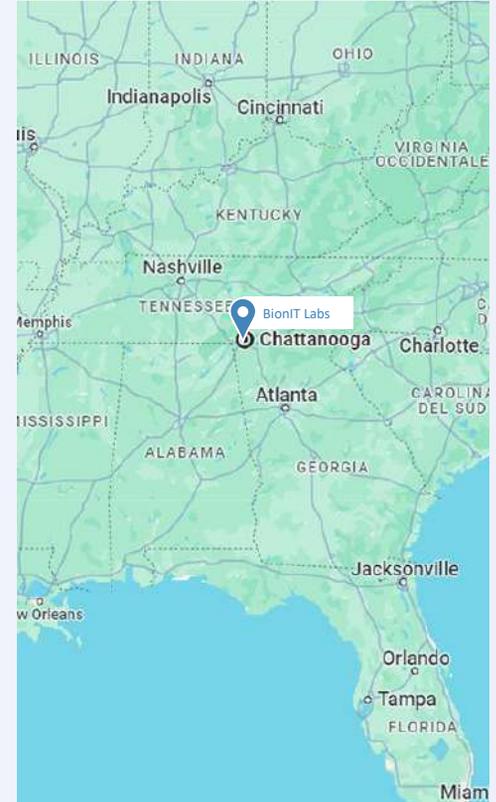


OUR US TEAM

BionIT Labs, Inc. North America headquarters are in Chattanooga, Tennessee, a centrally located location, surrounded by the natural beauty of the Tennessee River Gorge. Chattanooga provides a stunning natural backdrop, a vibrant city, and a pool of excellent talent highly specific to upper limb prosthetics as our NA Team expands.

We have recruited a **team in North America with decades of experience** working to support upper limb prosthetic products. Our goal is to create a customer support experience that will far exceed industry standards and expectations.

The team has already been at work achieving PDAC approval, and making other necessary preparations to ensure that Adam's Hand can be launched in the US and Canada in a manner that ensures we can live up to our company's vision and mission.







REVIEW OF PROSTHETIC HANDS IN MARKET

Tridigital hands/hooks as well as sophisticated multi-articulating hands are both utilized today.

Tridigital hands are typically preferred by the vast majority of end-users, as they are easy to use, robust, and lightweight.

Multi-articulating hands are typically chosen for their higher dexterity and anthropomorphic appearance, which allow end-users to perform a higher variety of ADLs compared to older devices.

While both tridigital and multi-articulating hands are used, they retain significant drawbacks in the tradeoffs reflected in their design.



Tridigital Hands

While this technology has persisted in the market, **tridigital hands suffer from substantial deficiencies for those seeking a solution to complete the majority of their activities of daily life.** While durable and light, these devices are **characterized by limited aesthetic appeal and low dexterity**, with only one open/close motion.



Multi-articulating Hands

Today's multi-articulating hands **often require a high cognitive load on end-users** due to the amount of training required to learn how to use them. Their use feels unnatural to end-users, who are **unable to perform actions spontaneously.**

Switching grips through co-contractions, or double to triple impulses often leads to muscle fatigue and extends the time to perform gripping actions. **With time, many individuals simply abandon their prosthesis.** Additionally, multi-articulating hands **generally present limited durability, requiring frequent repairs** that take extended time and negatively impact the user experience.

With the available options in the market, only 30-40% of upper-limb amputees in high-income countries use a prosthesis.

**INTRODUCING
THE NEXT GENERATION
OF MULTI-ARTICULATING
HAND PROSTHESES**





A durable, biomimetic solution for individuals with upper limb differences, **Adam's Hand intends to bridge the gap between tridigital and multi-articulating hands.**

Our solution was designed to provide end-users with an **easy-to-use, durable and highly anthropomorphic device**, with the intent to perfectly support them in all main activities of daily life.

MYOELECTRIC PROSTHETIC HANDS IN MARKET

When reviewing the shortcomings of myoelectric prosthetic hands today, it tells a story of the use of outdated technology to address the persistent issues with highly complicated bionic solutions.



ADAM'S HAND BRIDGES THE GAP

Adam's Hand has a highly robust design while maintaining the ability to perform a wide variety of grips.

It combines the ease of use and durability of tridigital hands with the dexterity and anthropomorphism of multi-articulating hands.

With the Adam's Hand, after skilled occupational therapy training, new users are able to perform 90% of their ADLs.



Tridigital Hands

Limited Dexterity

Unnatural Appearance

Outdated Technology



Multi-articulating Hands

Challenging to Learn & Use

Limited durability, High Cost

Limited Compliance, High
Abandonment Rate



What sets the Adam's Hand apart

High Versatility & Dexterity

Unparalleled Durability

Exceptional Compliance and
High Grip Force

Built-in pattern recognition

Intuitive Thumb Rotation

Haptic Feedback

Waterproof & Dustproof Design

Enhanced biomimetic performance

ADAM'S HAND ADVANTAGES





Intuitive Dexterity

With **Fully-Adaptive grip, AI-based pattern recognition, simplified thumb rotation and haptic feedback**, end-users quickly learn to use the device intuitively. This fosters a natural feeling of control, turning the prosthesis into an extension of the user's body. **Adam's Hand's thoughtful design minimizes rejection rates, and enhances quality of life.**



Unparalleled Durability

The Adam's Hand is built with **durable, lightweight materials and offers waterproof and dustproof functionality**. These features are coupled with an innovative finger mechanism that provides the prosthesis with a high compliance and resistance to external stresses that flex and extend the fingers.



Best-in-Class Customer Support

Boasting **easily replaceable and field-serviceable components, remote firmware updates through a companion MyoLogic App and in-clinic autonomous repair in less than 1 hour**, the Adam's Hand ensures best-in-class customer support, prioritizing seamless functionality and user satisfaction.

INTUITIVE DEXTERITY



Human-like grasping behavior with No Grip Selection Required

No complex muscle contraction triggers needed to switch among several grips: end-users only need to open and close the Adam's Hand, and all fingers flex together, automatically adapting to grasped objects' shape and size in an extremely natural movement.

Drastically Increased Ease of Use

With no grip selection required, end-users can experience much less muscle fatigue and cognitive load. After learning only one open and one close command, they can easily perform the 90% of ADLs.

Simplified Thumb Rotation

With three selectable positions, the thumb's rotation movement is not activated by muscle contractions - our proprietary rotation mechanism ensures ease of rotation when the thumb is disengaged and a stable grip once the thumb is in position. With the ability to manually reposition the thumb, end-users have an easier time learning use of the device.

Built-in Pattern Recognition

Through an automatic calibration procedure that takes a few seconds, the hand tailors to each individual muscular tone on the go - anytime, anywhere. Gone are the days of wasting time setting various signal activation thresholds, delays, or control methods. Using standard EMG electrodes you get access to an advanced pattern recognition system integrated into the hand.

Haptic Feedback

The Adam's Hand provides the end-users with vibratory feedback that changes according to the resistance opposed by the object being held, or according to the position of the hand in space. This helps better integrate the use of the prosthesis in ADLs, while increasing the device embodiment and reducing rejection rates.

UNPARALLELED DURABILITY



Unrivaled mechanical compliance

The Adam's Hand innovative fingers' mechanism provides the prosthesis with a high resistance to external stresses which tend both to flex and to extend the fingers. This way, the highly compliant fingers are able to absorb all the shocks coming from the majority of activities of daily life, making the hand exceptionally durable. Self-adjusting fingers reduce end-users' compensatory movements and help in evenly distributing the forces exerted during the grip to all the contact points with the grasped object.

Durable & Lightweight

Fitted with a stainless steel core, aviation-grade aluminum joints, and impact resistant plastic cover, Adam's Hand is built with durability in mind. These features further allow it to safely resist high stresses, leading to 1.5x static loads vs competitors, while keeping its weight as low as possible.

Enhanced Biomimetic Performance

Adam's Hand features a high grip force that boasts 2x grip strength vs competitors and less than 1 second closing time for the grips related to the majority of ADLs. Moreover, using proportional control, the end-user can directly manage the grip force and speed of the hand through the modulation of the muscles' contraction force.

Waterproof & Dustproof (IP67)

Thanks to Adam's Skin, a medical-grade, textile fiber reinforced silicon glove, end-users have total water and dust protection from the elements up to the socket. Extremely resistant to wear and tear, Adam's Skin is available in three different models (Basic, Advanced, Individual), and comes in jet black, clear white and up to 24 different skin tones.



BEST-IN-CLASS CUSTOMER SUPPORT



Easy Fitting via AI Calibration

Adam's Hand calibrates in a few seconds with the help of AI-enabled pattern recognition software. Along with the Myologic App, the software can wirelessly help patients train their muscles with a virtual model.

Remote Firmware Updates through the Myologic App

The Myologic App allows clinicians to set device functions, check diagnostics and error logs, manage end-users database and download device manuals.

Easily Replaceable & Field-Serviceable Components

With the ability to replace/service all five digits, Adam's Skin, and the Adam's Hand front and back covers, office staff can perform autonomous repair in the clinic in less than 1 hour.

We Understand that Your Time is Precious

That is why we are putting into place programs to ensure we support you from start to finish, including:

- Free training and certification
- Free trial device for patient test fitting
- EU-based inventory for fast shipment
- Reimbursement support
- Free hardware updates
- Annual check-ups with provision of loaner device
- No cost to you for repairs under warranty
- EU-based customer support hotlines

USERS TESTIMONIALS

“The first time I tried Adam’s Hand, I succeeded in doing something I couldn’t achieve with any other device, like safely lifting a glass without feeling insecure in my grip, which gave me great hope.”

Viviana, Italy

“After long research I can say that I’ve found the hand of my dreams in Adam’s Hand. It increases my abilities and helps me overcome my physiological issues, giving me the confidence to do more.”

Michele, Italy

“It’s almost like the Adam’s Hand is melting with my body – I’d miss it if I couldn’t use it anymore.”

Philipp, Germany



INTUITIVE DEXTERITY

Adam's Hand retains a highly conforming, firm grasp, allowing it to grip and use a variety of objects and tools at a speed that feels natural to the end-user.



Tripod grip



Handshake



Power grip



Hook grip



Point grip



Lateral grip



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TECHNICAL DETAILS



Contact

For further information on technical components, reach out to us at support@bionitlabs.com

GENERAL INFO & DIMENSIONS

General Info

Sizes	M (7-3/4''), S (7-1/4'')
Voltage	6 ÷ 8.4 V
Max. Current	6 A
Number of actuators	2
Proportional Control	Yes
Type of wrist	QDW/Short
Water- and dust- proof rating (IEC 60529)	IP67

Dimensions

The dimensions include Adam's Skin Glove, not shown in images.



GRIP FORCE & CLOSING SPEED

Adam's Hand retains a highly conforming, firm grasp, allowing it to grip and use a variety of objects and tools at a speed that feels natural to the end-user.

	Type	Force	Closing Time
Lateral Grip		45 N (10 lbf)	0.9 s
Tripod grip		30 N (8 lbf)	0.65 s
Power Grip		70 N (16 lbf)	1.0 s

STATIC LOADS

Maximum Supported Static Loads*

Vertical push-down load through knuckles	265 lb – 120 kg
Hand carry load (hook grip)	M= 88 lb - 40 kg S= 100lb – 45 kg
Finger carry load (hook)	44 lb – 20 kg
Finger carry load (transverse force)	44 lb – 20 kg
Max flexion load (at 3" (75 mm) from wrist)	70 lb – 32 kg
Short wrist max torsional load (at 3" (75 mm) from wrist)	84 lb – 38 kg
Static force on chassis	165 lb – 75 kg

*Tested in our internal laboratory –
read the User's Manual for more details

Photographic References

Vertical push-down load through knuckles



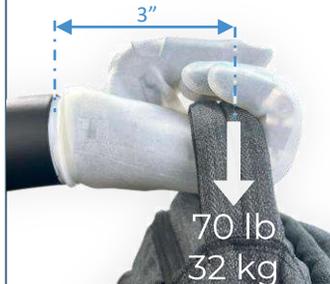
265 lb
120 kg

Hand carry load (hook grip)



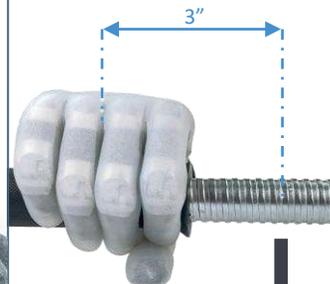
M= 88 lb - 40 kg
S= 100lb - 45 kg

Max flexion load (at 3" (75 mm) from wrist)



70 lb
32 kg

Short wrist max torsional load (at 3" (75 mm) from wrist)



84 lb
38 kg

Static force on chassis



165 lb
75 kg

BIONIT LABS PRODUCTS & ACCESSORIES

BionIT Labs has developed a complete range of products which ensures both the clinicians and end-users a completely innovative user experience.

Adam's Hand is accompanied by a set of high-tech accessories that maximize its potential.

Our goal is to allow clinicians to deliver **top-level technology focused on a reliable user-centered design**, while providing the end-users with **the confidence they need to express their full potential.**



PRODUCTS & ACCESSORIES FOR END-USERS





ADAM'S SKIN



Each new Adam's Hand comes with **one Adam's Skin basic** in your choice of **clear white or jet black**. A second Adam's Skin can also be added with your choice of colors, among **8 different skin tones**.

Our Adam's skin basic allows the hand to be **waterproof across the wrist**, thanks to our **wrist lamination kit**.

We also have Adam's Skin coverings that offer more options for end-users to customize their cosmetic choices, including the **Adam's Skin Advanced** (3 colors among 24 different skin tones) and the **Adam's Skin Individual** (5 colors among 24 different skin tones).



BASIC – 1 COLOR



ADVANCED – 3 COLORS



INDIVIDUAL – 5 COLORS

WE WAVE ELECTRODE

Wave Electrode offers an **exceptionally compact design with a mere 8 mm thickness**, making them one of the thinnest active analog electrodes in the market. Being **20% thinner than equivalent devices**, the slim profile enables clinicians to create a less bulky socket, thereby enhancing end-users comfort.

Available in 50 and 60 Hz models, these electrodes ensure low power consumption while providing accurate and fast readings of patients' muscle signals.

The electrical contacts are crafted from **hypoallergenic surgical steel**, and the casing is made of a biocompatible polymeric material, ensuring **high impact resistance and water- and dust-proof capabilities (IP67)**.

Additionally, the Wave Electrodes feature **replaceable suspension legs, gain level adjustment**, and high compatibility with third-party terminal devices and supply systems, as indicated in the devices' datasheet.

Pending FDA Approval





THUNDERCELL
BATTERY

ThunderCell Battery is an interchangeable **lithium-ion battery with a 7.4V nominal voltage and a 950 mAh capacity**, featuring a **rapid 1-hour recharge time** via a USB Type-C connector. Its compact and waterproof design (IP67) ensures durability.

The battery incorporates a **multifunction button with LEDs** and various smart features, enhancing communication with Adam's Hand and boosting system reliability and performance.

Providing **vibratory feedback** to the end-user, the ThunderCell Battery facilitates personalized training with an **integrated motion sensor** that tracks socket position in space. Additionally, it **supports remote firmware updates through the MyoLogic app**.

The battery's "**power bank mode**" enables **smartphone recharging**. Noteworthy features include high compatibility with third-party terminal devices and EMG electrodes, as indicated in the device's datasheet.





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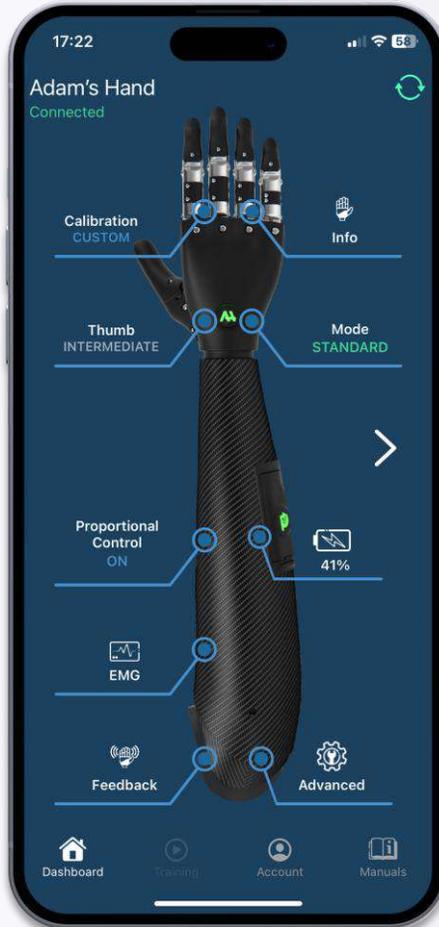
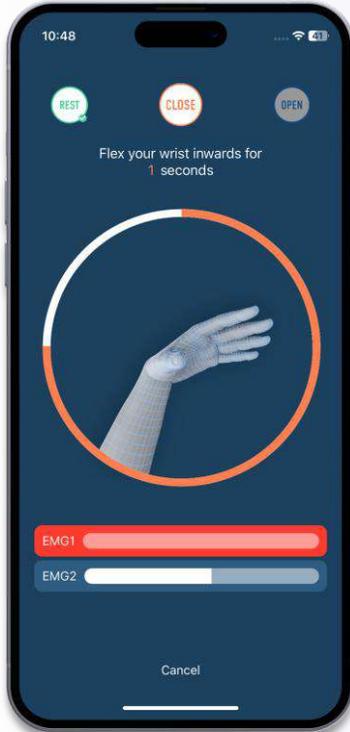


MYOLOGIC APP

Myologic is a comprehensive iOS and Android App designed to optimize the utilization of Adam's Hand integrated Artificial Intelligence with Bluetooth connectivity.

The app facilitates a **user-friendly experience by guiding end-users through learning and training processes**. It offers customization options for device functionality and accessories, along with convenient access to **download quick start guides and manuals** for reference.

End-users can effortlessly **calibrate the Adam's Hand**, engage in **muscle training using the virtual model**, and **fine-tune device settings**.



PRODUCTS & ACCESSORIES FOR CLINICIANS

QUICK DISCONNECT WRIST AND SHORT WRIST LAMINATION KITS



DEMO UNIT

MYO UNIT



QDW LAMINATION KIT

SHORT WRIST LAMINATION KIT

Our **Quick Disconnect Wrist lamination kit** has been meticulously engineered to perfectly match with the **hand seal ring**, making the prosthesis totally waterproof up until the socket, so **even the wrist joint is totally waterproof (IP67)**.

Our Short Wrist lamination kit seamlessly integrates with the socket during the lamination process, thanks to strong **Dyneema cables**, ensuring **perfect aesthetics and secure connection**.

The Short Wrist lamination kit also features a mechanism which allows for a **12-step rotation of the hand even post the lamination**, to slightly adjust the connection angle of the hand to the socket, **increasing user's comfort**.



QUICK DISCONNECT WRIST LAMINATION KIT

SHORT WRIST LAMINATION KIT





MYOLOGIC PRO APP

The MyoLogic Pro iOS app is specifically designed for clinicians, providing additional functionalities beyond the end-users' MyoLogic app.

This app enables clinicians to configure the Adam's Hand to link it with the user and control its functionality and diagnostics.

Alongside the standard MyoLogic features, clinicians using the MyoLogic Pro app can **access a broader range of functioning parameters, review the device's diagnostic and error log, manage end-users' databases, and connect to the Myo Unit for testing their myoelectric signals.**



DEMO UNIT

The Demo Unit serves as a demonstration tool for testing the Adam's Hand without requiring a socket. It utilizes a 2 degrees of freedom proportional open/close joystick and accommodates two standard analog EMG electrodes.

The unit features a battery receptacle for compatibility with our ThunderCell Battery and includes a stand for convenient operation.

Additionally, clinicians have the option to integrate third-party wrist rotators compatible with the Demo Unit (not included in the Demo Unit package).

The Demo Unit is also compatible with standard Quick Disconnect Wrist and all major EMG electrodes, as indicated in the device's datasheet.



MYO UNIT

The Myo Unit enables the **on-the-go display of end-user EMG signals** and connects seamlessly to the MyoLogic Pro app via Bluetooth. This integration allows end-users to train with a **virtual prosthesis**, eliminating the need to wait for socket manufacturing.

Additionally, **users can perform calibration procedures**, facilitating a smooth transition to the Adam's Hand once the socket is ready.

The device has a **rechargeable battery, providing a full day of continuous functionality**, and features a **USB-C connector** for convenient recharging.

It supports EMG signals plotting with **bar and time plots** and is compatible with all major EMG electrodes, as indicated in the device's datasheet.



COMMERCIAL CODES



AH02 - C D Y - EE

C = Side

L = Left
R = Right

D = Size

S = Small
M = Medium

Y = Wrist

1 = QDW
3 = Short Wrist

EE = Color

Basic (1 color)			Advanced (3 colors)	Individual (5 colors)
Jet Black		B1	A0	I0
Clear White		W1		
Natural skin tone 1		N1		
Natural skin tone 2		N2		
Natural skin tone 3		N3		
Natural skin tone 4		N4		
Natural skin tone 5		N5		
Natural skin tone 6		N6		
Natural skin tone 7		N7		
Natural skin tone 8		N8		
Use the Basic Color Swatch (CS01)			Use the Complete Color Swatch (CS02)	

CUSTOMER SUPPORT



Customer Support

Adam's Hand is available with multiple warranty coverage packages up to five years.

The Adam's Hand warranty comes with an annual check-up and a loaner hand available during repairs.

The following warranties are applied to the Adam's Hand accessories:

- Adam's Skin: 6 Months
- Wrist Lamination Kit: 1 Year
- ThunderCell Battery Pack: 1 Year
- Electrode Pack: 1 Year
- Demo Unit: 1 Year
- Myo Unit: 1 Year

Our Europe based Customer Support Hotline is ready to support you at:

(+39) 0836 1946903

Or email us at: support@bionitlabs.com or sales@bionitlabs.com





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