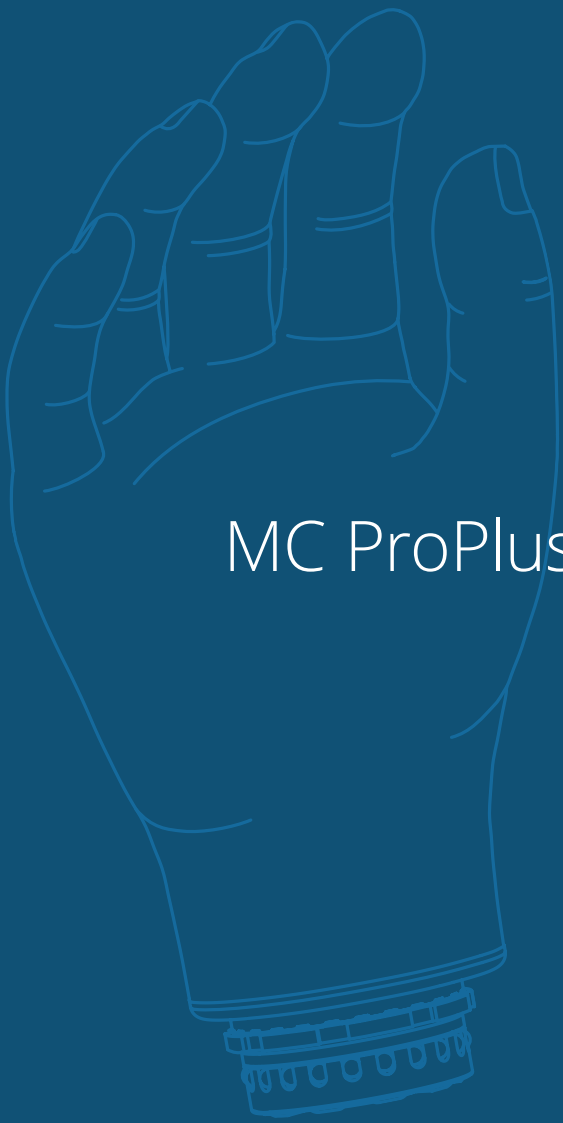


MC ProPlus Hand

User Guide

Fillauer®
Motion Control

Special Precautions

Risk Management
To minimize the risk of device damage or injury to the user while maximizing the functions of this device, follow the instructions for installation, and use this device as described in this manual.

The MC ETD is water-resistant, not waterproof
While the Motion Control Hand is water-resistant, the quick disconnect wrist is not. Do not submerge the MC Hand beyond the wrist.

Flammable Gases
Caution should be used when operating the MC Hand around flammable gases. The MC Hand utilizes an electric motor that can ignite volatile gases.

Do not bend fingers
While the MC ETD is robust, body weight represents a great deal of force. Do not apply full body weight on the fingers. Additionally, a fall with the force directed to the fingers could cause damage. If the fingers do become bent or out of alignment, return the MC Hand to your prosthetist.

Safety Release
Do not force the fingers and/or thumb opened or closed. This will result in serious damage to the device. The safety release will allow easy opening and closing of the hand. If the release mechanism does not allow motion, the device requires service.

Setup Using the User Interface
While the default settings in the MC Hand may allow the patient to operate the system, it is highly recommended the prosthetist utilize the User Interface to customize the settings for the wearer.

Safety Caution
Use caution when using this device in situations where injury to yourself or others may occur. These include but are not limited to activities such as driving, operating heavy machinery, or any activity where injury may occur. Conditions such as a low or dead battery, loss of electrode contact, or mechanical/electrical malfunction (and others) may cause the device to behave differently than expected.

Repairs or Alterations
Do not attempt to repair or alter any of the mechanical or electronic components of the MC Hand. This will likely cause damage, additional repairs and void the warranty.

Serious Incidents
In the unlikely event a serious incident occurs in relation to the use of the device, users should seek immediate medical help and contact their prosthetist at the earliest possible convenience. Clinicians should contact Motion Control immediately in the event of any device failure.

Introduction

The Motion Control (MC) ProPlus Hand is a high performance electric hand for persons with upper extremity limb loss. The MC Hand is available in three sizes and several lengths to accommodate a variety of individuals. It contains a battery-saver circuit for longer battery life, wide-opening fingers, heavy-duty machined frame and fingers, and a unique safety release. This results in a robust efficient, high-speed terminal device for an upper extremity prosthesis.

The MC ProPlus Hand has an ultra long-life brushless DC motor and on-board controller. This versatile microprocessor provides easy adjustability via wireless Bluetooth® communication to iOS devices (iPhone®, iPad®, and iPod Touch®), a variety of input sensors, and high performance. The MC ProPlus Hand can be easily interchanged with other MC ProPlus components, such as the MC ProPlus ETD, and other manufacturers' devices.

Three Position Switch

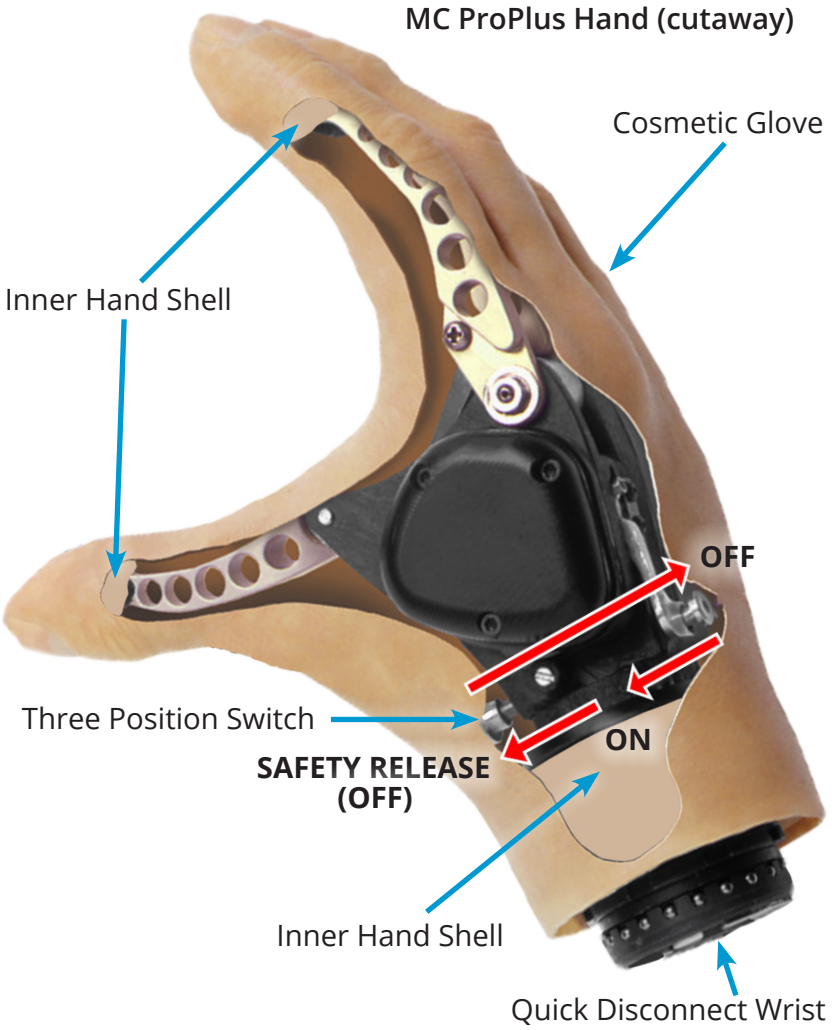
The MC Hand has a three position sliding switch located in the middle of the back of the hand. On the palm side, it is located at the base of the thumb. With the switch pushed all the way toward the back of the hand, the hand is OFF. Pushing from the back of the hand toward the palm, the first click turns the hand ON. Pushing completely toward the palm is the SAFETY RELEASE position, releasing the fingers. In the Safety Release position, the hand is also turned OFF.

Quick Disconnect Wrist

The Quick Disconnect wrist is a universal design that allows interchangeability with our other terminal devices, such as the MC ProPlus ETD and other manufacturers' devices.

Inner Hand Shell

This durable glove is installed at the factory and is not meant to be removed except by trained personnel. This shell provides protection for the hand along with some moisture resistance. If a hole or damage is discovered, the hand shell should be replaced. Some smaller sized hands do not have an inner hand shell, they have only a cosmetic glove. This requires a special order from Motion Control. Cosmetic Glove This glove should be chosen in conjunction with your prosthetist, examining the color swatches compared to your skin tone. Ideally, this should be done outdoors, under natural light, not under



fluorescent lighting. The glove should remain intact to prevent damage to the hand. Holes or damage to the glove could allow liquids to enter the hand, and cause damage. Always maintain an intact glove.

Instructions for Use

Before attaching the MC Hand to the forearm, locate the switch on the palmar side of the hand at the base of the thumb. Ensure it is pushed completely to the back of the hand (the OFF position).

Insert the quick disconnect wrist on the hand into the wrist on the forearm. While pushing it in firmly, rotate the hand until an audible click is heard. It is advisable to rotate the hand both directions several clicks, then attempt to pull the hand off to ensure it has attached firmly. Now, push the switch on the back of the hand toward the palmar surface to the second (middle) position and the hand is now ON and ready for use.

To disconnect the hand, first turn it OFF (by pushing the switch all the way to the back of the hand), then rotate it in either direction until a slightly more difficult click is felt. Overcoming this click will disconnect the hand from the forearm. This allows interchangeability with another terminal device, such as the MC ProPlus ETD.

Water Damage

The Motion Control Hand is not waterproof. If water or other liquid should enter the hand, remove the hand at the quick disconnect (or turn the hand off if there is no quick disconnect). If the hand is only slightly wet (has not been submersed), dry it as much as possible, and attempt to power it up and operate. If it does not operate, or if the hand has been submersed, see your prosthetist.

User Interface Adjustments

Each of the ProPlus family of Motion Control products contains a microprocessor that can be adjusted and set for a specific individual's needs. Wearers without EMG signals can also be accommodated, but some additional hardware may be necessary. The software needed to make these adjustments is provided at no charge to the prosthetist or end user.

iOS User Interface

The MC ProPlus Hand underwent a core upgrade in mid 2025. Devices purchased before this date use the Motion Control User Interface (MCUI) App for configuration. Models purchased after that time will require use of the Motion Arm User Interface (MAUI) for setup. Both are available for free from the Apple Store, android devices aren't supported. Please refer to your specific device and the Quick Setup Guides at the end of the manual.

Patient/Prosthetist Controls

Upon opening the iOS Application you will be asked “Patient” or “Prosthetist” – select “Patient”. While you as a patient are allowed to navigate the entire application, many of the adjustments are “grayed out” as those can only be changed by your prosthetist.

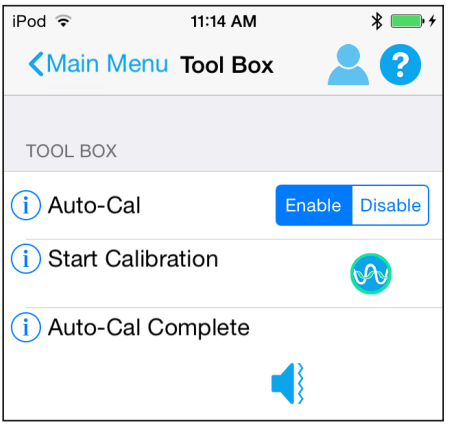
However, you are still able to see the strength of your signals to allow you to exercise those muscles (or other inputs).

Additionally, you may change any adjustments that are not “grayed out”. These include such settings as buzzers, and several of the FLAG adjustments (FLAG is an optional feature).

User Profiles

You are able to save your profile in the User Profile section of the iOS User Interface. It is advisable to save your Profile on your device, and your prosthetist is advised to save it on his, also. This will provide a backup in case any repairs or firmware updates are required.

Auto-Cal



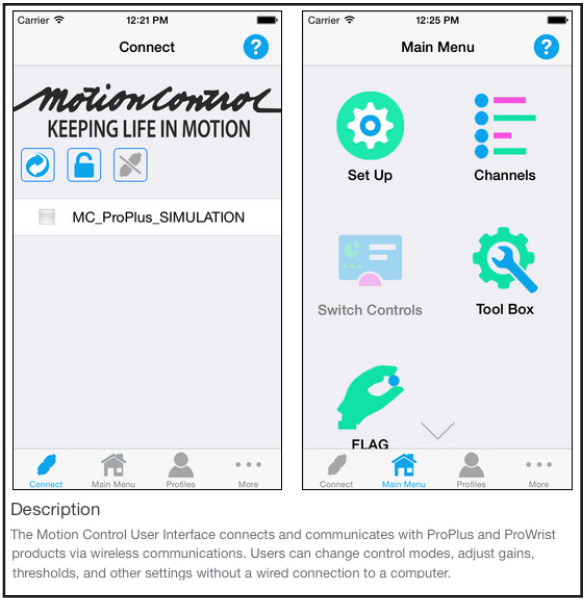
Auto-Cal is a feature on every ProPlus device. Use Auto-Cal only at the direction of your prosthetist. Triggering an Auto-Cal event will likely cause loss of the settings your prosthetist has programmed into your device.

If your prosthetist has instructed you in the use of Auto-Cal, you can trigger an Auto-Cal event by tapping the icon at “Start Calibration”, then give moderate open and close signals for 7 seconds. The iOS device will prompt you. It is important you make these moderate signals, as too strong a signal will result in the device running slowly. Too weak a signal will result in a device that is difficult to control.

After “Auto-Cal Calibration” you will be asked if you like these settings. Try opening and closing quickly and then attempt lightly

grasping objects. If you are able to do both, accept the calibration. If you do not have adequate control, tap “Retry”.

Note: When you accept Auto-Cal settings, your previous settings are lost. If your prosthetist has set up custom settings, do ***not*** trigger Auto-Cal calibration.



FLAG (Optional Feature)

FLAG (Force Limiting, Auto Grasp) is a special feature that allows a patient to limit grip force, whenever more care when holding something delicate, like a child’s hand, or a light bulb is needed. With FLAG on, a quick, inadvertent opening signal will result in a single “pulse” increase in grip force to prevent dropping an object.

Turn FLAG On/Off

Upon power up, FLAG is turned off. The TD should be closed, then opened, before using FLAG. To turn FLAG on, give the device a “Hold Open” signal (for ~ 3 sec.)**. When FLAG turns on, the wearer will feel one long vibration. After you enable FLAG the device speed is reduced to about half of normal. A “Hold Open” signal (for ~ 3 sec.)** will turn FLAG off, and two short vibrations will be felt by the wearer.

Note: If a series of **5 vibrations** is felt upon a “Hold Open”, it could indicate a malfunction in the FLAG sensor. Turn the device off, and back on, then completely open and completely close the device. Retry the “Hold Open” signal to activate FLAG. If 5 vibrations are felt again, the device will still function but FLAG will be disabled. The device must be returned to Motion Control for the FLAG sensor to be repaired.

Dual Channel FLAG

Force Limiting

1. With FLAG on, closing is still proportional, with maximum speed lowered by 50%**.
2. On closing, when the fingers contact an object, force will be limited to ~ 2 lbs/9N of grip force – then the wearer feels one short vibration.
3. To increase force, the wearer relaxes below threshold, followed by a strong close signal** for a short effort** and the grip force "pulses" up.
4. Grip force can be pulsed up to 10 times to a maximum of ~ 18 lbs/80N of pinch force**.
5. An open signal will open the terminal device proportionally.

Single Channel FLAG

With Single Channel Control, FLAG is best used in Alternating Direction Control Mode.

Force Limiting

1. With FLAG on, the terminal device will close at approximately 50% speed**, proportionally.
2. When the device contacts an object, force will be limited to ~ 2 lbs/9N.
3. A quick and strong signal** above the threshold, then relaxation below the threshold, will create one pulse in the force**.
4. This can be repeated up to 10 times for ~ 18 lbs/80N of pinch force.
5. Sustained signal of ±1 second will open the terminal device.

1-CHANNEL SETTING	ACTION	FEEDBACK
Turn On	Signal 2-3 seconds	Buzz
Close to Grip	Signal ±1 second	Short Buzz
Pulse force up	Quick Signal ±1 second	Short Buzz
Open	Strong Signal 2-3 sec.	None, direction will reverse as usual
Turn Off	Open the hand then Signal 2-3 seconds	Double Buzz

2-CHANNEL SETTING	ACTION	FEEDBACK
Turn On	Hold Open 2-3 seconds	Buzz
Close to Grip	Close signal ±1 second	Short Buzz
Pulse force up	Close signal ±1 second	Short Buzz
Turn Off	Hold Open 2-3 seconds	Double Buzz

Using FLAG with Alternate Inputs (including Touch Pad, Linear Potentiometer or Force Sensor): In the User Interface, set Control Type to Alternate Input, and choose Single or Dual Channel. The Gain settings must be set so the wearer's output signal is high enough to exceed the Hold Open Threshold necessary to turn FLAG on or off.

Single Patient Use

Each amputee is unique. The shape of their residual limb, the control signals each generates and the tasks an amputee performs during the day require specialized design and adjustment of the prosthesis. Motion Control products are manufactured to be fit to one individual.

Disposal/Waste Handling

This device, including any associated electronics and batteries should be disposed of in accordance with applicable local laws and regulations. This includes laws and regulations regarding bacterial or infectious agents, if necessary.

Limited Warranty

Seller warrants to Buyer that the equipment delivered hereunder will be free from defects in materials and manufacturing workmanship, that it will be of the kind and quality described and that it will perform as specified in Seller's written quotation. The limited warranties shall apply only to failures to meet said warranties that appear within the effective period of this Agreement. The effective period shall be one year (12 months) from the date of delivery to the fitting center that has purchased the components. Refer to the shipping receipt for the date of shipment.

Return Policy

Returns are accepted for a full refund up to 90 days from date of shipment as long as the item is in resalable condition. Beyond 90 days, returns are not accepted.

Motion Control Device Patent Information: US 10,004,611 B2; US 7438,724,B2; US 7914,587 B2; US 7,114,430 B2 (exp); US 7,041,141 B2 (exp)

MAUI App for iOS

Quick Setup Guide*

- From the Apple® App Store download the MAUI app.
- Enter the Prosthetist Code: **PR-MCAK**. *Patients do not require a code.*
- Open the App and follow the Tutorial.
- Go to the Connect screen and tap Scan.
- Input the Pairing Key that came with the device. *This key should be kept in the Patient's record.*
- The device is now connected to the MAUI.
- To disconnect, tap the Connect icon in the lower left corner, then tap Disconnect.

Troubleshooting

- Make sure the battery on the device is fully charged
- Confirm the device is turned on
- Verify that you are not in "Simulation Mode" by double tapping the Home key, then swiping MAUI off the screen, and reopening the app
- Bluetooth® must be turned on in Settings on the iOS device
- The Information icon provides information about a function
- To repeat the tutorial, go to and tap Reset on Reset Guided Tutorial

System Requirements

- iOS 11 minimum
- iPad® (5th gen and later)
- iPad mini® (2nd gen and later)
- iPad Air®
- iPad Pro®
- iPod Touch® (6th gen and later)
- iPhone® 5s and later

*For configuring devices released after mid 2025. See your specific device.

MCUI User Interface for iOS

Quick Setup Guide*

1. From the Apple® App Store  download and install the MCUI.
2. Enter the Prosthetist Code: **PR-MCAK**. *Patients do not require a code.*
3. Open the App and follow the Tutorial.
4. Go to the Connect screen  and tap Scan. 
5. The device should now connect to the MCUI.
6. To disconnect, tap the Connect icon in the lower left corner,  then tap Disconnect. 

System Requirements

Apple® App Store account, and any of the following devices:

- iPad® (3rd gen and later)
- iPad mini™, iPad Air®, iPad Air® 2
- iPod touch® (5th gen and later)
- iPhone® 4S and later.

Troubleshooting

- Make sure the battery on the device is fully charged
- Check connection of the device in the quick disconnect wrist
- Confirm the device is turned on
- Verify that you are not in “Tutorial Mode” by double tapping the Home key, then swiping MCUI off the screen, and reopening MCUI
- Bluetooth® must be turned on in Settings  on the iOS device
- The Information icon  provides information about a function
- To repeat the tutorial, go to  and tap Reset on Reset Guided Tutorial.

*For configuring devices before mid 2025. See your specific device.

Technical Specifications

Operating Temperature: -5° to 60° C (23° to 140° F)
Transport & Storage Temperature: -18° to 71° C (0° to 160° F)
Pinch Force: At 7.2 volts nominal: 10 kg (22 lbs, or ~ 100N)
Operating Voltage Range: 6 to 8.2 Vdc - MC ProPlus Hand
Load Limit: 22 kg / 50 lbs in all directions (+/- 10%)

Declaration of Conformity

The product herewith complies with Medical Device Regulation 2017/745 and is registered with the United States Food and Drug Administration. (Registration No. 1723997)

RoHS COMPLIANT CE Bluetooth®

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