



i-limb® hand

Clinician Manual

i-limb® hand clinician manual

This document provides instruction for prosthetists in the fitting and servicing of the i-limb® hand and should be read in full prior to fitting. It is highly recommended that the use of this manual is made in conjunction with instruction from a clinician experienced in upper limb and myoelectric prostheses.



This symbol signifies important information and is used throughout the manual.

The i-limb hand should be fitted by a certified clinician.

This manual relates to the following items;

- i-limb quantum hand
- i-limb revolution hand
- i-limb ultra hand
- i-limb access hand
- i-limb hand coverings
- Analog electrodes (compact and remote)
- Magnetic charge port and charger

To ensure your manual is the most up to date refer to www.touchbionics.com/downloads/.

Further training information and videos can be found at <http://training.touchbionics.com/quantum-en.html>

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1.0 i-limb® hand range overview

1.1 Features comparison

Touch Bionics i-limb® hand range offers multi-articulating technology with many benefits, including:

- Individually motorized digits
- Thumb rotation: powered/manual
- Conformable grip
- vari-grip® feature to apply more force when desired
- automated grips
- multiple control options for accessing grips
- Clinician and user software
- Ability to personalize the prosthesis to the needs of the user at initial fitting and as they become more experienced
- 4 hand sizes
- Touch screen (TS) feature

The i-limb® product range, combines unsurpassed functionality with style. Individually motorized digits, stall detection and the unique software used to control the i-limb® hands result in the most versatile prosthetic hands currently available to the global market.

The i-limb® hand offers compliant grip, shaping around objects to provide a secure grasp. Rotating thumb (powered or manual) in conjunction with a pulsing, enhanced grip (vari-grip®), an anti-drop safety feature (auto-grasp®) and the wide range of automated grip patterns lead to broad functionality.

Users can choose from a wide selection of automated grips and gestures to help complete their daily tasks. Grips can then be customized further for precise control.

biosim® software enables the clinician to optimise the i-limb® hand to the individuals specific presentation.

The my i-limb® user software allows the user to interact with their i-limb® hand, to continue their training and adjust the settings to their daily requirements.



Fig. 1: i-limb® quantum



Fig. 2: i-limb® revolution



Fig. 3: i-limb® ultra



Fig. 4: i-limb® access

There are 4 hands available in the i-limb® range:



Features comparison				
	i-limb® quantum	i-limb® revolution	i-limb® ultra	i-limb® access
Control options				
- Gesture control	✓	-	-	-
- App control	✓	✓	✓	✓
- Muscle control	✓	✓	✓	✓
- Proximity control	✓	✓	-	-
Grips available	24	24	14	12
my grips®	12	12	-	-
Speed boost	✓	✓	✓	✓
Powered thumb rotation	✓	✓	-	-
vari-grip®	✓	✓	✓	-
Natural hand mode	✓	✓	✓	-

1.2 Control Options

Automated grips enable further precision in functional tasks. Particular digits are turned off with others remaining active. Additionally the thumb (when applicable) will automatically rotate to the optimum position for the desired grip. Each i-limb® hand has a selection of pre-set automated grips. my grips® offers further customization of the grip position.

A full explanation of each of the automated grips and functional examples for each can be found on the on-line training module <http://training.touchbionics.com/quantum-en.html>

The i-limb® hand can access these automated grips using a range of control options, refer to features comparison table to see which control options are applicable.

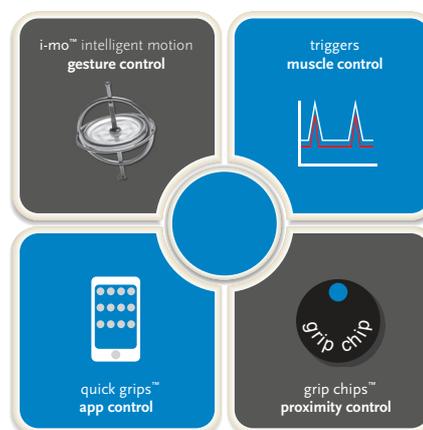


Fig. 5: Control options of i-limb® quantum

Gesture control

Enables an automated grip to be accessed through a smooth motion of the prosthesis in one of four directions (forward, back, left or right). The grips programmed for each direction are customized to the users requirements using the biosim[®] and my i-limb[®] app.

To access gesture control:

- Hold i-limb[®] hand parallel to the ground (elbow bent to 90°)
- Maintain an open signal until index finger twitches
- Move the i-limb[®] hand (within 1 second) in direction assigned to the desired grip
- The i-limb[®] hand will adopt the grip
- To exit the grip hold an open signal until the hand exits the grip

Default setting for gesture control is hold open, however it can alternatively be accessed using cocontraction. This is changed using the biosim[®] and my i-limb[®] app.

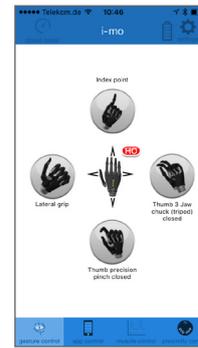


Fig. 6: Four selected grips for gesture control

App control

An automated grip can be accessed at the touch of an icon on the biosim[®] and my i-limb[®] app. These are called quick grips[®]. The i-limb[®] hand will exit the grip when the icon is tapped again or by selecting another grip icon to enter.

Speed boost is also available on the app using a simple slider bar. The increase in speed of the digits offers a more responsive action, more natural appearance and increased grip force potential.



Fig. 7: App control via my i-limb[®] app

Muscle control

Triggers are specific muscle signals that can be used to access an automated grip. There are 4 potential muscle triggers: hold open, double impulse, triple impulse and co-contraction.

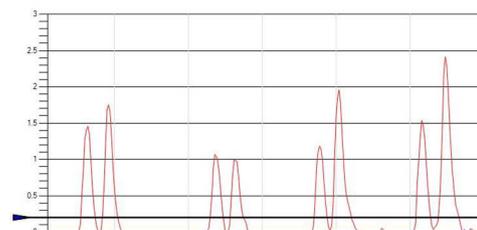


Fig. 8: myo graph showing muscle control

Proximity control

Grip chips[®] are small Bluetooth[®] chips which can change the programming of the i-limb[®] hand when you position the hand near to the chip. The grip chips[®] can be positioned in practical locations to allow access to the optimum grip for particular tasks at that location. The individual grip chips[®] are programmed using the biosim[®] or my i-limb[®] app and can be reprogrammed by the user at any time as required.

For further information on grip chip use and set up refer to i-limb hand user manual (MA01382).



Fig. 9: Grip chip[®] positioned on a pencil box

2.0 Prosthesis fabrication

When fabricating the prosthesis for the i-limb® hand consideration should be given to:

- a. Electrode positioning
- b. Battery placement, size and configuration
- c. Charge port placement
- d. Socket length and overall length of the prosthesis

Precautions should be taken against sweat entering the components, as sweat ingress can cause damage and compromise the function of the prosthesis.



The use of carbon fiber is not recommended due to electrical conductivity.



2.1 Socket materials

The socket design and materials used for the prosthesis are based on the clients presentation and skin condition. Typical inner socket materials include silicone, thermoplastic and laminate. The outer socket is primarily laminate.

For a standard prosthesis, a minimum expected layup would be;

Inner socket: 2 layers of perlon stockinette, 2 layers of nyglass and 2 layers of perlon stockinette.

Outer socket: 4 layers of nyglass and 2 layers of perlon stockinette.

The build of each prosthesis should be adjusted specifically to meet the individuals requirements.

It is not recommended to use carbon fiber within a myoelectric prosthesis.

2.2 Electrodes

When myotesting it is advisable to use the same electrode type as will be used in the users definitive prosthesis.

The electrode should be fitted into the socket in the optimum position identified during myotesting. The electrode must remain in contact with the skin throughout the users range of motion, during use of the prosthesis.

Loss of contact between the skin and the electrode results in poor control of the prosthesis.

It is recommended not to set the electrode gains higher than '5'.

Compact electrodes

When assembling, the electrode cable must be cut straight and fully inserted into the IDC block to ensure proper contact is achieved. The grey side of the cable must be facing the outside.

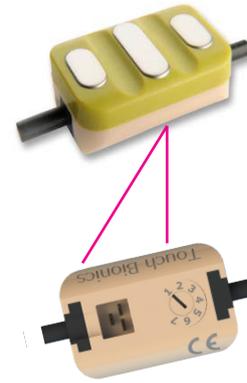


Fig. 10: Compact electrodes

Remote electrodes

When assembling the remote electrode the order of parts should be: electrode dome, socket interface, shake proof washer, eyelet, nut.

The middle cable on the electrode is the earth/ground cable, it should be secured to the dome positioned between the other 2 domes.

Optimum remote electrode domes spacing is 8-10mm from center to center.

The domes must not be touching.



Fig. 11: Remote electrodes



The electrode is an applied part.



Avoid dirt or fluids coming in contact with the electrode.



Regularly clean the electrode contact surface with mild soap and a damp cloth.



Fig. 12: Remote electrode dome

2.3 Batteries

Touch Bionics batteries, magnetic charge port, DC port or switch block components should always be used with the i-limb® hand. The battery should be changed every 12 months.



Only Touch Bionics batteries are approved for use with the i-limb® hand. Use of alternative batteries will invalidate the warranty and compromise general safety of the device.



Cutting or modifying the battery wires in any way will invalidate the warranty and compromise device safety.



Do not bend or shape the battery in any way.



Ensure the battery is not subject to continued pressure once fitted.



Do not handle the battery by the wires, or pull on the wires

Internal batteries

Internal batteries are available in 1300 mAh or 2000 mAh.

The internal battery is designed to be positioned between the inner and outer socket. Ensure adequate space is created during fabrication of the prosthesis by using the battery dummies.

It is advisable to create a flat surface within the outer socket for the battery to be attached to the surface using Velcro.



Fig. 13: Internal batteries

Powerpack batteries

Powerpack, external, batteries have a housing mounted on the outer surface of the prosthesis. Standard fabrication processes and techniques should be followed, utilizing the housing dummies to create the necessary shaping to accommodate the battery housing.



Fig. 14: Powerpack batteries

2.4 Magnetic charge port

It is important to provide sufficient space for the charge port between the inner and outer sockets.

When fabricating the outer socket the magnetic charger fabrication dummy should be used. The dummy is in 3 parts:

Dummy 1: is the thickest dummy. It is used to ensure sufficient clearance within the outer socket/frame for the magnetic charger port.

Dummy 2: has the central hole. It creates the step to recess the magnetic charge port.

Dummy 3: is the ring. It is used after lamination to create the necessary hole.



1. Position the dummies in desired location during preparation for final lamination, dummy 1 should be recessed within the outer socket/frame build down.



2. Position dummy 2 prior to applying final two fabric layers.
Laminate as normal.



3. Once laminated, grind surface to expose dummy 2.
Drill through central hole of dummy 2.



4. Remove dummy 2 and insert dummy 3.



5. Grind lamination to create hole.
Remove dummy 3.



6. Insert magnetic charge port securing in position with silicone adhesive.

3.0 Prosthesis Assembly

3.1 Quick wrist disconnect assembly

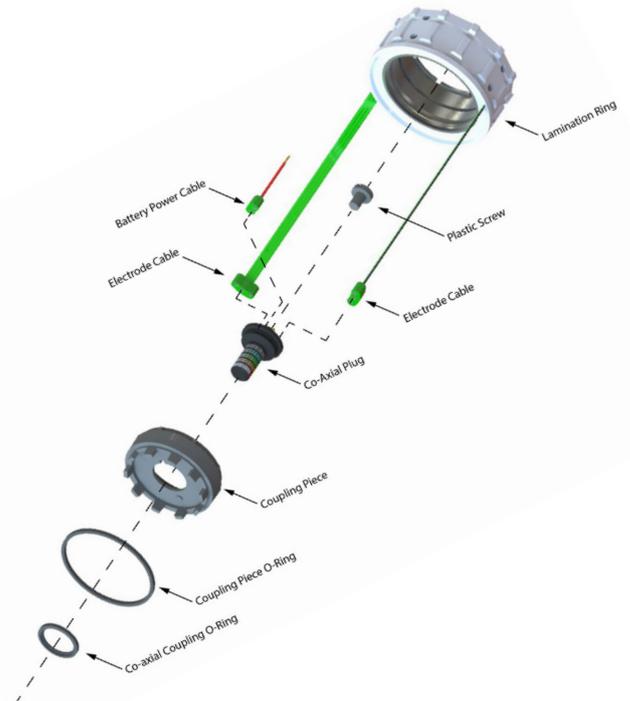
Insert the coaxial plug into the coupling piece and secure in position using the small 'O' ring.

Insert the coupling piece into the lamination ring and turn until seated. Insert the coupling piece 'O' ring and use the Quick wrist disconnect (QWD) release tool to secure in position.

Electrode and battery cables should be inserted into the coaxial plug and the plastic screw used to secure.

To connect the i-limb® hand to the prosthesis:

1. Ensure the i-limb® hand is switched off
2. Align the hand with the wrist
3. Give a slight push together
4. Rotate the hand slightly to ensure engagement



To remove the i-limb® hand from the prosthesis:

1. Rotate the i-limb® hand through 360° in either direction until it disengages
2. The hand will disengage from the prosthesis



3.2 Wrist disarticulation assembly

During fabrication consideration should be given to create sufficient space for the wiring and switch block and battery location.

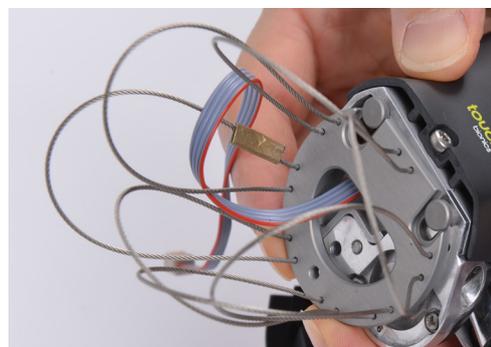
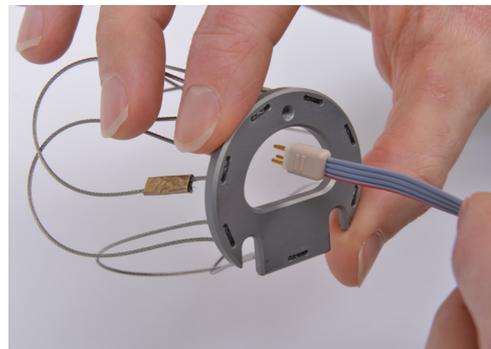
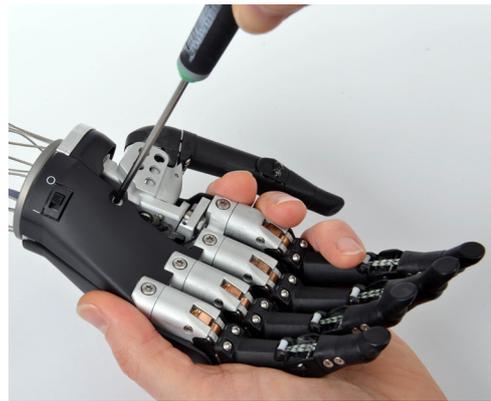
The lamination plate is fabricated directly into the outer socket. No rotation is possible at the wrist and therefore the fixed position should be set to be optimal for the user.

To connect the i-limb® hand to the lamination plate,

1. Remove the palmar fairing of the hand using a T10 screwdriver
2. Feed the power cable through the hole in the plate
3. Align the slots and slide the hand onto the plate
4. Screw the hand and plate together using a T10 screw
5. Replace the palmar fairing, ensuring not to pinch the wiring

To remove the i-limb® hand from the lamination plate, complete the steps in reverse.

To complete assembly of the prosthesis the battery and electrode cables and hand power cable are connected to the black WD switch block connector.



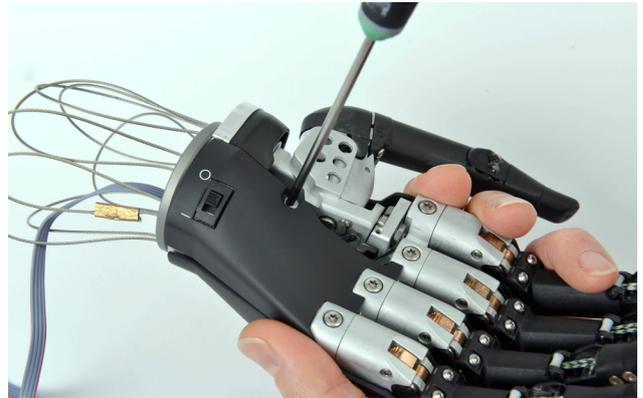
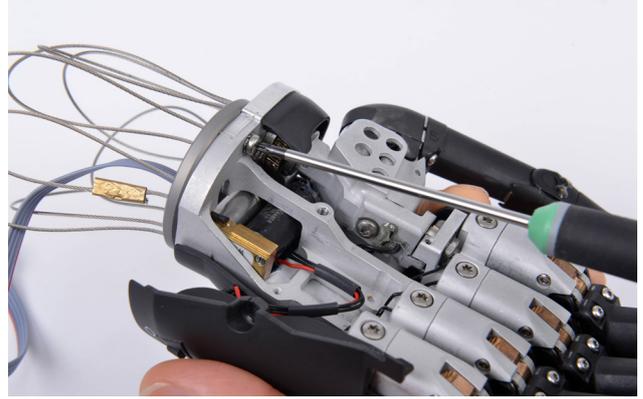


Fig. 15: Switch block connector

4.0 Battery Charging

To charge the prosthesis it should be removed from the residual limb and turned off. The on/off switch is pictured. i-limb® hand is off when switch is in left position.



4.1 Magnetic Charge Port

If using an internal battery within the prosthesis and using a magnetic charger:

The magnetic charge port allows the battery to be charged, the power switched on/off and the remaining battery level to be monitored at the one location.

To turn the power on/off

Press switch on charge port for 1 second to turn power on/off.

When the power is turned on: the lights will fully illuminate and then dull, remaining on at a low level.

When the power is turned off: the lights will fully illuminate and then turn off.

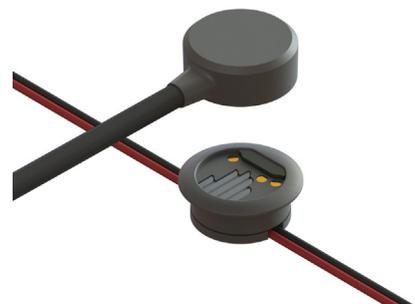
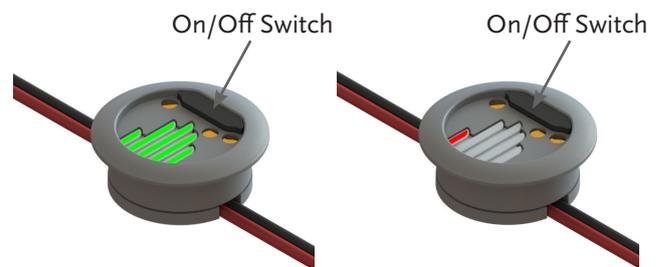
To check battery level

The power remaining in the battery can be checked by observing the bars when the power is on.

Each bar of light indicates 20% charge. The number of bars lit up will indicate the percentage of power remaining in the battery.

A red low battery warning light will indicate when 5% of the battery remains. The light will remain lit for 3 minutes and then the prosthesis will power off.

Note: An emergency reserve of power remains, allowing the prosthesis to be powered back on to release from object and ensure safety of the user.



Charging the battery

Plug the mains charger into the mains socket. Attach the magnetic charger to the charger port on the prosthesis.

When in standby, the charger unit will display a faint green light.

When charging is in progress, a red light is displayed.

When fully charged a green light is displayed.

Charging time: 90 minutes to 3 hours

A car charger is also available.



4.2 Switch block or DC charge port

If using an internal battery within the prosthesis and using a switch block or DC charge port:

To turn the power on/off

If using a switch block the power to the prosthesis can be turned on by pushing the switch away from the charge port. It is turned off by pushing the switch towards the charge port.

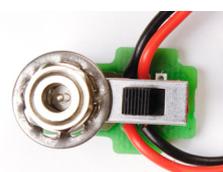


Fig. 16: Switch block

Charging the battery

Insert the charger into the power outlet. Insert the charger lead connector into the charge port. A “click” should be heard on connection.

The light display for the charger option 1 is:

- Solid Red: charging
- Solid Green: fully charged or idle
- Continuous flashing red: fault condition
- Rapid flashing amber: Threshold state between charging and fully charged (should only last for 1-2 seconds)
- Continuous flashing red or green: Connection Error. Remove charger lead connector from the charge port. Ensure charger is plugged in and switched on at the mains. Re-insert the charger lead connector into the charge port.

The light display for the charger option 2 is:

- Solid Amber: on standby
- Slow flashing amber: pre-charge mode
- Rapid flashing amber: Error
- Slow flashing green: maintenance charge
- Rapid flashing green: rapid charge
- Solid green: fully charged

Charging time: 90 minutes to 3 hours



Fig. 17: Charger option 1



Fig. 18: Charger option 2



The magnetic charger, DC port and switch block are an applied part.

A car charger is also available.

To remove the charger lead connector from the i-limb® hand, grip the connector and pull directly away from the port. Consult Warnings and Precautions for additional information.

If you intend to travel outside of your home country you will need to ensure that you have a Touch Bionics charger that will work in the country to which you are traveling.

4.3 External Battery

If using external batteries, remove the batteries from the prosthesis and insert into charger base unit. i-limb® Power Pack batteries for i-limb® hands should only be charged using the Touch Bionics battery charger supplied. Place the batteries in the charger as illustrated. Insert the charger lead from the battery powerpack into the charge port. Insert the charger into the power outlet.

On the underneath of the base unit the lighting sequence is outlined:

- Middle light on: Charger is plugged in
- 2nd and 5th lights blinking Green: Batteries are charging
- 2nd and 5th lights solid Green: Batteries are charged
- 1st and 4th Red lights on: Battery fault, unplug and try again. If lights continue to illuminate, contact Touch Bionics.

Charging time: approximately 2 hours.

A car charger cable is also available



Fig. 19: Battery charger

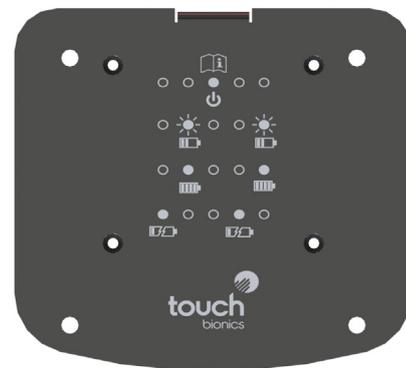


Fig. 20: Base plate



Do not pull cable to remove the lead.



Only use supplied Touch Bionics charger to charge battery.



Switch the hand OFF to preserve battery power when not in use.



Replace the battery annually for optimal performance.

5.0 Coverings

5.1 Covering options

Coverings are an important part of the appearance and durability of the i-limb® hand. The i-limb® should not be used without an approved cover.

Covering options for i-limb® hands include:

i-limb® skin active

robotic shaped flexible silicone, matching the shape of the i-limb® hand. Available in clear and black.



Fig. 21: i-limb® skin active

i-limb® skin contour

anatomically shaped flexible silicone with contouring around the digit tips. Available in clear and black.



Fig. 22: i-limb® skin contour

i-limb® skin natural

skin toned silicone covering. Available in 18 skin tones.



Fig. 23: i-limb® skin natural

i-limb® skin match

fully customised silicone covering, exactly matching the users' skin tone and features.

Touch screen (TS): feature allows you to interact with touch screen devices. Available on i-limb® skin active and i-limb® skin contour covers.



Fig. 24: i-limb® skin match



Fig. 25: Touch Screen feature

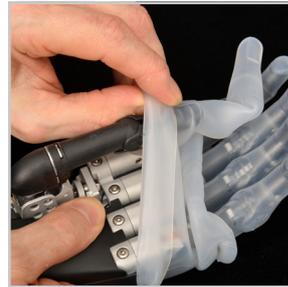
5.2 Covering don/doff

To don/doff i-limb® hand coverings the position shown in the image should be adopted and the hand switched off. The quick grip don/doff can also be used to achieve this position.



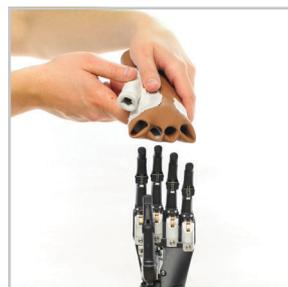
Donning the i-limb® skin active, i-limb® skin contour and i-limb® skin natural cover:

1. Align the covering with the fingers of the i-limb® hand and slide downwards
2. When the fingers are mostly donned, pull the thumb opening over the thumb
3. Slide the remainder of the covering over the i-limb® hand.
4. Ensure each digit tip is fitted to the covering
5. Do not pull the covering tightly over the hand



Donning the i-limb® skin match:

1. Spray the outer surface with isopropyl alcohol (IPA)
2. Invert the covering to the level of the finger openings
3. Ensure the fingers are straight and not bunched
4. Align the covering finger holes with the digits of the hand
5. Pull down onto digits of the i-limb® hand
6. Position thumb opening over thumb digit
7. Pull the covering over the remainder of the i-limb® hand being careful not to apply too much pressure over the thumb.



8. Inspect the covering for bunching and ensure the covering tips are fully fitted against the digit tips.
9. Check the function of the i-limb® hand and ensure full opening and closing is possible and the digit tips align.



Doffing for all covering types

1. Position the i-limb® hand in the same position as for donning and power off
2. Pull the covering upwards on each digit to release
3. Ease the full covering, being careful not to put too much pressure on the thumb
4. Continue to pull upwards until it is fully removed



Please note that the Touch Bionics i-limb® hand is not under warranty when it is used without an approved cover.



Never put more than one covering on the i-limb® hand.



Always ensure the covering is fitted properly.

6.0 Maintenance

The following maintenance can be carried out by a certified clinician. For annual service and repair the i-limb hand should be returned to touch bionics, for your local office see address at back of this manual.

6.1 Digit installation

i-limb® hands are only compatible with Touch Bionics digits.



Do not over tighten screws.



Used screws should be discarded and replaced using the new screws provided.

The following steps should be followed to replace a digit.

For extra small hands a T6 screwdriver is required.

For small, medium and large hands a T10 screwdriver is required.

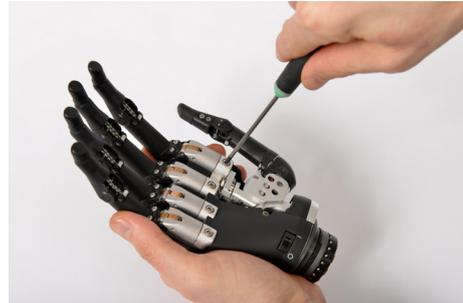
1. Ensure the i-limb® hand is switched off.
2. Use screwdriver to loosen the screw at the knuckle block and remove the digit.
3. Select the appropriate sized replacement digit and follow the steps in reverse to replace.
4. For extra small hands the screw should be torqued to 1 Nm. For all other hand sizes, hand tighten the screw.

6.2 Thumb installation

For **extra small hands** the thumb should be replaced using a T6 screwdriver and following these steps:

1. Rotate thumb to palmar position, so it is parallel with index digit.
2. Remove index digit
3. Loosen thumb knuckle block screw
4. Remove thumb

Replace the thumb following the steps in reverse ensuring thumb and index screws are torqued to 1 Nm.

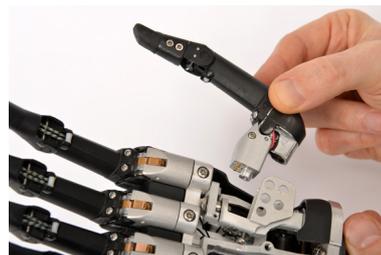
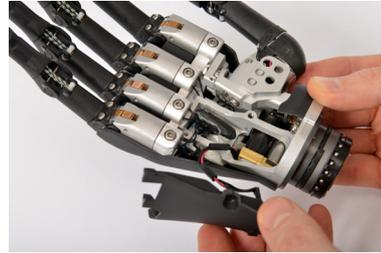
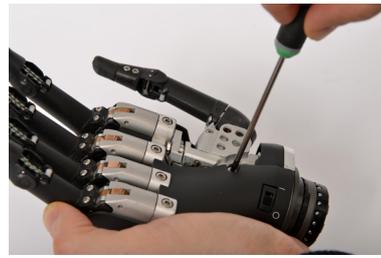


For **small, medium and large hands:**

To replace the thumb on all other sized hands use a T10 screwdriver and follow these steps

1. Rotate the thumb to the lateral position
2. Remove palmar fairing
3. Access thumb screw from medial to lateral direction
4. Remove thumb

Replace the thumb following the steps in reverse. When replacing the palmar fairing care should be taken to avoid pinching wires.



6.3 Cleaning

The i-limb hand can be cleaned with a soft damp cloth, with some mild soap.

The cover should be regularly cleaned on the outside with a damp cloth and a plain soap. Cleaning with isopropyl alcohol (IPA) once a week can help with disinfection. The cover or i-limb® hand should not be submerged in water for cleaning.

The electrode surface and the magnetic charge port surface can be cleaned with mild soap and a damp cloth. Do not use any strong chemicals within the socket.



Avoid use of oils on the skin; such as Vaseline or oil based moisturisers.



Avoid dirt or fluids coming in contact with the electrode.



Regularly clean the electrode contact surface with mild soap and a damp cloth.

6.4 Troubleshooting

Issue	Action
Hand does not operate	Ensure the hand is switched on Ensure the battery is charged and connected properly Ensure the hand is fully engaged at the wrist Check the electrodes have good contact with the skin Check the electrode cable is correctly fitted to the electrode
One digit does not operate	Run hand health check on biosim® Swap digit with a working digit to see if the issue is in the digit or the hand
Hand stops halfway through an action	Electrode settings may need adjusted – review on real time graph Check the electrode cable is not damaged Check the battery cable is not damaged
User reports hand is difficult to operate	Electrode settings may need adjusted – review on real time graph Ensure the electrodes maintain good contact with the skin Check electrode placement and wiring Ensure the battery has good charge
Hand will open but not close	Check the electrode wiring and connections Check electrode function by swapping the electrodes at the coaxial plug Check the hand set up on biosim®
Hand opens when a close signal is given	Check swap inputs box on biosim or switch the electrode connections on the coaxial plug
Battery does not last a full day	Fully charge the battery overnight Check the battery connection Check the user is not holding sustained signals Replace the battery
Battery is not working	Check the battery is charged and connected Check the wiring for signs of damage Ensure the charge port is not damaged Check charger lead and connection for signs of damage
How do I find the i-limb hand device number using the biosim app	When connecting to a prosthesis with the biosim app, the device number will be displayed on the connection screen. Selecting this connects the app to the i-limb hand. Alternatively, when connected to the app the device number is displayed in the 'about' section.

7.0 Appendix

7.1 Usage, safety, warnings and precautions

The i-limb® hand is intended to be used by individuals with upper limb loss or deficiency.

The i-limb® hand should be serviced annually by touch bionics.

The hand serial number consists of a letter followed by four numbers. It is located proximal to the base of the thumb. For extra small hands or those with a flexion wrist, the hand serial number is located within the chassis.

i-limb® hand

The end user is the intended operator of the device, and is responsible for its use.

Do not use without an approved cover.

Do not use under water.

Do not use to operate heavy/industrial machinery.

Do not use with machinery with moving parts that may cause personal injury or damage.

Users must comply with local regulations on the operation of automobiles, aircraft, sailing vessels of any kind and any other motorized vehicle or device.

Do not use for extreme activities that may cause injury to a natural hand.

Do not expose to excessive moisture, liquid, dust, vibration or shock.

Do not expose to high temperatures.

Do not expose to flames.

Do not use or expose to explosive atmospheres.

Do not disassemble componentry or modify in any way.

Do not service or perform maintenance on the equipment when in use.

Maintenance, repairs and upgrades may only be performed by qualified Touch Bionics technicians and technical partners.

Do not use with a damaged cover.

Damaged covers must be replaced or repaired by a qualified Touch Bionics technician or technical partner.

Only approved Touch Bionics accessories and tooling may be used.

Do not use an i-limb® device to operate your mobile device whilst the mobile device is connected to a mains outlet, as this can affect EMG signal.

Dispose of equipment in accordance with US, European or local regulations. Alternatively, it can be returned to touch bionics for disposal.



Fig.26: i-limb hand serial number

Batteries

Only touch bionics batteries should be used with this device.

Internal batteries must not be replaced by the end user.

Batteries are to be replaced annually by service personnel.

Do not bend or exert excessive pressure on the battery.

Do not pierce the battery.

Do not disassemble.

Do not expose to high temperatures.

Do not incinerate batteries.

Do not alter battery terminal wires.

Do not short circuit the battery.

Do not store batteries inside a vehicle.

Dispose of batteries in accordance with US, European or local regulations.

Only use the appropriate Touch Bionics charger to charge Touch Bionics batteries.

If the battery has visibly ballooned or swelled:

- discontinue the charging process immediately
- disconnect the battery
- remove to a safe area
- leave and observe for 15 minutes
- replace with new battery
- do not re-use
- dispose of any leaking batteries in an appropriate manner

If it is expected that the prosthesis will not be used for a prolonged period of time, it is advisable to remove the battery from the prosthesis.

Failure to comply with the above guidelines will invalidate the warranty.

Note: For advice on driving of motor vehicles, please refer to i-limb® hand user manual for Touch Bionics driving statement.

7.2 Technical Information

i-limb® hand				
Voltage	range 6 -8.4 V			
Max. Current	6 A			
Battery Capacity	Rechargeable lithium polymer 7.4 V (nominal); 2,000 mAh capacity; 1,300 mAh capacity			
Max hand load limit (static limit)	40 kg/88 lbs (Extra Small) 90 kg/198 lbs (Small/Medium/Large)			
Finger Carry Load (static limit)	20 kg/44 lbs (Extra Small) 32 kg/71 lbs (Small/Medium/Large)			
Time from full open to full close	0.8 seconds			
Device Weight (quantum and revolution) Note: Titanium digits add an additional 30g/0.07lbs per hand		Extra Small	Small	Medium/Large
	QWD	472g/1.04lbs	512g/1.13lbs	528g/1.16lbs
	WD	432g/0.95lbs	472g/1.04lbs	488g/1.08lbs
	Flexion	572g/1.26lbs	612g/1.35lbs	628g/1.38lbs
	Friction	467g/1.03lbs	507g/1.12lbs	523g/1.15lbs
Device Weight (ultra and access) Note: Titanium digits add an additional 30g/0.07lbs per hand		Extra Small	Small	Medium/Large
	QWD	432g/0.95lbs	468g/1.03lbs	478g/1.05lbs
	WD	392g/0.86lbs	428g/0.94lbs	438g/0.97lbs
	Flexion	532g/1.17lbs	568g/1.25lbs	578g/1.27lbs
	Friction	427g/0.94lbs	463g/1.02lbs	473g/1.04lbs

7.3 i-limb® hand Information

Hazardous Area Classification	
The i-limb hand is not intended for use outside the boundaries of the environments listed below. The user of the i-limb hand should assure that it is not used, transported or stored in such environments.	
Condition	Level
Maximum temperature	+70 °c
Minimum temperature	-40 °c
Hazardous Area Classification	Non Hazardous

7.4 Component Compatibility

Please refer to www.touchbionics.com/downloads/document-library for Electro Magnetic Compatibility (EMC) and Electrical Information for i-limb® products.

7.5 Warranty

Refer to www.touchbionics.com/downloads/document-library to review warranty information.

	<p>Consult instructions for use</p>
	<p>Class II equipment – provides double Isolation to protect against electric shock</p>
	<p>European Conformity</p>
	<p>Serial Number</p> <p>The unique serial number for i-limb® quantum devices is a “M” with a 6 digit alpha / numeric number.</p> <p>The unique serial number for i-limb® revolution devices is a “R” with a 6 digit alpha / numeric number.</p> <p>The unique serial number for i-limb® ultra devices is a “U” with a 6 digit alpha / numeric number.</p> <p>The unique serial number for i-limb® access devices is a “A” with a 6 digit alpha / numeric number.</p>
	<p>WEEE Compliance: This marking on the product, packaging, accessories or literature indicates that the product contains electronic components and/or batteries that should not be disposed of in regular waste at the end of its usable life. To prevent possible harm to the environment or human health from uncontrolled waste disposal users are requested to separate these items from other types of waste and recycle them responsibly to support sustainable reuse of material resources. Users should contact their local government office for information on how these items can be recycled or disposed of in an environmentally sound manner. To protect natural resources and to promote material reuse, please separate batteries and electrical components from other types of waste and recycle them through your local, free electronic parts return system.</p>
	<p>Catalog number</p>
	<p>Manufacturer/Date of manufacture (YYYY-MM)</p>
	<p>BF Applied Part</p>

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