



i-limb™ quantum User Manual



i-limbtm quantum

This document provides information for i-limb™ quantum users and should be used in conjunction with advice from your clinical team.



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

Refer to www.touchbionics.com/downloads/document-library to ensure you have the latest copy of this document.

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1.0 i-limb™ quantum

1.1 Product Description

precision. power. intelligent motion.

Based on the industry-leading design of our i-limb™ product range, the i-limb™ quantum combines unsurpassed functionality with style. The i-limb™ quantum incorporates gesture control powered by the patented and ground-breaking i-mo™ technology, and is the first upper limb prosthesis that can change grips with a simple gesture.

Key features include:

- Smarter – i-mo technology – use of simple gestures to change grips
- Faster – boost digit speed by up to 30%
- Stronger – 30% more power when needed, 50% longer battery life
- Anatomical styling now available in 4 sizes – smaller size hand suitable for women and children.

We are pleased that you and your clinical team have decided that the i-limb™ quantum is the most appropriate prosthetic hand for your needs. You may have discussed your functional goals with your clinical team. This manual, along with the training and support of your clinical team, should help you understand how the i-limb™ quantum will help you accomplish these goals.

Each digit of the hand has its own motor that allows the digits to run until they meet the object being grasped. The result of this is the hand taking the shape of that object (compliant grip). Fig. 1 is an example of a hand holding a ball with compliant grip. The power for the hand comes from a battery which has been built into the socket of your prosthesis that your prosthetist has made especially for you. Initially, you and your clinical team will develop control of opening and closing your hand. At this stage, you should be able to carry out a wide range of functional daily activities using your i-limb™ quantum hand.

It takes time and practice to gain control and master the best way to perform tasks with your prosthetic hand. The pace at which individuals gain this control varies.

Your i-limb™ quantum is covered under the Touch Care program. Please contact your clinician for details about your specific Touch Care coverage.

1.2 Intended Use

The i-limb™ quantum is intended to be used by patients with upper limb loss or deficiency.

Figure 1



1.3 Know Your Prosthesis

Each i-limb™ quantum has a unique identifying number called the serial number as depicted on the image to the right (fig. 2). For Extra Small devices and devices with a flexion wrist, the hand serial number will be located within the chasis of the hand. This is an important piece of information and we recommend that you make a note of it on page 19 of this manual.

The i-limb™ quantum will not provide you with sensation and so you will not be able to feel things such as heat and moisture. The i-limb™ quantum cannot absorb any shock as your own body is able to do.

If high degrees of force are applied, you may cause damage to your i-limb™ quantum. If this does happen, then please contact your clinical team who will contact Touch Bionics Customer Support team to resolve the matter as quickly as possible.

To best protect the hand when carrying objects, the weight should be distributed evenly across the digits as close to the knuckles and palm of the hand as possible rather than out on the tips of the digits. The image to the right (fig. 3) is an example of how to correctly carry objects.

The i-limb™ quantum is like any other electrical device so do not immerse in water and do not pour water over the device. When cleaning the covering use a damp cloth to remove any dirt.



Do not use i-limb™ quantum without an approved cover

If you have any specific questions about your i-limb device then please contact your clinical team or visit the Touch Bionics web site www.touchbionics.com for the latest information and news.

Figure 2



Figure 3



1.4 Know Your Prosthesis: Control Strategies

Your i-limb™ quantum hand can access automated grips using a range of control options. Your clinician will discuss with you in detail how these function for you.

Gesture control:

Gesture control enables an automated grip to be accessed through a smooth and natural motion of your prosthesis in 1 of 4 directions. The i-limb™ quantum hand is pre-programmed with a selection of practical grips. The grips can be changed with ease through the my i-limb™ app.

To access gesture control:

- Hold arm parallel to ground (elbow bent to 90°)
- Maintain an open signal (or co-contraction) until finger twitches
- Move your arm (within 1second) in direction assigned to desired grip
- i-limb™ quantum hand will adopt the grip

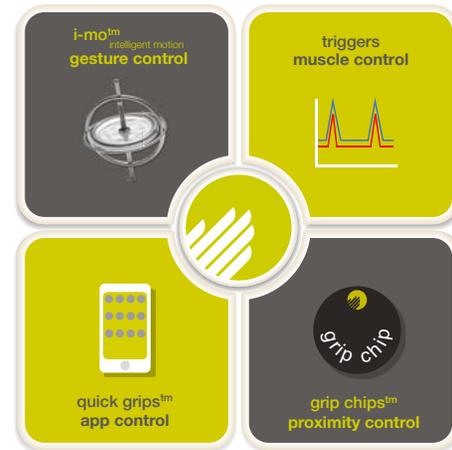
App control:

Your i-limb™ hand can access a grip at the touch of an icon on the my i-limb™ app, enabling all automated grips to be available to you. This is called quick grips™.

The user can simply open the my i-limb™ app on their mobile device to access quick grips™. Up to 24 different grips can be selected, allowing instant access to new grips with the tap of a button on the app screen. An additional 12 custom my grips™ may also be programmed offering the user up to 36 different grips.

The i-limb™ hand will exit automated grip when icon is tapped again, or by selecting another grip icon.

Speed boost is also available on the app using a simple slider bar. This increased speed can provide benefits of a more responsive action, more natural appearance of motion and increased grip force potential.



Muscle control:

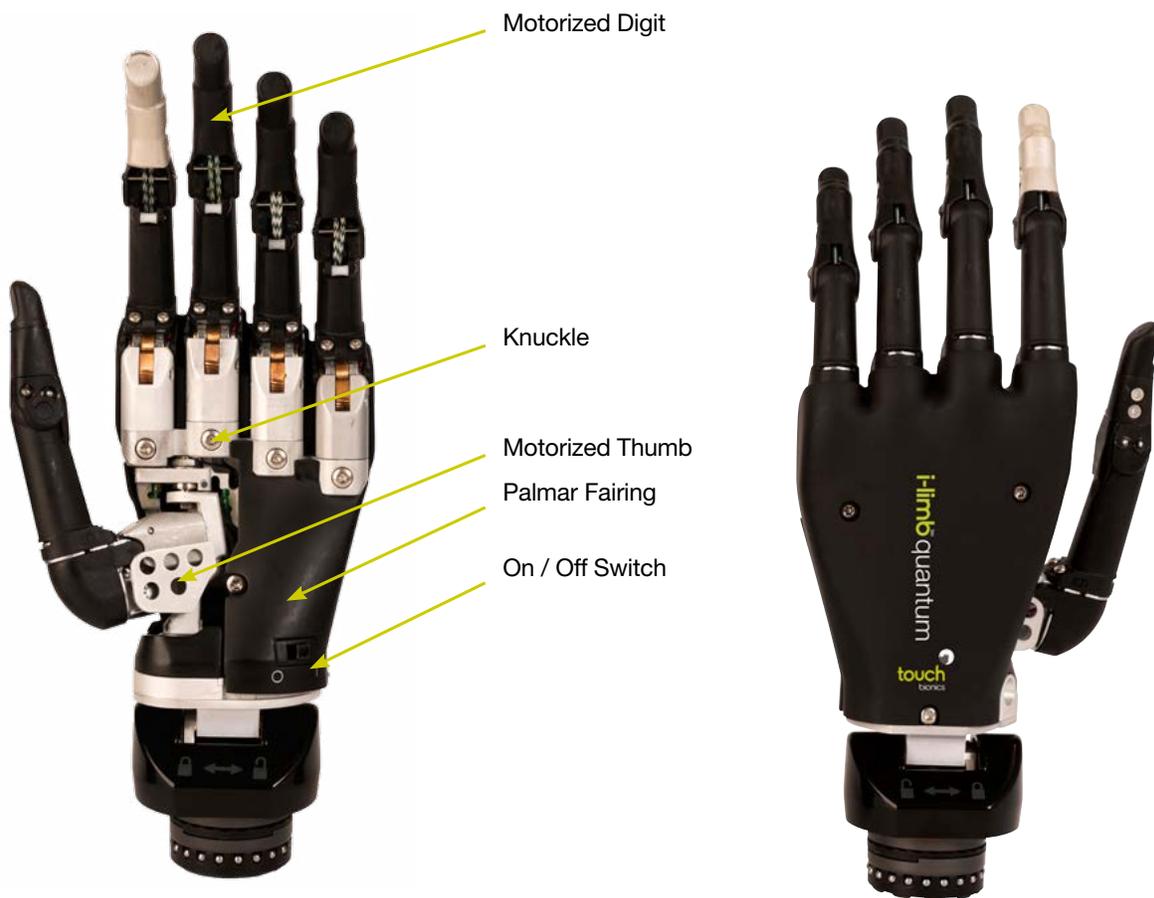
Triggers are specific muscle signals that you can use to instruct the i-limb™ quantum to activate an automated grip. There are 4 potential triggers: hold open, double impulse, triple impulse and co-contraction. Your clinician will teach you how to activate these muscle triggers.

Proximity control:

Grip chips™ are small Bluetooth® chips which can change the programming of your i-limb™ quantum hand when you position it near to the chip. Open the digits to full open position and relax so that signals are below the threshold. The hand will begin looking for a grip chip within range and will respond to the nearest chip. After 5 seconds the hand will stop looking for grip chips™ and revert to normal operation.

The grip chips™ can be positioned around your environment in practical locations to allow you to access the optimum grip for particular daily tasks. You can program the individual grip chips™ using your my i-limb™ app.

When using proximity control, connection to the iPod® should be disconnected (press “save” after setup), so that the hand can communicate with the grip chip.



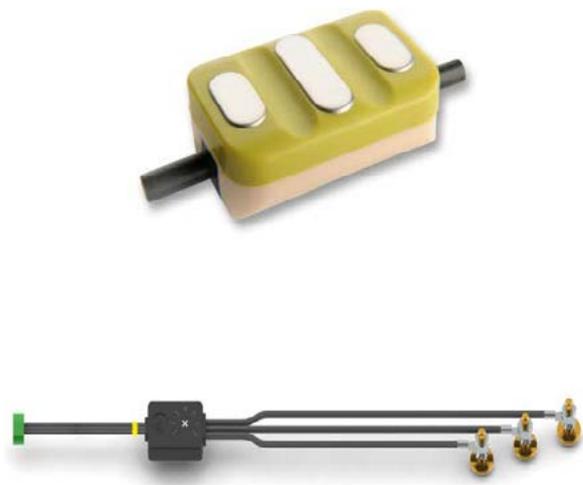
2.0 Control and Batteries

2.1 Control Options

To fit the i-limb™ quantum you have had a socket especially made for you by your clinical team. They will have made this to ensure it is comfortable and fits directly onto your residual limb. You may experience some redness but this should not last for very long after you remove the socket. If the socket is causing you discomfort or affecting you using your i-limb™ quantum then we recommend that you contact your clinician.

As part of the fitting process, your prosthetist selected the best method for you to provide control of your device. This communicates to the processor whether you want the i-limb device to open or close. The most common control option is called an electrode (fig. 4). To the right you will see two examples of the type of electrode that may have been used to build your prosthesis. Electrodes pick up on the electrical activity that your body gives off when you contract a muscle. While gaining good control may take time and practice, your method of input should not cause pain. Talk with your prosthetist if you do not understand how your input control is working or if it is causing discomfort. There are also other potential control options that your prosthetist may have determined to be the best option for you. If so, they will describe to you how that option works.

Figure 4 Electrode Options



2.2 Battery Charging

Please review the below instruction for proper battery charging.



Only use supplied Touch Bionics charger to charge battery. Depending on your location, you will receive one of the chargers as shown in figure 6 and 7.

You will need to remove the socket from your residual limb and turn the i-limb device off. The on/off switch is pictured in fig 5. i-limb device is off when switch is in left position.

Insert the charger (fig. 6 or fig. 7) into the power outlet. The charger will need to be inserted into the power outlet prior to connecting to the charge port. To charge, insert the charger lead connector into the charge port. A “click” should be heard on connection. If the green light is on when you first plug in the device, ensure the hand is off.

Figure 5



On/Off Switch

Charging time is approximately:
 1,300 mAh battery- 90 minutes
 2,000 mAh battery- 180 minutes

The light display for fig. 6 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 fig. 7 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

To remove the charger lead connector from the i-limb™ quantum, 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. Additional chargers are available from Touch Bionics.

As an alternative to charging directly from domestic power, a car charger (fig. 8) is provided with your i-limb™ quantum.

i-limb Power Pack batteries for i-limb™ quantum should only be charged using the Touch Bionics battery charger (fig. 9) 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.

Charging time from full discharge is approximately 2 hours.

On the base plate of the charger (fig. 10) you will see the various light sequences:

- 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 Customer Support.

Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



To ensure the i-limb™ quantum is continually functional, charge at the end of each day.



Do not pull cable to remove the lead



Replace the battery annually for optimal performance.



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

3.0 Grip Review

The i-limb™ quantum has 24 different pre-programmed grip options available and 12 customizable my-grips (not shown). These grips can be accessed and programmed through the my i-limb™ app. The following features catalogue will review the various available grips and provide a functional description of each.

For more information about biosim™-i or the my i-limb™ app and programming quick grips to various control strategies, please consult the respective manuals at www.touchbionics.com/downloads/document-library.

3.1 Features Catalogue

Precision Pinch Grip Options

Precision pinch grip options are best for picking up small items between the thumb and index finger. There are 4 options available depending on how you want the other digits to perform while doing the pinch. The most popular is Thumb Precision Pinch Closed.

Feature	Picture Example	Description	Use	Task Examples
Standard Precision Pinch Opened		Middle, ring and little fingers remain fully opened and switch off. Both index finger and thumb will move to provide grip.	Allows for a wider opening than thumb precision. Aids with visualization or for pinching objects where the non-active digits may get in the way.	<ol style="list-style-type: none"> 1. Return cards or money to wallet 2. Pick up napkins 3. Fold laundry
Thumb Precision Pinch Opened		Middle, ring and little fingers remain fully opened and switch off. Thumb automatically moves to a partially closed position. Only index finger will move to provide grip against the fixed thumb.	Accuracy is improved when picking up an object by allowing you to place the thumb against the object to be pinched. Only the index finger moves to grasp the object. Ideal for repetitive tasks.	<ol style="list-style-type: none"> 1. Pick up pencil or slim, long objects 2. Thread needle 3. Sort/Pick up medications
Standard Precision Pinch Closed		Middle, ring and little fingers automatically close and switch off. Both index finger and thumb will move to provide grip	Will allow for better visualization in some tasks, especially when the working surface is not at eye level.	<ol style="list-style-type: none"> 1. Slide small object from shelf over head 2. Pick up small object from floor
Thumb Precision Pinch Closed		Middle, ring and little fingers automatically close and switch off. Thumb automatically moves to a partially closed position. Only index finger will move to provide grip against the fixed thumb.	Can improve accuracy for picking an object by allowing you to place the thumb against the object to be pinched and only the index finger moves to grasp the object. Ideal for repetitive tasks.	<ol style="list-style-type: none"> 1. Pick up and open sugar packet from a coffee stand 2. Pick up coins 3. Alternative way to tie shoes (also see "lateral grip")

Tripod Grip Options

Tripod Grip Options provide a grip where the thumb is meeting up with the index and middle digits. Typically the thumb is rotated between the index and middle to provide more stability when gripping slightly larger objects than those with the precision pinch grips. As a result of having a motor in each digit and the hand conforming to the shape of the object being held, the hand will automatically form a tripod grip when the object is small enough to only be gripped between the thumb, index, and middle digits. The advantage of using the tripod grip options is if you want the ring and small digits to stay either fully open or fully closed when gripping.

Feature	Picture Example	Description	Use	Task Examples
Standard 3 Jaw Chuck (Tripod) Opened		Ring and little fingers remain fully opened and switch off. Thumb, index and middle fingers will move to provide grip	Allows for larger objects to be grasped using the tripod pinch. Can also improve positioning. May also decrease compensation at shoulder for tasks where closed digits get in the way of the pinch.	<ol style="list-style-type: none"> 1. Prepare food with ring and little finger clear, such as slicing cucumber or carrot 2. Hold cell phone (will manually rotate thumb laterally based on size of phone or setup custom grip)
Standard 3 Jaw Chuck (Tripod) Closed		Ring and little fingers automatically close and switch off. Thumb, index and middle fingers will move to provide grip.	Allows for the wider opening when using this feature with larger objects. Tripod grip allows greater stability for larger or round objects in comparison to precision pinch.	<ol style="list-style-type: none"> 1. Open bag of chips 2. Pull up socks
Thumb 3 Jaw Chuck (Tripod) Opened		Ring and little fingers remain fully opened and switch off. Thumb automatically moves to a partially closed position. Only index and middle fingers will move to provide grip against the fixed thumb.	For smaller motion, but increased accuracy. Tripod grip allows greater stability for larger or round objects in comparison to precision pinch. Can also decrease elbow compensation when seated.	<ol style="list-style-type: none"> 1. Grab spices from cupboard
Thumb 3 Jaw Chuck (Tripod) Closed		Ring and little fingers automatically close and switch off. Thumb automatically moves to a partially closed position. Only index and middle fingers will move to provide grip against the fixed thumb.	Can improve stability and control grasping larger objects. With thumb in a static position, your ability to align an object can improve particularly on small objects. Can also decrease elbow compensation when seated.	<ol style="list-style-type: none"> 1. Repetitive factory type work moving pieces 2. Grasp pen for writing 3. Laundry 4. Pack bag

Additional Grip and Gesture Options

With these additional grip patterns and gestures, consider how often you perform different tasks and if having a program for that activity would make it easier/faster for you to perform. Since each digit has its own motor, you can put pressure against any digit to stop it from moving (called stalling the digit). Many of these additional grips can be performed by stalling one or more digits. If it is a task that is not performed often (maybe using index point to press the "Shift" key on a keyboard) then you may prefer to just stall the digit. However, if you frequently perform the task or want to go into the position without needing to put the i-limb device against the table or your other hand, then programming the grip may be the better option.

Feature	Picture Example	Description	Use	Task Examples
Thumb Park Continuous		All four fingers remain fully open and switch off. Only the thumb will move.	For longer dressing period that will require more than the 1.5 seconds of thumb park quick or grasping light weight flat objects. Can also use stalling out digits to complete, putting pressure against index to little finger and closing thumb in to hand.	<ol style="list-style-type: none"> 1. Put on jacket 2. Grasp flat objects, such as a book or a tablet computer or clipboard 3. Allows readjustment of the object opening letters or sorting paperwork.
Thumb Park Quick		Thumb automatically rotates into opposition and fully closes. Thumb remains active. All four fingers fully open and switch off. For 1.5 seconds only thumb will move, after which the hand automatically returns to normal function.	Dressing or putting on a coat. You can achieve this position by using the stall out capability of digits against a table if you do not want to program.	<ol style="list-style-type: none"> 1. Put on jacket or shirt
Lateral Grip		Thumb automatically rotates into lateral position and partially closes. All four fingers fully close and switch off. Only thumb will move.	Holding onto plate, papers, CD or other flat objects. Improved stability with use of the side of the index finger.	<ol style="list-style-type: none"> 1. Hold plate while serving food 2. Hold clipboard 3. Get card from ATM 5. Open zip lock bag 6. Tie Shoe Laces
Index Point		Thumb automatically rotates into lateral position and fully closes. Thumb switches off. Middle, ring and little fingers fully close and switch off. Index finger remains open and active	Used for pushing buttons, typing on computer, or simply pointing. Can be achieved with stall out.	<ol style="list-style-type: none"> 1. Keyboarding (hitting shift key, CTRL, ALT, DEL, general typing) 2. Push Button for elevator
Customer Gesture		All digits automatically move to a user defined position with each digit option as open or closed.	Allows user to fully customize the hand. Many positions can be obtained using stall out if the user does not have enough available triggers to use this feature.	<ol style="list-style-type: none"> 1. Boy scout salute 2. Sign Language gestures such as "I love you"
Custom Grip		Digits move to user defined position with options for degree of open or closed and option to keep selected digits "active".	Can be used to fully customize for use of specific tool or work or hobby. Multiples can be set up as "favorites" on iPod.	<ol style="list-style-type: none"> 1. Customize grip to specific work or hobby type tool 2. Supporting and operating a camera

Feature	Picture Example	Description	Use	Task Examples
Rotate Thumb		Thumb and all four fingers fully open and switch off. Only thumb will rotate	No flexion or extension of the digits will occur, one signal will rotate thumb out to the side and the other will rotate into the palm	1. Used to position the thumb when you do not want to use the manual override. Can ONLY be used if the option to rotate the thumb when exiting the feature is turned off.
Open Palm		Thumb automatically rotates laterally and closes partially. All fingers remain open. All digits switch off.	For tasks where balancing an object on the open hand is useful.	1. Stabilize a tray of food 2. Balance a Bowl
Cylindrical		Thumb rotates automatically to a semi lateral position. All digits are active in this feature	Many handled type objects require this cylindrical grip. You can also use the manual override of the thumb to position manually rather than having to use this feature.	1. Broom Handle 2. Shovel or Rake 3. Hair Brush or Hair Dryer
Mouse		Hand forms shape appropriate for using a computer mouse.	Note that multiple steps are involved in this grip: Step 1: Enter the feature using either the trigger or quick grips™ Step 2: Place the closed little finger against the side of the mouse. Step 3: Provide a close signal until the thumb rests against the other side of the mouse (the thumb must detect pressure, so you may also provide pressure with your other hand if the thumb will not stop) Step 4: The index digit will now close with the signal to click the left mouse button, relaxing signal will re-open.	1. To left click, use signal to close index digit 2. To right click use motion of the arm to put pressure on the mouse from the ring digit
Handshake		Thumb automatically rotates into semi lateral position and partially closes. All fingers flex slightly from fully open position. When a close signal is given the fingers close, when this signal is relaxed the fingers open.	As soon as you relax the signals the hand will automatically re-open.	1. Shaking hands

Feature	Picture Example	Description	Use	Task Examples
Grasp		Hand adopts partially closed position. When a close signal is given the hand closes at full speed (no proportional control). When the close signal is relaxed the hand will fully open and then reposition into its partially closed starting position again.	For grasping objects where crushing the object is not a concern. Note that as soon as you stop giving a signal the hand will open automatically and reset to the slightly flexed position.	<ol style="list-style-type: none"> 1. Sorting objects 2. Grasping large soft objects such as socks when packing a suitcase
One Finger Trigger		Thumb automatically rotates into opposition and partially closes. All fingers partially close. When a close signal is given the thumb, middle, ring and little fingers close. Once they have stalled around an object the next close signal will operate the index finger in squeeze mode (when a close signal is given the index will close, and when the close signal is relaxed the index will open).	Note this feature requires multiple steps: Step 1: Enter the feature using either the trigger or "Quick grip". Step 2: Provide a close signal until the thumb, middle, ring, and small digits have fully closed around the object being held. Step 3: Providing a close signal will close the index digit onto the trigger and relaxing the signal will re-open the digit.	<ol style="list-style-type: none"> 1. Pulling trigger on a small spray bottle
Trigger Two Finger		Thumb automatically rotates into opposition and partially closes. All fingers partially close. When a close signal is given the thumb, ring and little fingers close. Once they have stalled around an object the next close signal will operate the index and middle fingers in squeeze mode (when a close signal is given the index and middle fingers will close, and when the close signal is relaxed the index and middle fingers will open).	Note this feature requires multiple steps: Step 1: Enter the feature using either the trigger or "Quick grip" Step 2: Provide a close signal until the thumb, ring, and small digits have fully closed around the object being held Step 3: Providing a close signal will close the index digit onto the trigger and relaxing the signal will re-open the index and middle digits	<ol style="list-style-type: none"> 1. Pulling trigger on spray bottle
Thumb Trigger		Thumb automatically rotates to a semi lateral position and partially closes. All fingers partially close. When a close signal is given, fingers will close around the object, once fingers are stalled the thumb will operate in squeeze mode (when a close signal is given the thumb will close, when the close signal is relaxed the thumb will open).	Note this feature requires multiple steps: Step 1: Enter the feature using either the trigger or "Quick grip". Step 2: Provide a close signal until the index, middle, ring, and small digits have fully closed around the object being held. Step 3: Providing a close signal will close the thumb onto the trigger and relaxing the signal will re-open the thumb.	<ol style="list-style-type: none"> 1. Pressing down on a small aerosol can button
Donning or Doffing a cover		Hand forms the proper shape for donning and doffing a cover.	When changing out covers for the hand to avoid too much pressure against the thumb.	<ol style="list-style-type: none"> 1. Putting on covers 2. Taking off covers

4.0 i-limb™ quantum Coverings

4.1 Cover Options

Coverings are an important part of the appearance and durability of upper limb prostheses. The Touch Bionics i-limb products are the first prosthetic hands and fingers to imitate the individual digit articulation of the human hand, and we provide flexible coverings which enable that articulation. Our covering solutions include:

i-limb™ skin contour

- Anatomically shaped flexible silicone
- Slip coating inside for ease of donning & doffing
- Also available with Touch Screen (TS) option
- Colors: Clear, Light, Tan



i-limb™ skin active:

For users who prefer the robotic nature of the uncovered i-limb prosthesis, i-limb skin active is a thin layer of semi transparent or black material that has been designed to conform to every contour of the hand.



i-limb™ skin active TS:

In addition to all the benefits of the i-limb skin active, the i-limb skin active TS allows users to use touchscreen devices such as smartphones or tablets with compatible i-limb prostheses.



i-limb™ skin natural:

Providing the user a lifelike silicone covering, i-limb skin natural is available with 18 different skin shades.

Benefits include:

- Don or doff in under a minute without the assistance of a clinician
- Improved design optimizes hand power and precision pinch mode



i-limb™ skin match:

For the most realistic covering option possible, this is a fully customized silicone covering that exactly matches the user's skin tone and features.



The cover of the i-limb™ quantum is very important. The i-limb™ quantum should not be used without an approved cover that is well maintained.

Please consult the Coverings Care Guide for donning and doffing instructions as well as tips on wear and care. Coverings Care Guide is available online at www.touchbionics.com/downloads/document-library.

Please contact your clinician for ordering information.



5.0 Support Information

5.1 Troubleshooting

Problem	Action
Does not operate	<ul style="list-style-type: none">Ensure the prosthesis is switched “on” at the switch on the hand and on any addition power switch you may have on your prosthesisEnsure the battery is chargedEnsure the electrodes are making good contact with your skinEnsure the hand is engaged at the wrist
Stops midway through an action	<ul style="list-style-type: none">Check that the i-limb™ quantum device is engaged at the wrist
Difficult to operate	<ul style="list-style-type: none">Ensure battery has good chargeReview with your clinical practitioner
Battery charge does not last a full day	<ul style="list-style-type: none">Fully charge the battery. This may take up to 2 hoursEnsure that you are not holding excessive sustained muscle signals. Review your muscle signal control with your clinician
Battery is not working	<ul style="list-style-type: none">Ensure the battery charger is working correctly and the appropriate lights are shown on your charger when charging - Refer to section 2.2 for proper chargingCheck that battery is charged
Digits open when a closed signal is activated	<ul style="list-style-type: none">Contact your prosthetist

5.2 General Safety, Warnings and Precautions

i-limb™ quantum

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 e.g. rock climbing

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

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 with the i-limb™ quantum

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

Batteries

Do not bend or exert excessive pressure on the battery

Do not pierce the battery

Do not disassemble the battery

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

CAUTION: If the battery has visibly ballooned or swollen:

- 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

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

Driving of Motor Vehicles



The i-limb™ quantum has the functional capability to assist a patient with driving a motor vehicle however due to factors including the differences in world-wide driving regulations and the variations in the level of ability between patients, Touch Bionics is unable to provide definitive advice in respect of a patient with an i-limb device driving a motor vehicle.

Touch Bionics is aware that individuals have used the i-limb to drive a motor vehicle and our recommendations prior to a patient doing so would include the following:

- contacting the driving authority in your home location to obtain and understand the local regulations;
- working with the appropriate authorities to have your car modified to meet the local regulations for your respective disabilities as required;
- re-taking any mandatory driving test using your i-limb device to demonstrate your ability to operate a motor vehicle safely if required by local regulations;
- contacting your insurance provider and advise them that you will be using the i-limb device to drive a motor vehicle;
- ensuring that the device has a fully charged battery. Please note that the i-limb device will emit a low battery signal which will alert you if the battery requires to be charged;
- switching off the i-limb device. This is due to the possibility of involuntary muscle signals being generated; and
- moving the thumb into the lateral position to allow the i-limb to be removed from the steering wheel without opening the hand.

It is entirely the patient's responsibility to seek confirmation that they are physically and legally able to drive using the device and to the fullest extent permitted by law Touch Bionics shall under no circumstances whatsoever be liable to the patient or any other party as a result of or in connection with a patient with an i-limb device driving a motor vehicle.

6.0 User Information

6.1 User Details

Provision of the following basic information will enable easy identification if the prosthesis is returned to Touch Bionics customer service.

User Name:

Fitting Date:

Hand Purchase Date:

Hand Serial Number:

Prosthetist Name & Contact Information:

Therapist Name & Contact Information:

7.0 Appendix

7.1 Technical Information

i-limb™ quantum	
Voltage	7.4 V (nominal)
Max. Current	5 A
Battery Capacity	Rechargeable lithium polymer 7.4 V (nominal); 2,000 mAh capacity; 1,300 mAh capacity
Max hand load limit (static limit)	40kg/88lb (Extra Small) 90kg/198lbs (Small/Medium/Large)
Finger Carry Load (static limit)	20kg/44lbs (Extra Small) 32kg/71lbs (Small/Medium/Large)
Time from full open to full close	0.8 seconds
Device Weight	Weight with QWD: 472g/1.04lb (Extra Small); 512g/1.13lbs (Small); 528g/1.16lbs (Medium/Large) Weight with WD: 432g/0.95lbs (Extra Small); 472g/1.04lbs (Small); 488g/1.08lbs (Medium/Large) Weight with flexion wrist: 572g/1.26lbs (Extra Small); 612g/1.35lbs (Small); 628g/1.38lbs (Medium/Large) Weight with friction wrist: 467g/1.03lbs (Extra Small); 507g/1.12lbs (Small); 523g/1.15lbs (Medium/Large)

7.2 i-limb™ quantum Information

Hazardous Area Classification	
The i-limb™ quantum device is not intended for use outside the boundaries of the environments listed below. The customer or user of the i-limb™ quantum device should assure that it is not used in such environments.	
Condition	Level
Maximum temperature	+70°C
Minimum temperature	-40°C
Hazardous Area Classification	Non Hazardous

7.3 Component Compatibility

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

7.4 Warranty

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

	Consult instructions for use
	Class II equipment – provides double Isolation to protect against electric shock
<p data-bbox="448 558 496 579">IP40</p>	<p data-bbox="805 447 1089 474">Degree of protection – IP40</p> <p data-bbox="805 554 1451 638">Protection against penetration by solid particles with diameters larger than 1 mm. No special protection against penetration by water</p>
	<p data-bbox="805 770 951 798">Serial Number</p> <p data-bbox="805 984 1455 1098">For i-limb™ quantum devices: The unique serial number for i-limb™ quantum devices is a “M” with a 4 digit alpha / numeric number.</p>
	WEEE Compliance
	Catalogue number
	Manufacturer/Date of Manufacturer
	European Conformity



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MA01334 rev 2, Jun 2016