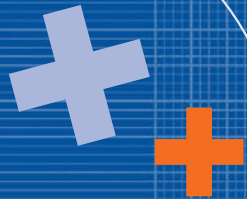


neurotech®



Instruction manual


kneehab™

Caution: In the United States of America federal law restricts the device to sale or use by, or on the order of a physician or other practitioner licensed by the laws of the state in which he/ she practices.

Advanced Therapy for Knee Injuries

Introduction

Dear Customer

Thank you for choosing Kneehab XP™ **neurotech**®. We have developed Kneehab XP™ to provide a unique, convenient, user-friendly treatment for quadriceps atrophy (thigh muscle weakness). Utilising MULTIPATH™ stimulation technology, which is a highly advanced form of muscle stimulation for injury rehabilitation, Kneehab XP™ is designed to deliver strong, comfortable quadriceps contractions thereby ensuring a faster rehabilitation period.

To see the benefits of Kneehab XP™ and MULTIPATH™ technology in more detail, please see the Frequently Asked Questions on page 7 for a full explanation.

Your Kneehab XP™ pack contains everything you need to begin treatment, including your Kneehab XP™ Control Unit, Kneehab XP™ garment, a set of adhesive electrodes, battery charger and a user manual.

The adhesive electrodes need to be replaced periodically and are readily available by contacting your local **neurotech**® supplier.

If you have further questions regarding Kneehab XP™, please contact your prescribing clinician or contact your **neurotech**® team at the address/ phone numbers below.

Yours sincerely,
The **neurotech**® Team.

If you have questions or require further information please contact:

neurotech®

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TABLE OF CONTENTS

1.0	Safety Information	4
2.0	Contra-Indications	5
2.1	Warnings	5
2.2	Precautions	5
3.0	Frequently Asked Questions	7
4.0	Getting to Know KneeHab XP™	9
4.1	KneeHab XP™ Pack Contents	9
4.2	Description of Controls	10
4.3	Description of Unit Display	11
4.4	Description of Garment	11
5.0	Setting-Up a KneeHab XP™ Treatment	12
5.1	Step-By-Step Treatment Guide	14
6.0	Problem Solving Guide	17
7.0	System Maintenance	18
7.1	Accessories	19
8.0	Technical Specifications	20
9.0	Warranty	21

1.0 Safety Information

Validity

The information and technical data contained in this document relates to the Kneehab XP™ Electrical Muscular Stimulator provided with this User Manual. Each Kneehab XP™ unit is attributed a serial number which is located on the back of the Control Unit. The information and technical data disclosed in this document are proprietary to Bio-Medical Research Ltd. (BMR?Ltd.) and may only be used and disseminated for the purposes and to the extent specifically authorised in writing by the company.

Disclaimers

All items of equipment manufactured and sold by BMR Ltd. are rigorously checked and tested prior to shipment. However, the use of this equipment is outside of the control of the company. BMR Ltd. only accept responsibility for the safety, reliability and performance of the equipment when it is operated in accordance with the instructions herein and within the given specifications. Therefore, the user must bear full responsibility for any actions arising out of the use or misuse of this equipment. Any modifications, repairs or servicing must be undertaken by authorised BMR Ltd. personnel.

Kneehab XP™ is designed by and manufactured for BMR Ltd., Parkmore Business Park West, Galway, Ireland. Copyright © 2007 by BMR Ltd., all rights reserved. **neurotech®** is a registered trademark of BMR Ltd. Kneehab is a registered trademark of BMR Ltd. in the EU. Registration is pending in the U.S.

The sale and/or operation of this equipment is subject to legislation in a number of localities. Compliance with this legislation rests with the importer, dealer, or user of the equipment as appropriate.

Intended Use: Neuromuscular Electrical Stimulation

Kneehab XP™ applies muscle and nerve stimulation using the principles of Neuromuscular Electrical Nerve Stimulation (NMES), which is defined below. It applies brief electrical pulses through skin surface adhesive electrodes.

Neuromuscular Electrical Stimulation (NMES)

NMES may be defined as the application of electrical stimulation of the peripheral nervous system to contract a muscle either through the direct activation of the motor neurons in the mixed peripheral nerve, or indirectly through reflex recruitment.

NMES Indications

- Muscle re-education
- Prevention or retardation of disuse atrophy
- Maintaining or increasing range of motion

2.0 Contra-Indications

- Powered muscle stimulators should not be used on patients with cardiac demand pacemakers / defibrillators.

2.1 Warnings

- The long-term effects of chronic electrical stimulation are unknown.
- Stimulation should not be applied over the carotid sinus nerves, particularly in patients with a known sensitivity to the carotid sinus reflex.
- Stimulation should not be applied over the neck or mouth. Severe spasm of the laryngeal and pharyngeal muscles may occur and the contractions may be strong enough to close the airway or cause difficulty in breathing.
- Stimulation should not be applied transthoracically, in that the introduction of electrical current into the heart may cause cardiac arrhythmias.
- Stimulation should not be applied transcerebrally.
- Stimulation should not be applied over swollen, infected, or inflamed areas or skin eruptions, e.g. phlebitis, thrombophlebitis, varicose veins, etc.
- Stimulation should not be applied over, or in proximity to, cancerous lesions.

2.2 Precautions

- The safety of powered muscle stimulators for use during pregnancy has not been established.
- Caution should be used for patients with suspected or diagnosed heart problems.
- Caution should be used for patients with suspected or diagnosed epilepsy.
- Caution should be used in the presence of the following:
 - When there is a tendency to haemorrhage following acute trauma or fracture;
 - Following recent surgical procedures when muscle contraction may disrupt the healing process;
 - Over the menstruating or pregnant uterus;
 - Over areas of the skin which lack normal sensation.
- Some patients may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium.
- Electrode placement and stimulation settings should be based on the guidance of the prescribing practitioner.
- Powered muscle stimulators should be kept out of the reach of children.
- Powered muscle stimulators should be used only with the leads and electrodes recommended for use by the manufacturer.
- (FOR PORTABLE DEVICES ONLY): Portable powered muscle stimulators should not be used while driving, operating machinery, or during any activity in which involuntary muscle contractions may put the user at undue risk or injury.
- Operation in close proximity to shortwave or microwave therapy equipment may produce instability in the stimulator output.
- Electronic monitoring equipment (such as ECG monitors and ECG alarms) may not operate properly when the stimulator is in use.

Please do not use KneeHab XP™ if:

- Positioning the electrodes necessitates placement over areas at which drugs/ medicines are administered by injection (short term or long term) e.g. Hormone treatment.

Adverse Reactions

- Skin irritation and burns beneath the electrodes have been reported with the use of powered muscle stimulators. Contact Bio-Medical Research Ltd. or **neurotech®** if any irritation, skin reaction, hypersensitivity or other adverse reaction is experienced - discontinue use in the meantime. Note, however, that a slight reddening of the skin is quite normal under the electrodes during and for a short time after treatment.

Note:

- You should always leave at least 6 hours between treatment sessions to reduce the potential for muscle fatigue.
- For hygiene reasons, the garment and electrodes are for single-person use only.

Important

- There is a separate KneeHab XP™ garment for use with the right or left leg. Under no circumstances should the left garment be used on the right leg or vice versa. A letter printed on every garment (L or R) indicates which leg that garment is designed for i.e. L: left, R: right.
- Position your KneeHab XP™ only as outlined in this User Manual. Ensure the light-blue binding at the narrow end of the garment is placed just above the kneecap.
- Do not adjust the KneeHab XP™ garment when the unit is switched on; pause the device, make the adjustment then recommence treatment.
- The safety information provided in this User Manual must be followed.

European Union Only

Note: In accordance with the laws within the member state, safety testing on the device should be carried out every two years.

Note: In compliance with German law, product safety testing must be conducted every two years by an authorised test service.

3.0 Frequently Asked Questions

Q: What is KneeHab XP™?

A: KneeHab XP™ is a unique, innovative, garment-based Electrical Muscle Stimulation (EMS) product designed specifically to treat quadriceps atrophy (thigh muscle weakness). Clinical research has shown EMS technology to be an efficacious treatment for quadriceps atrophy, which is a symptom of almost all knee injuries. KneeHab XP™ can be used both pre- and post-operatively to accelerate knee rehabilitation. KneeHab XP™ is also effective in the treatment of quadriceps atrophy resulting from certain hip or lower limb conditions e.g. hip osteoarthritis or after hip replacement surgery.

Q: What is MULTIPATH™?

A: KneeHab XP™ utilises MULTIPATH™ stimulation technology, which is a highly advanced form of electrical muscle stimulation for injury rehabilitation. MULTIPATH™ optimises rehabilitation through strong, comfortable quadriceps contractions.

EMS has been used for over 50 years to re-activate and strengthen weak muscles. MULTIPATH™ is a major breakthrough in this area, utilising sophisticated modern engineering and software technology to focus stimulation precisely in those parts of the muscle that optimise muscle contraction.

MULTIPATH™ stimulation enables KneeHab XP™ to deliver highly-focused, accurate and comfortable quadriceps contractions.

Q: What should KneeHab XP™ feel like when operating?

A: When you switch KneeHab XP™ on and gradually increase the intensity, you will feel a mild, comfortable “tingling” or “buzzing” sensation in your quadriceps muscles. As you increase the intensity, the muscles will begin to contract.

The channel on the inside of your thigh will increase the intensity in the inner part of the quadriceps (called the Vastus Medialis). For some conditions, your clinician may recommend you only use this channel. The channel on the outside of your thigh will increase the intensity in the rest of the quadriceps. Both channels are used together in general use.

KneeHab XP™ assists in the stabilisation of the knee by contracting the inner quadriceps before the outer quadriceps.

Q: How can KneeHab XP™ help rehabilitate the knee?

A: The quadriceps muscle is the most important stabiliser of the knee. After knee injuries or knee surgery, pain and swelling often cause disuse, which leads to muscle atrophy. An essential component of rehabilitation after knee injury is strengthening of the quadriceps muscle. KneeHab XP™ works by re-educating and strengthening the quadriceps muscle through cycles of contraction and relaxation. KneeHab XP™ is a highly effective, yet simple and convenient way to rehabilitate quadriceps atrophy after injury or surgery.

Q: How often should I use KneeHab XP™?

A: Your prescribing clinician will advise you on the duration of your treatment program.

Q: What should I do if treatment becomes uncomfortable?

A: Effective treatment should not cause undue discomfort. If treatment becomes painful, try lowering the intensity level slightly, then gradually build back up to previous level. If discomfort persists, **neurotech**® recommends that you contact your prescribing clinician who will advise you on usage of KneeHab XP™ to minimise discomfort.

Q: Can KneeHab XP™ be used in conjunction with other forms of therapy?

A: KneeHab XP™ can be used as an adjunct to most forms of therapy for knee injuries. See page 4 of the User Manual for Contra-Indications (situations when KneeHab XP™ should not be used).

Q: How often should I replace the adhesive electrodes?

A: This depends on a number of factors including skin type, storage conditions and regularity of use. As a general rule, however, with daily application the electrodes should last at least 4 weeks. If usage is less than this, replacement should be less frequent. Please store the adhesive electrodes in accordance with the instructions on page 16 of the User Manual.

Q: How do I position KneeHab XP™ on the leg?

A: See pages 12-16 of this User Manual for full instructions on positioning KneeHab XP™ on the leg.

Q: Can KneeHab XP™ be used on other body parts?

A: **neurotech**® strongly recommends that KneeHab XP™ only be used as directed in this User Manual and not applied to any other body parts.

Q: How should I care for my KneeHab XP™?

A: See page 18 of the User Manual for full instructions on caring for your KneeHab unit

Q: Can I move around while using KneeHab XP™?

A: If you need to move around during a treatment session, press the On/Off (Pause) button briefly, to pause the treatment. To complete the treatment session, just press the On/Off (Pause) button a second time.

Q: Who should I contact if I have additional queries?

A: Contact your prescribing clinician or your **neurotech**® team if you have any questions regarding usage of KneeHab XP™.

Q: What should I do if I experience an adverse reaction?

A: If any irritation, skin reaction, hypersensitivity or other adverse reaction is experienced, discontinue use and contact your prescribing clinician. A slight reddening of the skin is normal under the electrodes during and for a short time after treatment. This should disappear within approximately 30 minutes.

4.0 Getting to know Kneehab XP™

Kneehab XP™ is a portable, two-channel transcutaneous electrical muscle stimulator which operates using constant current pulses to stimulate the nerves in the quadriceps area of the body using **neurotech**®'s MULTIPATH™ technology. These pulses are designed to cause muscular contractions through the application of electrical stimulation to the peripheral nervous system. Kneehab XP™ is an easy to use, garment-based solution, specifically designed for home use.

Battery Information

The unit is powered by a 3.6V NiMH rechargeable battery. A battery charger is included with the product.

4.1 Kneehab XP™ Pack Contents

1. Kneehab XP™ Control Unit

The unit generates signals which are sent, via the electrodes, to your muscles, to make them contract. Your unit is rechargeable and takes approximately 3 hours to charge fully.

2. Kneehab XP™ Garment:

Universally sized garment, which fastens around your thigh, above the kneecap, for quick and easy use. It contains a connector socket, into which the Control Unit is plugged. Please ensure you have the correct garment (Left/ Right leg) before using Kneehab XP™.

3. Battery Charger:

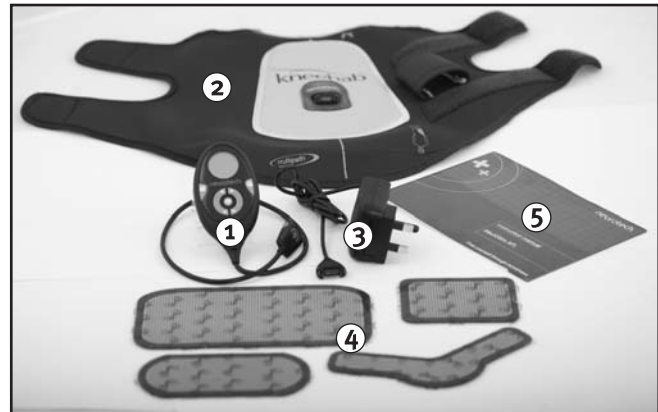
Kneehab XP™ is supplied with a charger. To charge the battery pack, connect the Control Unit to the charger and plug the charger into a main's supply socket.

4. Kneehab XP™ Adhesive Electrodes:

The electrodes are placed on the garment to conduct signals from the unit to the quadriceps muscles.

5. Kneehab XP™ User Manual:

The Kneehab XP™ User Manual provides a guide to product use and safety information.



4.2 Description of Unit Controls

1. On/Off Button (⏻)

Press and hold this button for 3 seconds to turn your unit on or off. During a treatment session, you can pause the stimulation by briefly pressing this button. To un-pause, briefly press this button again.

2. Intensity Buttons (▼/▲)

Press and hold these buttons to increase and decrease the intensity of the stimulation. The right-hand buttons control the right-hand side of the garment. The left-hand buttons control the left-hand side of the garment.

3. Programme Button (P)

Press and hold this button for 3 seconds before starting a treatment session to change the selected stimulation program.

Note: Your prescribed KneeHab XP™ model may only have 1 stimulation programme.

Press and hold this button for 3 seconds during a treatment session to activate/ deactivate the intensity button lock function. You can use this function to prevent accidental changes of intensity during a treatment session.

4. Information Button (i)

Press this button briefly at any time to toggle through the following displays:

- Current Intensity level for left and right sides
- Total Treatment Time in hours and minutes
- Average Intensity level over the last 4 sessions for left and right sides
- Return to original display

Press and hold this button for 3 seconds to activate/ deactivate the mute function.



4.3 Description of Unit Display

The following icons appear on the Unit Display at various times throughout the treatment.

(50) Toning intensity from the left-hand side of the garment

45) Toning intensity from the right-hand side of the garment

0:08 Counts down the time left in the current session in minutes and seconds.

|| Indicates that the session has been paused.

🔇 Indicates that the mute function is activated

🔑 Intensity button lock is active

⚠️ This warning symbol indicates a poor contact between the unit and garment or between the electrodes and the skin (see page 17 for more details).

🔋 Shows the battery power remaining.

📺 Shows the programme currently running.

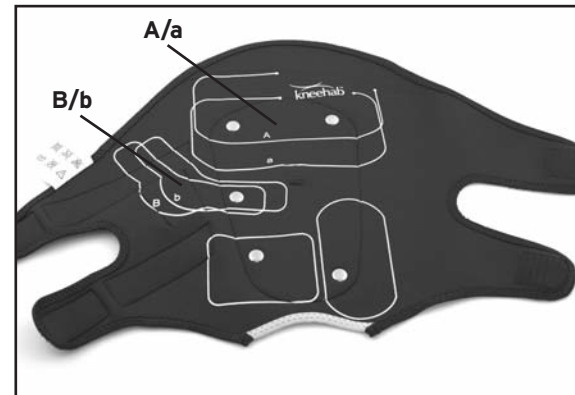
○ This symbol appears around the edge of the display during each contraction phase.

4.4 Description of The Garment

The inside of the garment has been printed with electrode placement guides, showing you exactly where to place the 4 electrodes. Two of the locations will vary depending on your size (**A/a** and **B/b**).

For example, the correct position for the large electrode if you are tall is marked 'A', whereas a smaller person would place the same electrode within the area marked 'a'.

See page 13 for full details on how to determine your correct electrode placement.



5.0 Setting-Up A Kneehab Treatment

Step 1 - Charge the battery

Connect the Unit to the charger (Fig. a) and plug the charger into a main's supply socket. To remove the Unit from the charger press the buttons on each side of the unit connector and pull apart.

You will know the battery pack is on charge when the unit display shows a battery symbol with 3 bars that turn on and off. It will take approximately 2-3 hours to fully charge. The battery pack is fully charged when the battery symbol and its 3 bars remain on.

Notes:

- Do not leave your unit connected to the charger when the battery is fully charged.
- Do not leave your charger connected to mains supply when not in use.

Step 2 - Correct garment confirmation

Important:

The correct garment MUST be used for the leg being treated. L is printed on the garment designed specifically for the left leg. The printed figure of a human also shows the garment positioned on the left leg (Fig. b). R is printed on the garment designed specifically for the right leg. The printed figure of a human also shows the garment positioned on the right leg (Fig. c).

Please check now to ensure you have the correct garment for the leg to be treated. If the garment you have is not for the correct leg, please contact your prescribing clinician or the **neurotech®** office.

Step 3 - Initial garment fitting

- Sit down with your leg as straight as possible. For the best fit and most effective treatment it is important to have your leg as straight as possible during garment fitting.
- Place the garment on you leg so that the light blue binding lies just above the kneecap (approx. 0.5cm/ .25") and the printed Median Line lies along the centre of your thigh (Fig. d).
- Fasten both pairs of straps (Fig. e). For the best fit, fasten the pair of straps closest to the Kneecap first. When the straps are fastened the garment should have a comfortable yet firm fit.

Fig. a



Fig. b



Fig. c

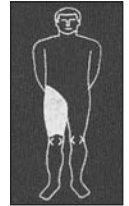


Fig. d



Fig. e



Step 4 - Sizing determination

With the garment still fastened to your leg, sit upright with your knee bent at 90° (Fig. f).

To determine length sizes:

- If the whole garment lies flat along the length of your thigh (Fig. f), you are a Tall fit and must place the large rectangular electrode within the area marked 'A'.
- If you have to fold down the top of the garment at the groin (Fig. g), you are a Small fit and must place the large rectangular electrode within the area marked 'a'.

To determine width sizes:

There is a line printed on the garment near one end of the straps (Fig. h) to help you determine whether you are a wide or a narrow fit. If you have difficulty seeing this line, there is also a gap in the fastening material to help you (Fig. h).

- If the strap does not overlap the printed line, or if you can still feel the gap, you are a Wide fit and must place the L-shaped electrode within the area marked 'B'.
- If the strap does overlap the printed line, or if you cannot feel the gap, you are a Narrow fit and must place the L-shaped electrode within the area marked 'b'.

Step 5 - Adhesive Electrode Placement

- Remove the garment from your thigh and place it on a flat surface with the white electrode placement guides facing you.
- Kneehab XP™ is supplied with a pack of four electrodes. Remove these from their plastic bag.
- Remove the liners from the **patterned** side of the electrodes (Fig. i). Keep these liners for later.
- Stick the electrodes onto the garment within their respective printed outlines.
- Do not remove the liners from the **black** sides of the electrodes yet.

Important:

- Place the largest electrode within outline "A" or "a" depending on your sizing, determined in Step 4.
- Place the L-shaped electrode within outline "B" or "b" depending on your sizing, determined in Step 4.
- The remaining two electrodes should be placed within their respective matching outlines (Fig. j).
- Ensure that all electrodes lie perfectly within the electrode placement guides on the garment.
- Ensure the metal studs are completely covered by all of the electrodes.
- Press the edges of each electrode firmly onto the garment to ensure good adhesion.
- Replacement electrodes are available from your local **neurotech**® supplier. See page 6.

Your Kneehab XP™ is now set up and ready to use.

Fig. f



Fig. g



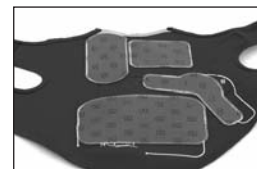
Fig. h - Line & Gap



Fig. i



Fig. j



5.1 Step-By-Step Treatment Guide

Step 1 - Garment Fitting

Using mild soap and water, cleanse the area where you will be placing the garment. The electrodes do not adhere well to dirt, oil, creams or other cosmetics on the skin. Ensure the skin is dry.

Remove the liners from the **black** side of each electrode (Fig. a). Do not dispose of these liners, as they will need to be placed back onto the electrodes between treatment sessions.

Sit down with your leg as straight as possible. For the best fit and most effective treatment it is important to have your leg as straight as possible during garment fitting.

Place the garment on your leg so that the light blue binding lies just above the kneecap (approx. 0.5cm/ .25") and the printed Median Line lies along the centre of your thigh (Fig. b).

Fasten both pairs of straps. For the best fit, fasten the pair of straps closest to the Kneecap first. When the straps are fastened the garment should have a comfortable yet firm fit.

Note:

If you are a very narrow fit, the straps may overlap some of the adhesive electrodes. However, for an effective and safe treatment, it is important that the whole surface of all four electrodes is in contact with the skin. You can eliminate the overlapping problem by folding the straps inwards at the printed line before fastening (Fig. c).

Before starting a treatment session:

We recommend sitting with your knee at an angle between 0 - 60 degrees (Fig. d) or lying down with the leg straight. Before beginning treatment, ensure that all of the electrodes are flat against your skin.

Fig. a

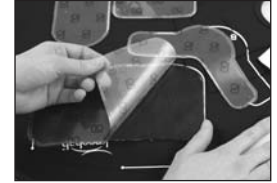


Fig. b

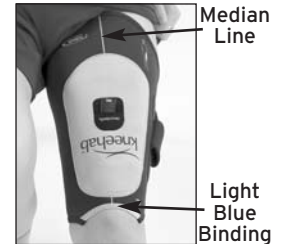


Fig. c



Fig. d



Step 2 - Connect the unit and switch it on

Connect the unit to the garment by plugging it into the garment socket (Fig. e). Switch on the unit by pressing the On/ Off button for 3 seconds (Fig. f). The unit display will show the programme number selected, the duration of the programme and the battery status.

Notes:

- When connected to a Left garment the unit will display 'L' for 3 seconds at start up.
 - When connected to a Right garment the unit will display 'r' for 3 seconds at start up.
- Please check that your unit displays the correct code for the garment to which it's connected. If the unit does not display the expected code, please contact the **neurotech**® office.

Step 3 - Begin treatment

Begin increasing the intensity (Fig. g). This starts the treatment session and the timer will begin to count down. As you increase the left or right intensity button you will feel the stimulation increasing on the corresponding side of your leg. You will also see the intensity level for that side increasing on the unit's display. Increase the intensity on both sides of your leg until you feel a firm, comfortable contraction of the quadriceps. The intensity level ranges from 0 - 99.

Important Notes:

- Typically, you should increase the intensity to the inside of your leg first and to optimise contractions, the intensity level for the inner thigh should be set at a higher level than the outer thigh. As you become more experienced using KneeHab, you will quickly find the levels which suit you best.
- The treatment is delivered in contraction and relaxation cycles. See your Programme Information Card for more details.
- Changing the intensity at any time will trigger the start of a contraction cycle.

Fig. e



Fig. f



Fig. g



Step 4 - Finishing Treatment & Storage

The treatment session is completed when the counter reaches zero. The unit will beep to indicate this. Switch the unit off by pressing the On/ Off button for 3 seconds. Should you forget to do this, the unit will switch off automatically after 20 seconds anyway.

Disconnect the unit from the garment by pressing the buttons on either side of the connector and pulling the two sections apart (Fig. a).


Remove the garment by carefully peeling the electrodes off your leg. Ensure that the electrodes remain attached to the garment. Place the garment on a flat surface with the electrodes facing upward and replace the liners on the **black** side of each one. If the electrodes have lifted from the garment, press the edges back into position.

Close the straps on the garment, ensuring that the electrodes all remain flat. Store the garment, with the electrodes still attached, on a flat surface in a cool dry place.

Fig. a



6.0 Problem Solving Guide

Problem	Possible cause	Solution
The display doesn't come on and there's no signal from the unit	<ul style="list-style-type: none"> • Unit not switched on • Battery pack is fully discharged 	<ul style="list-style-type: none"> • Press and hold the On/Off button for 3 seconds to switch the unit on • Recharge the battery pack
The battery symbol is flashing/ there's ineffective stimulation	<ul style="list-style-type: none"> • The battery charge is low 	<ul style="list-style-type: none"> • Recharge the battery pack
The contractions are very weak, even when the intensity is high	<ul style="list-style-type: none"> • Electrodes are not covering the metal studs • Inadequate contact between the electrodes and the skin 	<ul style="list-style-type: none"> • Place the electrodes completely over the metal studs • Fasten the straps more tightly
The warning symbol appears on the display 	<ul style="list-style-type: none"> • Electrodes not fully in contact with the skin • Electrodes are worn • Unit is not properly attached to the garment 	<ul style="list-style-type: none"> • Ensure the electrodes are pressed firmly against the skin • Contact your local neurotech[®] supplier for replacement electrodes • Ensure the unit and garment are properly connected
Unpleasant feeling beneath the electrodes	<ul style="list-style-type: none"> • Electrodes not fully in contact with the skin • Electrodes are worn • Lotions, pigmented areas or dry spots present on the skin 	<ul style="list-style-type: none"> • Ensure the electrodes are pressed firmly against the skin • Contact your local neurotech supplier for replacement electrodes • Remove any lotions or oils by washing
ERR has appeared on the display	<ul style="list-style-type: none"> • Error message, indicating a problem with the unit 	<ul style="list-style-type: none"> • Switch the unit off and on again. It should now work without problems. If the error message persists, call the helpline

7.0 System Maintenance

Caring for your KneeHab - Washing Instructions:

Important:

Detach the Control Unit from the garment before cleaning.

You should never let your KneeHab Control Unit get wet, but it may be cleaned using a soft cloth, lightly dampened in mild, soapy water. The garment is washable but you must first remove the Control Unit and electrodes. Replace the liners on the **patterned** side of each electrode until you are ready to use your KneeHab unit again. You must always follow the instructions on the label when washing the garment.



Never machine wash your KneeHab garment. Hand wash in lukewarm water and NEVER wring to remove water. This protects the internal composition of the garment from damage.



Do not use any bleach when washing your KneeHab garment.



Do not dry clean your KneeHab garment.



Do not tumble dry your KneeHab garment. The garment should be dried on a flat surface. Do not dry over anything hot (e.g. a radiator or any other direct heat source). Ensure the garment is completely dry before use. The straps should be fastened prior to washing.



The KneeHab garment should not be ironed.

Battery Power / Replacing the Battery

The battery icon on the display will flash when the battery is low and needs to be recharged. After a period of time, you may find that the battery will only power your unit for a limited number of sessions, requiring you to charge it more frequently. This is because rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced.

Should you need to replace the rechargeable battery pack, remove the small rubber plug from the back cover of your unit (Fig. a), unscrew the back cover and remove it. Replace the existing battery pack with a new battery pack (Fig. b). Replace the battery cover and rubber plug. You can purchase a new battery pack by contacting your local neurotech supplier.

Fig. a



Fig. b



Repair, Service & Modification

Access to the interior is not required for maintenance purposes.

If your unit is damaged, you should not use it, but should return it to neurotech or your local distributor for replacement or repair. Repairs, service and modifications may not be carried out by anyone other than qualified service personnel authorised by neurotech. Bio-Medical Research Ltd. will not accept any responsibility if these guidelines and instructions are not followed.

7.1 Accessories

Kneehab Adhesive Electrodes: Type: 613/ 614/ 615/ 616

Kneehab uses adhesive electrodes which have been specifically designed for this unit. Replacement adhesive electrodes are available. To order replacement electrodes, please contact your local neurotech supplier. Only electrodes specified by Bio-Medical Research Ltd. for use with Kneehab may be used. Using other electrodes may degrade performance levels. All adhesive electrodes are provided with their own instructions where necessary, including cleaning, storage and care instructions.

Kneehab Battery Pack: (3.6V NiMH)

Important:

Under no circumstance should anything other than the correct type of battery pack (rechargeable, 3.6V NiMH) be used with your unit. These can be purchased from the neurotech office.

Disposal of electrodes & battery packs

Used electrodes and battery packs must never be disposed of in a fire, but in accordance with your country's national laws governing the disposal of such items. Return all other contents to Bio-Medical Research Ltd.

8.0 Technical Information

General Specifications:

Product Type: 411

Intended use: Electrical Muscle Stimulator

Waveform: Symmetrical bi-phasic square waveform when measured into a standard bodyload.

Garment Material:

Outer Fabric: 100% Nylon

Inner Fabric: 70% Polychloroprene, 30% Polyurethane

Binding: 82% Nylon, 18% Elastane

Fastenings: 100% Nylon

Environmental Specifications:

Operating Range: Temperature: 0 to 35 °C / 32 to 95 °F

Humidity: 20 to 65 % RH

Storage Range: Temperature: 0 to 55 °C / 32 to 131 °F

Humidity: 10 to 90 % RH


Electrical Specifications:

Rated Outputs - Voltage / Currents

Parameter	500 Ω	1 kΩ	1.5 kΩ
Output RMSV	9.2V	17.4V	21.0V
Output RMSA	18mA	17mA	14mA
Output Frequency	35 - 50Hz	35 - 50Hz	35 - 50Hz
DC Component: Approx	0	0	0
Positive Pulse Width	100 - 400 μS	100 - 400 μS	100 - 400 μS
Negative Pulse Width	100 - 400 μS	100 - 400 μS	100 - 400 μS
Interphase Interval	40 μS	40 μS	40 μS

Description of your unit's symbols:

There are a number of technical markings on your unit. These can be explained as follows:

The unit requires 1 x 3.6 volt (NiMH) DC battery pack DC is indicated by the symbol: 

Output (RMSA) Stands for the effective current output, which is the root mean square current measured at a specified resistance.

Output (RMSV) Stands for the effective voltage output, which is the root mean square voltage measured at a specified resistance.

Power (P): Maximum power output measured in Watts (W) into a 500 Ω load.

Frequency (F): Number of pulses output by the unit per second, measured in Hertz (Hz).



This symbol means "Attention, consult the accompanying documents".



This symbol means type BF equipment.

SN stands for "serial number".

On the Kneehab Control Unit is the serial number specific to this unit. The letter preceding the number indicates the year of manufacture, where "L" denotes 2006, "M" denotes 2007 etc.

European Union only



This symbol on your Kneehab is to indicate conformity to the requirements of the Medical Device Directive (93 / 42 / EEC). 0366 is the number of the notified body (VDE).

Disposal of device



At the end of the product lifecycle, do not throw out this product with the normal household garbage, but bring it to a collection point for the recycling of electronic equipment.

Some product materials can be re-used if you bring them to a recycling point. By re-using some parts or raw materials from used products you can make an important contribution to the protection of the environment. Please contact your local authorities if you need more information about collection points in your area.

Waste Electrical and Electronic Equipment can have potentially harmful effects on the environment. Incorrect disposal can cause harmful toxins to build up in the air, water and soil and can be harmful to human health.

9.0 Warranty

neurotech® offers a warranty of 1 year for the Kneehab garment and 2 years for the Kneehab control unit *. Should your Kneehab develop a fault within the specified time, neurotech will replace or repair your Kneehab free of charge, provided the unit:

- has been used for its intended purpose and in the manner described in this instruction manual.
- has not been connected to an unsuitable power source.
- has not been subjected to misuse or neglect.
- has not been modified or repaired by anyone other than an approved **neurotech®** agent.

This warranty complements existing national guarantee obligations and does not affect your statutory rights as a consumer.

* excludes electrodes and battery pack.

The logo for neurotech, featuring the word "neurotech" in a white, lowercase, sans-serif font. A registered trademark symbol (®) is located at the end of the word. The logo is positioned in the upper right corner of the page. The background of the entire page is a dark blue grid pattern. On the right side, there are several curved lines in white and orange that sweep across the page, partially overlapping the logo.

neurotech®

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