Med-Fit

Premier EMS Stimulator

Muscle Stimulation and Muscle Toning

EM6200A

Patient Instruction & User Manual

Tel: 0161 429 7330 email: sales@med-fit.co.uk

Thank you for purchasing a Premier Range Stimulator. These devices are manufactured to the highest of medical standards using the latest and most advanced technology. Each unit is fully tested in final assembly and inspection ensuring you receive the highest quality and an extremely reliable device.

Important information
Please read the following instructions

The Premier range of stimulators use soft touch control technology.
When increasing the intensity control, please press the button in single "light touch" actions. Each press increases the intensity by
1mA (max 99mA). This is a safety feature which ensures that you stimulate at a pleasant comfortable rate.

Contents:
1 x Premier TENS Unit
1 x Charger and USB Cable
4 x Packs of Self-Adhesive Electrodes (4 electrodes per pack)
1 x Pair of Patient Cables
1 x User Manual

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Contents

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CONTROLS AND FUNCTIONS

Left channel socket

Right channel socket

Intensity display for channel 1 and 2

Red key lock button

Charging port

Mode display for both programmes and manual mode

Timer Indicator

The time can only be adjusted in manual mode, time is set to continuous on all programmes

Mode button select programme mode or manual adjustments

Intensity up channel 1

Intensity up channel 2

Intensity down channel 1

Intensity down channel 2

Programme selector up and down

On / Off Button

LED charging indicator

The set button is to select the desire parameters in manual mode only it has no function when using the pre-set programmes.

STEP BY STEP GUIDE

STEP 1 Before using your premier TENS for the first time, please fully charge the battery see page 7.

STEP 2 Press the  button to switch on the TENS. This is located at the bottom left hand corner of the TENS device. Please push and hold down the button for 2 seconds to turn the unit on.

STEP 3 Pressing the 

button will allow you to change from programme mode to manual mode. Before using manual mode, we recommend starting with a pre-set programme (P1-P12).

STEP 4 To change the programmes please use the arrow keys directly below the set button this will allow you to choose the required programme. 

STEP 5 Please refer to the programme information supplied (please see page 20 for programme details).

STEP 6 We recommend starting with a preset programme P3 for the first time. This allows you to familiarise yourself with how EMS stimulates muscles during the treatment programme.

STEP 7 You are now ready to use the EMS for the first time. (see step 8).

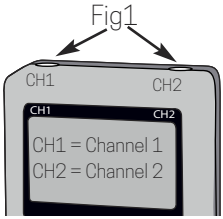
STEP BY STEP GUIDE

STEP 8

Connect one of the EMS lead cables supplied to the top of your EMS machine. As shown in Fig1.

Now connect the other end of the EMS cable to the self-adhesive electrodes supplied. As shown in Fig2.

Fig1



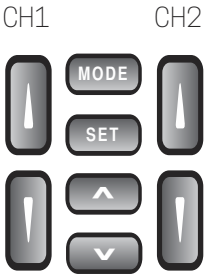
Next place the self-adhesive electrodes on to the painful site or as recommended by your healthcare professional. You are now ready to turn up the intensity on your EMS machine.

Fig2

When connecting the leads, ensure they are inserted straight not at an angle.

STEP 9

The intensity keys on your EMS are marked CH1 and CH2. To increase the intensity press the up arrow key, each press increases the intensity by 1mA and is displayed in the screen. It is recommended that you increase the intensity to a sensation which is comfortable and not too strong. As you use the EMS for longer periods it may be necessary to increase the intensity to higher levels. To control your pain more effectively.
It is recommended the first treatment should be a minimum of 1 hour to $1^1/_2$ hours to give the best possible results.



CHARGING INSTRUCTIONS

Important information The USB charging cable connects to the EMS charging port as shown in fig 1 (Please ensure you connect the cable the right way round).

Before using your Premier EMS & Muscle Stimulator please charge the unit, as follows:

Charging your EMS device.

Connect the USB cable to the AC adaptor or USB port as shown in figure 1.

Now connect the USB cable directly into the USB socket, which is located on the right hand side of your Premier EMS.

A red indicating light will be seen in the bottom right hand corner of your EMS device. We recommend you charge the device for approximately 2 hours. Once fully charged the unit will be ready for use and the LED charging light will turn to green, this indicates the unit is fully charged. Remove the USB charging lead from your EMS device and disconnect from the mains supply or USB port. Please store your adaptor and cable in the carry case provided when not in use.

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WARNINGS & PRECAUTIONS

PLEASE NOTE:

Patients must read and understand the warnings and precautions before using this device. Do not allow your machine or electrodes to be used by anyone else, as they are designed for single patient use only. It is recommended that proper medical advice on the use of TENS is sought from a Qualified Practitioner (Physiotherapist, Doctor or Nurse) before use, to ensure safe and effective treatment. If you are taking any medication please carry on as normal but seek advice from your Doctor/Healthcare Professional before using the device.

WARNING! PATIENTS WITH PACEMAKERS MAY NOT BE TREATED WITH TENS

- Do Not use during pregnancy except during labour (under medical supervision)
- Do Not place electrodes over the Carotid Sinus
- Do Not use on broken or damaged skin
- Do Not place electrodes close to the eyes or in the mouth.
- Do Not use EMS whilst driving or operating machinery.

TENS is unsuitable and should not be used in the following situations.

- Persons suffering from conditions where the circulation is impaired.
- Epilepsy, Heart Condition or any form of Malignancy.
- Patients with poor skin sensation and non-compliant patients who are emotionally disturbed or have dementia.
- Over metal implants or in conjunction with sleep apnea or heart monitors.

You should be aware that EMS units provide symptomatic relief only and are not considered curative.

WARNINGS

1. The long term effects of chronic electrical stimulation are unknown.
2. Stimulation should not be applied over the carotid sinus nerves, particularly in patients with a known sensitivity to the carotid sinus reflex.
3. 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.
4. Stimulation should not be applied transthoracically in that the introduction of electrical current into the heart may cause cardiac arrhythmias.
5. Stimulation should not be applied transcerebrally
6. Stimulation should not be applied over swollen, infected, inflamed areas or skin eruptions, eg, phlebitis, thrombophlebitis, varicose veins etc.
7. Stimulation should not be applied over or in proximity to cancerous lesions.

Contraindication

Electrical stimulators should not be used on patients with cardiac demand pacemakers.

Adverse Reactions

On rare occasions skin irritation and burns beneath the electrodes have been reported with the use of electrical stimulators. If irritation occurs, discontinue use and consult your Healthcare Professional.

CAUTIONS

1. Safety of powered muscle stimulators for use during pregnancy has not been established.
2. Caution should be used for patients with suspected or diagnosed heart problems.
3. Caution should be used in the presence of the following:

a. When there is a tendency to haemorrhage following acute trauma or fracture;
b. Following recent surgical procedures when muscle contraction may disrupt the healing process;
c. Over the menstruating or pregnant uterus; and
d. Over areas of the skin which lack normal sensation.

4. Some patients may experience skin irritation or hypersensitivity due to electrical stimulation or electrical conductive medium. Using an alternate conductive medium, or alternate electrode placement can usually reduce the irritation.
5. Electrode placement and stimulation settings should be based on the guidance of the prescribing practitioner.
6. Powered muscle stimulators should be kept out of the reach of children.
7. Powered muscle stimulators should be used only with the leads and electrodes recommended for use by the manufacturer.
8. 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 of injury.

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GENERAL DESCRIPTION

The EM6200A Digital EMS is a battery operated pulse generator that sends electrical impulses electrodes to the body and reach the nerves and underlying muscle group.

The device is provided with four controllable output channels, each independent of each other. An electrode pair can be connected to each output channel. The intensity level is controlled by press buttons.

INTRODUCTION TO EMS

EXPLANATION OF EMS

Electrical Muscle Stimulation is an internationally accepted and proven way of treating muscular injuries. It works by sending electronic pulses to the muscle needing treatment; this causes the muscle to exercise passively.

It is a product derived from the square waveform, originally invented by John Faraday in 1831. Through the square wave pattern, it is able to work directly on muscle motor neurons.

The EMS has a low frequency and this in conjunction with the square wave pattern allows direct work on muscle groupings. This is being widely used in hospitals and sports clinics for the treatment of muscular injuries and for the re-education of paralysed muscles, to prevent atrophy in affected muscles and improving muscle tone and blood circulation.

INTRODUCTION TO EMS

HOW EMS WORKS

1. Relaxation of muscle spasms
2. Prevention or retardation of disuse atrophy
3. Increasing local blood circulation
4. Muscle re-education
5. Immediate post-surgical stimulation of calf muscles to prevent venous thrombosis
6. Maintaining or increasing range of motion

The EMS units send comfortable impulses through the skin that stimulate the nerves in the treatment area. When the muscle receives this signal it contracts as if the brain has sent the signal itself. As the signal strength increases, the muscle flexes as in physical exercise. Then when the pulse ceases, the muscle relaxes and the cycle starts over again, (Stimulation, Contraction and Relaxation.)

CONTRACTION / RELAXATION

The contraction time and relaxation time of EMS are adjustable. Stimulation will commence at the contraction setting time and cease at the relaxation setting time. Then the cycle starts over again, Stimulation, Contraction and Relaxation.

RAMP

In order to achieve a comfortable exercise and avoid discomfort because of immediate current onset, each contraction may be ramped so that the signal comes on gradually and smoothly. The intensity of electrical current will reach the set level within the Ramp time. It will NOT reach the desired level if the ramp time is greater than the total contraction time.

OUTPUT MODE

The output of both channels is adjustable. Stimulation can be synchronous or alternate. Stimulation of both channels will occur at the same time when the asynchronous pattern is selected. In alternating mode, the stimulation from CH2 will occur after a contraction of CH1 is finished.

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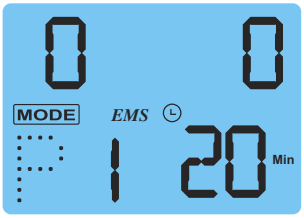
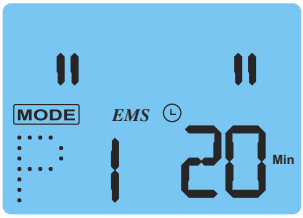
ADJUSTING THE CONTROLS USING THE MANUAL ADJUSTMENT

1. Power On/Off/Pause Button 

The power of unit can be turned on by pressing the On/Off/Pause button. You may start to adjust the settings when the liquid crystal display is on. Press and hold for 2 seconds to switch off. To pause stimulation press the button once. To resume stimulation press the button again and stimulation will be restored in 2 seconds.

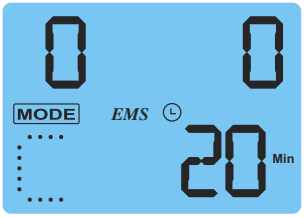


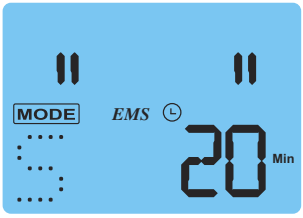


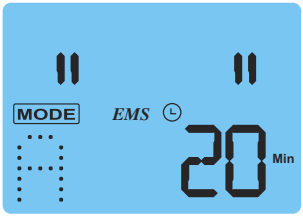
If the unit is not used (buttons not pressed or output level at 0) for 5 minutes, the power will be shut off automatically.

2. Mode Control 

The following EMS modes are available (C.S.A) C = Constant in this mode the stimulation is continuous. S = Synchronous mode. A = Alternate mode.







ADJUSTING THE CONTROLS USING THE MANUAL ADJUSTMENT

3. Set Control 

By pressing the "Set" control you select the setting you intend to adjust. The value is set by pressing the "Increment" or "Decrement" controls when the "Set" value is flashing.

4. Increment Control 

This button controls the increase of settings.

5. Decrement Control 

This button controls the decrease of settings.

6. Intensity Increase Control

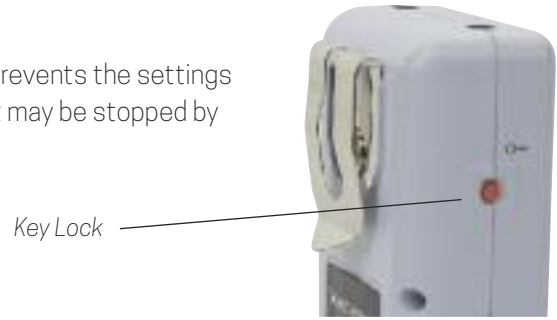
There are 99 steps of intensity adjustment control.
Press the button until the desired intensity level is reached.

7. Intensity Decrease Control

There are 99 steps of intensity adjustment control.
Press the button until the desired intensity level is reached.

8. Key Lock Facility

Pressing the "Lock" buttons prevents the settings being changed but the output may be stopped by pressing the "On/Off/Pause".



ADJUSTING THE CONTROLS FOR EMS

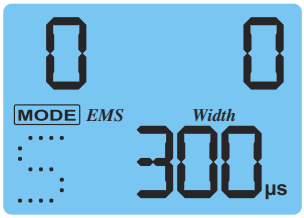
10. Steps to Set a EMS Program

The settings can be adjusted according to the following steps.

a. Turn on the Power

b. Select a Mode

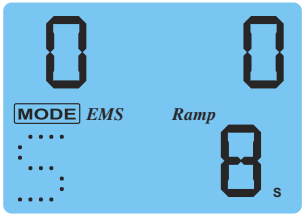
Select a mode by pressing the "Mode" control. The mode you selected will show up on the top of liquid crystal display. There are 3 modes of your option including - C(Constant), S(Synchronous), A(Alternate). When an EMS mode is selected, it shows "EMS" on the liquid crystal display.



After a mode is selected, always press "Set" to enter next setting, and press " " or " " to adjust its value. The settings will be stored immediately after selected.

c. Set Ramp Time

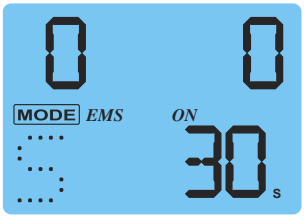
The ramp time controls the time taken to reach maximum and the time taken to fall to zero l order to make the contraction more comfortable. The ramp time is adjustable between 1 - 8 seconds.



ADJUSTING THE CONTROLS FOR EMS

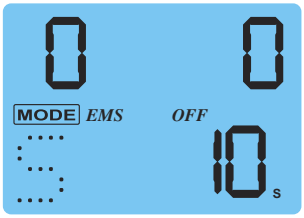
d. Set On Time

The On Time controls the length of stimulation. By pressing the "Set" control, the contraction time can be adjusted. Both channels' stimulation is cycled on and off by the contraction and relaxation settings. The range is adjustable from 2 seconds to 90 seconds.The total "ON" time must be at least twice the "Ramp" time.



e. Set Off Time

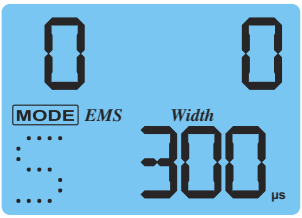
The Off Time controls the length of relaxation. By pressing the "SET" control, the relaxation time can be adjusted. Both channels' stimulation is cycled on and off by the contraction and relaxation settings. The range is adjustable from 2 seconds to 90 seconds. In Alternate mode, the OFF Time should be equal or more than the ON Time. (OFF TIME ON TIME)



ADJUSTING THE CONTROLS FOR EMS

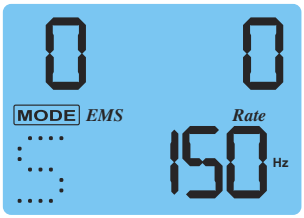
f. Set Pulse Width

Pulse Width is adjustable from 50 µs to 300 µs. Press "SET" control to enter this menu, then press " ^ " or " v " to adjust the setting. If no instructions regarding the pulse width are given in therapy, set the control to the suggested 70-120 µs setting



g. Set Pulse Rate

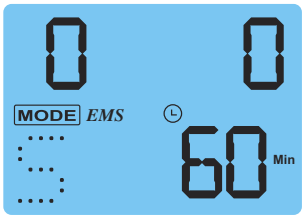
Pulse rate is adjustable from 2Hz to 150 Hz . Press "SET" control to enter this menu, then press " ^ " or " v " to adjust the setting. Un

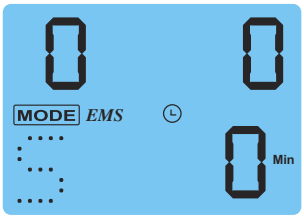


ADJUSTING THE CONTROLS FOR EMS

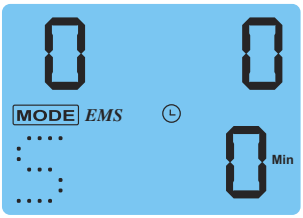
h. Set Timer

The treatment time is adjustable between 5 - 60 minutes and Continue(C). Press "SET" control to enter this menu, then press "Increment" or "Decrement" to adjust the setting. The liquid crystal will show the balance treatment time after the stimulation is started. Output will be terminated when time is up. Turn off the unit when the output is off.





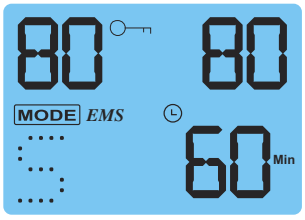
Continuous



End of Treatment

i. Adjust Intensity

There are 99 steps within the intensity range. Set the desired level by pressing the " " or " "



CHOOSING THE CORRECT PARAMETERS IN MANUAL ADJUSTMENT MODE

With all muscle stimulators, it is important that the frequency, pulse width and work rest times are set correctly, to both maximise the results and use the device in a safe and responsible manner.

Frequency Selection

5-15Hz (pulse per second)
This frequency range would be selected to improve tone and muscle stability.

15-25Hz (pulse per second)

The range of frequencies helps to promote muscle endurance and conditioning.

25-50Hz (pulse per second)

This frequency range would be selected for muscle strengthening and muscle bulk.

50-120Hz (pulse per second)

This range of frequency is used for strengthening, re-education and spasticity. Using higher frequencies 50Hz plus requires only short periods of treatment time as muscle fatigue will occur very quickly.

Pulse width selection

The pulse width selection is dependent on the depth of penetration and targeted muscle group. For example, the more superficial the muscle the lower the pulse width; see examples below:

Hand / foot muscles	80µs – 100µs
AB Abdominal muscles	80µs – 100µs
Leg muscles	250µs – 300µs
Arm muscles	150µs – 250µs

For strengthening protocols of all large muscle groups 300µs may be best

CHOOSING THE CORRECT PARAMETERS IN MANUAL ADJUSTMENT MODE

Work Rest (Contraction /Relaxation) Times

When setting the work / rest times it is important that the rest time is at least equal to the work time; for example 4 seconds on time 4 seconds off time.

For weaker muscles a larger rest time will be required for example 4 seconds on This allows for muscle recovery and reduces muscle fatigue.

Ramp Time

The ramp time is the amount of time taken for intensity to reach its work time phase. Typical settings would be usually 2-4 seconds ramp up time and 1-2 seconds ramp down time. For a stronger stimulation, increase ramp up time to maximum 8 seconds.

Stimulation modes

- Continuous mode – device runs continually
- Synchronous mode – output from both channels occurs in sync
- Alternate mode – The stimulation of channel 2 will occur after the first contraction of channel 1

Examples of treatment settings

	Freq Hz	Pulse width µs	Work/Rest secs	Ramp time seconds
Strength training	25 - 50	200-300	6 - 6	4 up – 2 down
Endurance training	15-25	70-200	4 - 12	2 up – 1 down
Range of Motion	25-50	70-200	4 - 16	2 up – 1 down
Muscle Re-education	50	150-250	4 - 12	2 up – 1 down

Please note these are typical settings and will vary from patient to patient. Also please take professional medical advice wherever possible.

MUSCLE STIMULATOR & MASSAGE PROGRAMMES

Programmes P1 - P4

Muscle Training & Muscle Re-Education Programmes

Choose from one of the programmes 1, 2, 3 or 4.
Suitable Conditions
These programmes can be used for muscle training, prevention of muscle atrophy. Please follow the electrode placement chart for individual muscles shown on pages 23 to 26.

Programmes P5 - P8

Muscle Strengthening & Muscle Re-Education Programmes

Choose from one of the programmes 5, 6, 7 or 8.
Suitable Conditions
These programmes can be used for building stamina and strength. Muscle re-eduction. Please follow the electrode placement chart for individual muscles shown on pages 23 to 26.

Programmes P9 - P12

Muscle Toning & Massage Programmes

Choose from one of the programmes 9, 10, 11, or 12.
Suitable Conditions
This programme stimulates the muscles with comfortable sensations which helps to tone and decrease any muscular tension. Please follow the electrode placement chart for individual muscles shown on pages 23 to 26.

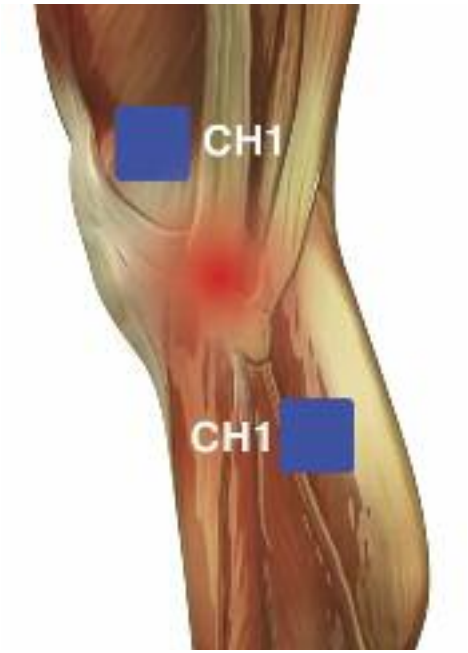
HELPFUL TIPS FOR SUCCESSFUL TENS TREATMENT

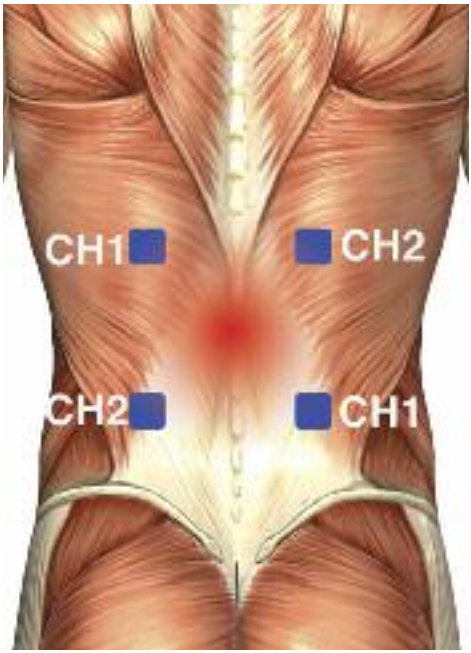
Once you have familiarised yourself with the controls and features of your EMS device, it is important to place the electrodes in the correct place. This may take 3 or 4 attempts to find the most suitable position, for maximum effect.

If you are using two electrodes, place the electrodes directly onto the muscles. You may now position the electrodes around the area to locate the most suitable position.

The alternative method is to use four electrodes surrounding the area.

The complete area between the electrodes will now be treated when positioning the electrodes as shown.



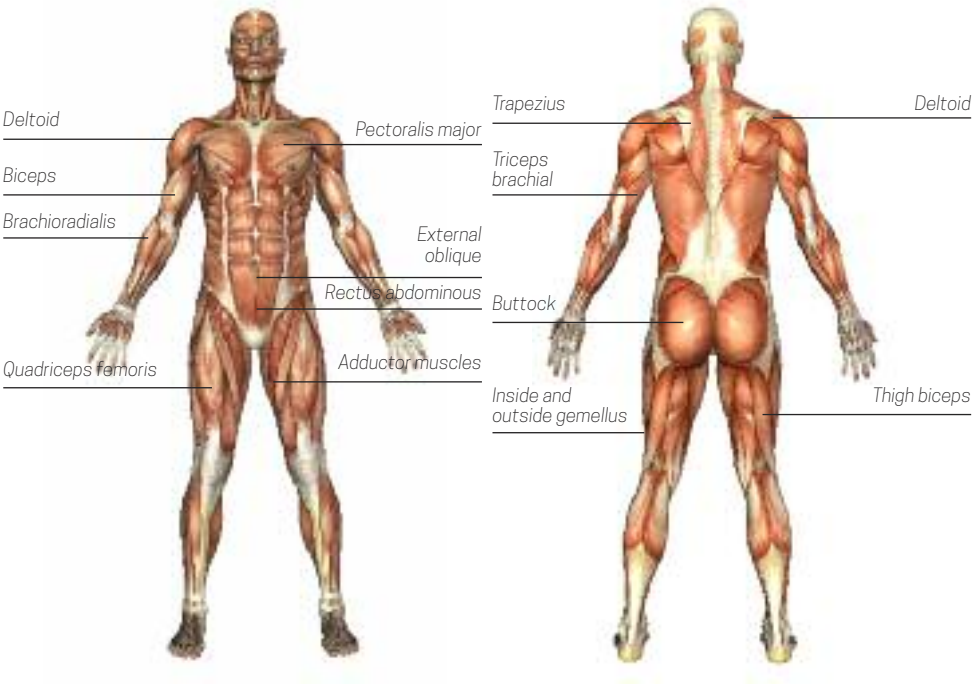


MUSCLE STIMULATORS & MASSAGE PROGRAMMES

These 12 individual electronic muscle stimulator (E.M.S) programmes P1 - P12 have been clinically proven for the treatment of:

1. Muscle Re-Education
2. Muscle Training
3. Muscle Strengthening
4. Muscle Toning & Massage

Please refer to the electrode placement charts provided for electrode placement guidelines.



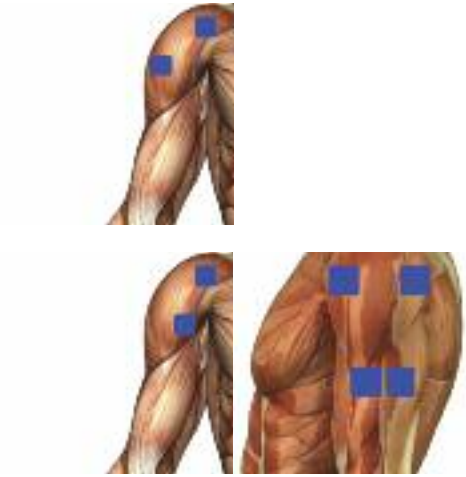
ELECTRODE PLACEMENT

Arms

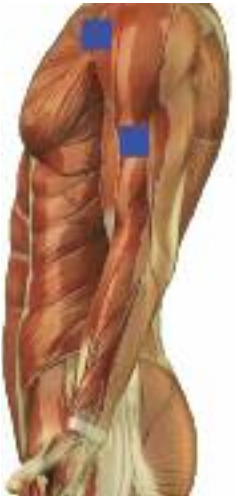
Biceps

This position is useful for muscle training and for gaining volume using the devices' muscle strengthening programmes. But it is equally very useful for diminishing the effects of lactic acid (substances manufactured by the muscles after sporting exertion and that result in pain during the following few hours).

Deltoid



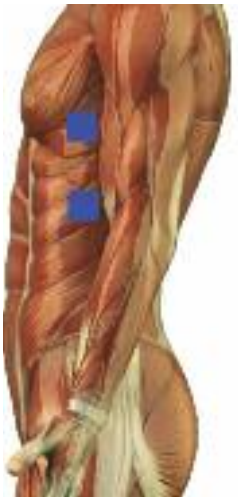
Deltoid & Anterior Fascia



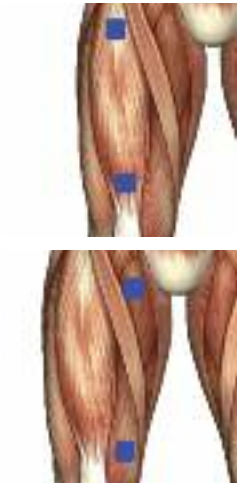
ELECTRODE PLACEMENT

Deltoid Posterior Fascia

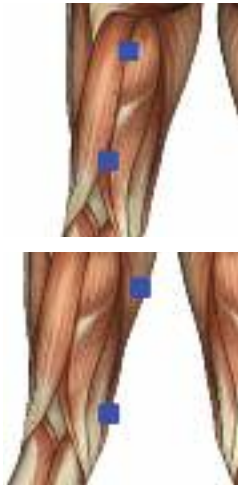
Latissimus



Thigh

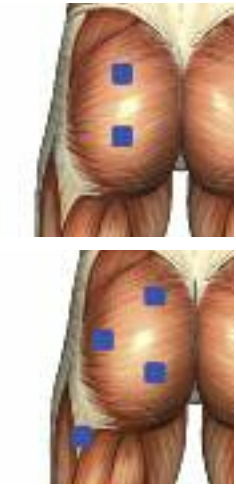


Internal Thigh



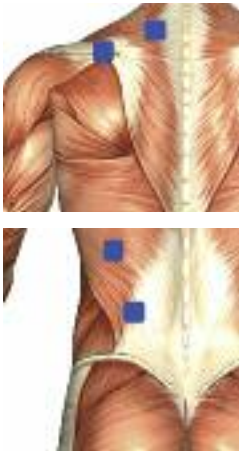
ELECTRODE PLACEMENT

Gluteals



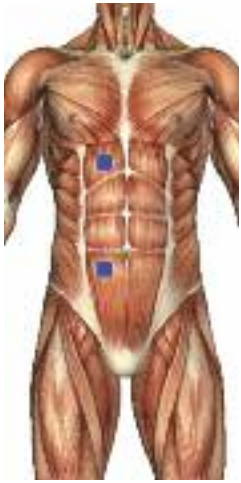
This position is ideal for shaping the gluteal muscle.

The Trapezius Muscles and Dorsals



The Legs and Calves

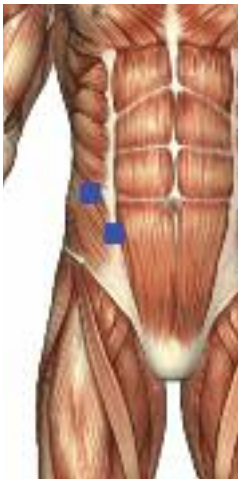
The Abdominals



It is the abdominal muscle which, when electro-stimulated, will make a six-pack appear.

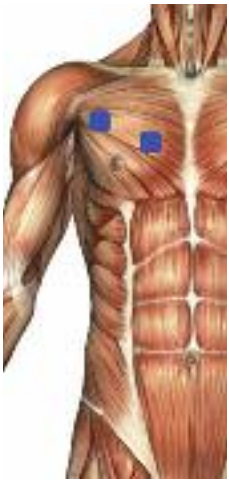
ELECTRODE PLACEMENT

The Abdominals



These muscles are very difficult and painful to work on. So, go on, the electrodes positioned like this will allow you to work on your muscles

The Pectorals



BE SURE to follow the positioning.

DO NOT POSITION ON THE HEART AREA !

LIMITED WARRANTY

Med-Fit UK Ltd warrants to the initial Purchaser (“Purchaser”) (and to no other person) that the product with the exclusion of accessories such as chargers, rechargeable batteries, electrodes, lead wires, self-adhesive electrodes and the component parts thereof, distributed or manufactured for one year from the initial date of purchase from Med-Fit UK Ltd (“the Warranty Period”).

Accessories including, but not limited to chargers, rechargeable batteries, electrodes, lead wires and adhesive electrodes are excluded from the warranty and sold ”AS IS’ because their structure is such that they may be easily damaged before or during use.

Limited of Liabilities and Disclaimer of Warranties

Med-Fit UK Ltd sole obligation in the case of any breach of its warranties set forth in the paragraph above, shall be, at Med-Fit UK Ltd option, to repair or replace the Product without charge to Purchaser or to refund the purchase price of the Product. In order to recover under this War

Skin Patch Test

It is recommended that you carry out a patch test before applying your first treatment, To do this, remove one electrode from the packaging and place on a part of your body which is both visible and easy to inspect.

After 30 minutes, remove the electrode and inspect the area for any redness or irritations. If no change is noticed, proceed with your first EMS treatment following the User Guide and Instructions provided. If skin irritation has been noticed, we recommended the use of sensitive gel electrodes.

ELECTRODE INSTRUCTIONS

Turn Stimulator OFF before applying or removing electrodes

Application

1. Skin site must be very clean and dry. Dirty, flaky or oily skin will prevent electrodes from adhering to the skin. If necessary, trim excess hair with scissors. If skin is oily wipe down with an alcohol or electrode skin prep prior to application. Be sure to wash hands before handling electrodes.
2. Remove electrodes from bag and reseal bag to protect remaining electrodes.
3. Grasping a tiny edge of the electrode, peel and remove electrode from the protective plastic liner. Save liner for electrode storage.
4. Place electrode onto skin treatment site (as recommended by your clinician) by firmly applying from the centre of the electrode to the outer edges. Adhesion improves when electrodes reach skin temperature.
5. If gel appears oversaturated with excessive moisture or perspiration, allow the electrode to air-dry in a refrigerator with the gel side facing up until the gel regains its tack. If the gel appears dry, try adding a few drops of water to the gel and allow to rest in a dust-free environment until the gel regains its tack.

Removal and storage

1. Lift a corner of the electrode and slowly peel the electrode off the skin, touching the adhesive gel as little as possible.
2. Place the electrodes back onto the saved protective plastic liner.
3. While grasping the electrodes connector with one hand, use the other hand to gently twist and disconnect the lead wire pin from the electrode connector. .
4. Return the electrodes back into the storage bag and reseal tightly to prevent dry-out.
5. Store at room or cool temperature and keep out of direct sunlight.
6. The life of the electrode varies depending on skin conditions, amount of use, storage and climate. Electrode life may be extended by carefully following the application, removal, and storage instructions.

Caution

1. DO NOT place electrodes on broken skin. If skin irritation develops discontinue use. Consult physician. Replace electrodes when they do not adhere or when treatment becomes uncomfortable.
2. DO NOT use unit while driving or operating machinery
3. DO NOT wear electrodes when showering, bathing or swimming
4. DO NOT apply electrodes across the head or across the heart or on the front of your neck.
5. Keep electrodes separated during treatment
6. Using stimulation electrodes that are small or incorrectly applied could result in discomfort or skin burns.

SAFETY-TECHNICAL CONTROLS

For safety reasons, review the following checklist before using your EM6200A Digital EMS

1. Check the device for external damage.
   - deformation of the housing.
   - damaged or defective output sockets.
3. Check the usability of accessories.
   - patient cable undamaged
   - electrodes undamaged.

Please consult your distributor if there are any problems with device and accessories.

MALFUNCTIONS

Should any malfunctions occur while using the EM6200A Digital TENS/EMS, check
- check the cable is correctly connected to the device. The cables should be inserted completely into the sockets.

CONFORMITY TO SAFETY STANDARDS

The EM6200A Digital EMS devices are in compliance with the following standards:

EN 60601-1-2: 2007 Medical electrical equipment -
Part 1-2: General requirements for basic safety and essential performance
- Collateral standard: Electromagnetic compatibility
- Requirements and tests

EN 60601-1:2006 Medical electrical equipment
Part 1: General requirements for basic safety and essential performance

30

GRAPHIC SYMBOLS

	Degree of Electrical Protection BF
	Timer
	Increment
	Decrement
	Consult instructions for use
	Manufacturer
SN	Serial number
	Lock
	Low battery
	Pause
	DC current (DC Power source)
CE 2460	Comply with MDD 93/42/EEC requirement as amended by 2007/47/EC. Notify body det norske veritas (DNV)
	Power

The label attached to the back of device contains important information about this device model, supply voltage, CE number and caution. Please don not remove.

The Premier Plus EMS Programmes P1-P12

NO	PROGRAMME	SYN/ALT	Rate (Hz)	Width (s)	Ramp (sec)	On Time (sec)	Off Time (sec)	Timer (min)
1	ACL repair/joint protection back muscle	SYNCHRONOUS	35	300	3	8	24	20
2	Spasm small muscle	SYNCHRONOUS	80	300	3	10	5	20
3	Spasm Postoperative	SYNCHRONOUS	80	250	2	8	4	20
4	Arthroscope	SYNCHRONOUS	25	200	2	6	30	15
5	Disuse atrophy	SYNCHRONOUS	35	300	2	5	15	30
6	Shoulder Subluxation	SYNCHRONOUS	50	300	5	15	50	15
7	Range of motion mules re-education of hips	SYNCHRONOUS	40	250	3	6	21	30
8	Muscle training	SYNCHRONOUS	50	250	2	10	10	20
9	Muscle training	SYNCHRONOUS	50	250	2	14	14	20
10	Muscle training	SYNCHRONOUS	35	400	2	10	10	20
11	Muscle training	ALTERNATE	50	250	2	10	10	12
12	Muscle training	ALTERNATE	50	250	2	14	14	20

TECHNICAL SPECIFICATIONS

The technical specification details of EM6200A are as follows:

	MECHANISM	TECHNICAL DESCRIPTION
01	Channel	Dual, isolated between channels
02	Pulse Amplitude	Adjustable, 0-100 mA peak into 500 ohm load each channel.
03	Wave Form	Asymmetrical Bi-Phasic Square Pulse
04	Voltage	0 to 50V (Load: 500 ohm)
05	Power source	Lithium Battery
06	Size	11.8cm(L) x 6cm(W) x 3.1cm(H)
07	Weight	150 grams with battery.
08	Timer	Adjustable, from 1 to 60 minutes or Continuous. Adjustable in 1 minute each step from 1 to 15 minutes, and 5 minutes each step from 15 to 60 minutes. Treatment time countdown automatically.
09	Low Battery Indicator	A low battery indicator will show up when the battery is low.
10	Operating Condition	Temperature: °~°C Relative Humidity: 30%~75% Atmosphere Pressure: 700Hpa~1013Hpa
11	Remark	There may be up to a +/-5% tolerance of all parameters and +/-20% tolerance of output amplitude & voltage.

IMPORTANT INFORMATION REGARDING ELECTRO MAGNETIC COMPATIBILITY (EMC)

This product needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided, and this unit can be affected by portable and mobile RF communications equipment.

1)* Do not use a mobile phone or other devices that emit electromagnetic fields, near the unit. This may result in incorrect operation of the unit.

2) Caution: This unit has been thoroughly tested and inspected to assure proper performance and operation!

3) * Caution: this machine should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, this machine should be observed to verify normal operation in the configuration in which it will be used。

4) Warning:

The use of ACCESSORIES, transducers and cables other than those specified, with the exception of transducers and cables sold by the MANUFACTURER of the DEVICE as replacement parts for internal components, may result in increased EMISSIONS or decreased IMMUNITY of the ME EQUIPMENT or ME SYSTEM.

Guidance and manufacture's declaration – electromagnetic emission		
The DEVICE is intended for use in the electromagnetic environment specified below. The customer of the user of the DEVICE should assure that it is used in such an environment.		
Emission test	**Compliance**	**Electromagnetic environment – guidance**
RF emissions CISPR 11	Group 1	The DEVICE use RF energy only for its internal function.Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emission CISPR 11	Class B	The DEVICE is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations /flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacture's declaration – electromagnetic immunity			
The DEVICE is intended for use in the electromagnetic environment specified below. The customer or the user of DEVICE should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines	±2kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s)	±1 kV differential mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles for 5 sec <5% U_T (>95% dip in U_T) for 0.5 cycle for 5 sec	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles for 5 sec <5% U_T (>95% dip in U_T) for 0.5 cycle for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the DEVICE requires continued operation during power mains interruptions, it is recommended that the DEVICE be powered from an uninterruptable power supply or a battery.
Power frequency (50Hz/60Hz) magnetic field 61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital IEC environment.
NOTE: U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacture's declaration – electromagnetic immunity			
The DEVICE is intended for use in the electromagnetic environment specified below. The customer or the user of DEVICE should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the DEVICE, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance**
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.167\sqrt{P}$ $d = 1.167\sqrt{P}$ 80 MHz to 800 MHz $d = 2.333\sqrt{P}$ 800 MHz to 2.5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.b Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the DEVICE is used exceeds the applicable RF compliance level above, the DEVICE should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the DEVICE.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the DEVICE .

The DEVICE is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the DEVICE can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the DEVICE as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter (W)	**Separation distance according to frequency of transmitter (m)**		
	150 KHz to 80 MHz $d = 2.333\sqrt{P}$	**80 MHz to 800 MHz** $d = 1.167\sqrt{P}$	**800 MHz to 2.5 GHz** $d = 1.167\sqrt{P}$
0.01	**0.117**	**0.117**	**0.233**
0.1	**0.369**	**0.369**	**0.738**
1	**1.167**	**1.167**	**2.333**
10	**3.689**	**3.689**	**7.379**
100	**11.667**	**11.667**	**23.333**

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

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