

Practical Guide

Muscle & TENS Therapy



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Introduction

This guide offers supplementary information to the general operation manual for ELPHA // 3000 muscle and TENS stimulator; it gives advice and recommendation to most frequent stimulation occurrences within pain therapy and muscle rehabilitation. For detailed information and settings of the device, we advise you to read the operation manual. We recommend to get a diagnosis before starting the treatment.

The ELPHA // 3000 includes both a muscle stimulator and a pain stimulator. Six programmes are preset based on recommendations from authorities within the field of electro therapy and well researched through clinical studies. Thanks to the user-friendly design private persons, doctors and physiotherapy clinics are using the ELPHA // 3000. Using the ELPHA // 3000 is easy and clean and the user can carry out the treatment as required, i.e. at the very moment the pain occurs. And important: the treatment can be carried out at home.

On the last page of this guide you have the opportunity to write your own notes, your placement for electrodes and eventually your own settings of the parameters.

Pain Relief with TENS and BURST

TENS = Transcutaneous Electrical Nerve Stimulation

Pain therapy without taking drugs and without side effects.

TENS is a treatment method based on electrical stimulation of the nerve paths with the aim to relieve pain or make the pain cease. The idea of TENS is, after having located the pain, to place two electrodes on the skin, so that the electric current runs from one electrode to the other and passes through the pain location.

Stimulating with TENS blocks the pain signal, which normally is being transmitted through the nerves to the central nervous system, where the signal is registered as pain. The effect of the treatment sets in promptly, when treatment is used locally.

When stimulating with BURST at low frequency and strong enough to achieve strong muscle contractions in the stimulations area the pain relieving effect is achieved after approx. 30 minutes and with long cycle result.

People feeling pains and keep feeling pains are often victims of a self-increasing effect. One example is muscle tension, following the wake of pain experience. If pain occurs in one area of the body, the natural action is to flex the muscles to protect the aching area. However, when muscles are being kept tense, they become sore and get painful. Pain tires and tiredness makes it difficult to sustain pain. Chronic pain causes fear and depression, which increased the pain experience. A vicious circle has started! Pain is difficult to get rid of, though the vicious circle can be broken. As the ELPHA // 3000 can be used at home it is possible to relieve or eliminate most of the muscle and pain symptoms, when ever they occur.

Muscle Stimulation

The muscles are being treated in a healthy way.

40% of all pain complexes arise around the muscles. After relief of the pain symptoms by means of the ELPHA // 3000 the cause lying behind, e.g. muscle tension can be treated. The muscle will become smooth and strengthened, the lactic acids being transported away from the area and thus a healing takes place. Muscle contractions must occur in the muscle programme mode, which consists of a rise time, stimulation, fall time and rest time.

Programmes

TENS with P1



Suitable for pain relief. The Therapy consists of short electrical pulses where the stimulation may never be so strong that any muscle contractions occur. Electrodes are usually placed on the nerve paths around the pain site.

TENS stimulation can be used for pain therapy for the following:

Muscle pain, arthralgia, tennis elbow, arthritis, osteoarthritis, gout, fibromyalgie, tenosynovitis, carpal tunnel, hip and back pain, muscle tension (myalgia), sinusitis, neuritis etc.

TENS with P2



Similar to P1 however with the difference that the stimulation pulses vary for both pulse width and stimulation current. The variation is random and built up as: pulse width multiplied by stimulation current being constant. This modulated TENS prevents any habituation to a set pulse width. P2 has the following variables: frequency, pulse width and treatment time.

Modulated TENS stimulation can be used for pain therapy as mentioned for P1. However, for chronic conditions where long-term treatment is required modulated TENS is recommendable.

BURST with P3



Stimulation form consisting of short series of pulses with high frequency that are repeated with low frequency. BURST stimulation is used for general pain relief and stimulation must be so strong that muscle contraction is perceived. In general terms the electrode is placed on a large muscle near the pain location. BURST has the following variables: frequency, pulse width and treatment time.

The effect of the stimulation has to be strong to achieve visible muscle movement; the muscle tension will be affected and forced to movement. A long-cycle pain relief is given with BURST stimulation due to the fact that the body increases its own production of the natural painkillers, the endorphins.

BURST stimulation can be used for relief of radiating pain like:

Sciatic pain, back pain, scleroses, tinnitus, circulatory disturbances, whiplash, etc.

Muscle with P4



(The weak muscle)

Muscle programme 4 is used for rehabilitation of weakened muscles (atrophy). The stimulation must be strong to give visible muscle contraction, however, with a slow rise and a resting period to cause a natural movement and to avoid any additional loss of strength. Due to a low frequency muscle fatigue is avoided.

Programme 4 can be used for:

Rehabilitation of weakened muscles, paralysis, scleroses, muscle tension and after long-term bed rest, etc.

Muscle with P5



(Active mobility)

Muscle programme 5 is constructed to make the muscle recover after short-term injuries or immobility. The stimulation activates the moveable muscles and builds up the muscle bulk to regain normal strength and suppleness.

Programme 5 can be used for:

Fracture, sprain, sports injuries, post-operative rehabilitation, etc.

Muscle with P6



(Reinforcement)

Muscle programme 6 is based on a strong stimulation at high frequency with short intensive intervals intended for added reinforcement of muscles. The combustion of fat increases in the stimulated area, so that the muscle gets outlined clearly.

Programme 6 can be used for:

Sports training, fitness, slimming, etc.

NB! All programmes can be repeated from 3 to 4 times per day according to specific needs.

Synchronised Muscle Stimulation

Synchronised muscle stimulation is intended for continuous movement. By adjusting the stimulator's two output channels to synchronic stimulation it is possible to stimulate the shoulder and then immediately after, while the shoulder still is stimulated, to stimulate the elbow. This makes the ELPHA // 3000 an effective treatment tool for spasms, atrophy and rehabilitation after a stroke due to the fact that range of motion is being established.

Get Started

ELPHA // 3000 has 2 output channels; channel A and B. Both channels are operated alike.

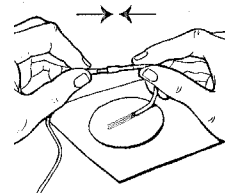
1. Retract the sliding lid. Insert the battery and replace the lid.



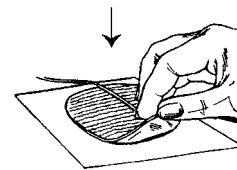
2. Connect the lead wires to the output channels on the device.



3. Connect the lead wires to the electrodes.




4. Clean the skin. Remove the plastic cover from the electrodes before attaching to the skin. The electrodes must not touch each other.



5. Turn on the ELPHA // 3000 by pressing the blue on/off button.



6. Choose programme and adjust the stimulation level. When the keyboard lock symbol appears , turn down the level to allow further adjustment of the required stimulation level.



7. The stimulation automatically stops when treatment time expires.

Neck

Muscle tension in shoulder & neck cervical syndrome



Indications:


- Rheumatism (P2+P3)
- Whiplash (P1)
- Slipped disk (P2+P3)
- Cervical strain (P2+P4)
- Head ache (P1+P3)
- Arthritis (P2)
- Suppleness (P4) etc.

Use P1 when pain has been located.

For long-term treatment use P2.

P3 BURST for non-focused neck pain.

P4 removes the waste products in the neck if it has been immobilized for a long period.

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P2	TENS Long term pain relief	Tingling - Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
P4	Muscle massage	Visible contraction	10 min ⌚
		Electrode size: 50 x 50 mm 50 x 90 mm	

Back

Indications:

- Back pain (P1+P3)
- Scoliosis (P1+P4)
- BWS syndrome (P1+P3)
- Bilateral radiation (P1+P3)
- Dysmenorrhoea (P1)
- Labor pain (P1)
- Slipped disk (P1)
- Weak back muscles (P6)
- Suppleness (P4) etc.

Back pain & muscle insufficiency



Lower back pain & dysmenorrhoea



If reinforcement of muscles is needed, use P6 on both channels. In order to get the antagonist-synergist movements try treatment for the stomach (page 18)

The area above Os Sacrum is a junction of the sensory nerve pathway for the lower back and the abdomen.

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
P4	Muscle stimulation	Visible contraction	30 min ⌚
P6	Muscle stimulation	Visible contraction	10 min ⌚
♂		Electrode size: 50 x 50 mm 50 X 90 mm	

Shoulder

Shoulder Subluxation


Shoulder Pain



Indications:

- Rheumatism (P1+P3)
- Subluxation (P1+P4)
- Shoulder dislocation (P1+P4)
- Shoulder sprain (P1)
- Arthritis (P1)
- Frozen shoulder (P3 + P4)
- Suppleness (P4) etc.

If the shoulder feels cold, P3 is particularly beneficially as BURST stimulation increases the blood circulation

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
P4	Muscle stimulation	Visible contraction	30 min ⌚
		Electrode size: 50 x 50 mm	


Elbow

Elbow pain &
epocondylitis lateralis



Indications:

- Rheumatism (P2)
- Tennis elbow (P2+P3)
- Golf elbow (P2+P3)
- Sports injuries (P1)
- Arthritic pain (P1)
- Pain radiation (P3)

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P2	TENS Long term pain relief	Tingling - Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
		Electrode size: 50 x 50 mm	

Arm, Hand and Wrist

Pain relief &
Hand Paralysis (Apoplexy):

Indications:

- Tendonitis (P1+P3)
- Carpal tunnel (Mouse Are) (P1+P3)
- Rheumatism (P2)
- Paralysis (P4)
- Spasm and spasticity (P4)
- Apoplexy (P4)
- Suppleness (P4) etc.



Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P2	TENS Long term pain relief	Tingling - Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
P4	Muscle stimulation	Visible contraction	30 min ⌚
♂		Electrode size: 50 x 50 mm	

Groin



Indications:

- Sports injury (P1)
- Overworked muscles and ligaments (P1+P2)
- Dysmenorrhoea (P2+P3)

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P2	TENS Long term pain relief	Tingling - Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
♂		Electrode size: 50 x 50 mm	


Quadriceps

Quadriceps insufficient



Indications:

- Atrophy – apoplexy (P4)
- Atrophy – short term injury (P5)
- Low back radiating pain (P3)
- Sciatic pain with impaired L4 sensibility (P3)
- Spasm and spasticity (P4)
- Reinforcement (P6)
- Fitness (P6)
- Suppleness (P6) etc.

Programme	Type of stimulation	Intensity	Treatment time
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
P4	Muscle stimulation	Visible contraction	30 min ⌚
P5	Muscle stimulation	Visible contraction	20 min ⌚
P6	Muscle stimulation	Visible contraction	10 min ⌚
		Electrode size: 50 x 90 mm	

Knee & Ankle

Knee pain



Pain at the joint of the ankle




Indications:

- Rheumatism (P2+P3)
- Sports injuries (P1)
- Sprain (P1)
- Gonarthrosis (P2+P5)
- Ligament injury (P1)
- Arthritis (P2+P3)
- Ankle sprain (1)
- Ischaemic pain in the foot (P1+P3)
- Contusion (P1) etc.

If the pain is located on the inner side of the leg, use the electrode placement shown on the left knee

At lateral pain, place the electrode as on the right ankle; left ankle shows the electrode placements to treat medial pain

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P2	TENS Long term pain relief	Tingling - Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
P5	Muscle stimulation	Visible contraction	20 min ⌚
		Electrode size: 50 x 50 mm	

Sciatic Pain



Indications:

- Sciatic pain
- Post-Herpetic neuralgia of sciatic nerve
- Arthritic pain of sacroiliac joint

Channel A:

Negative electrode (black) placed posterior on the upper thigh and positive electrode (red) below poplitea crease.

Channel B:

Bilaterally at L5 –S1 level.

Programme	Type of stimulation	Intensity	Treatment time
Channel 1:			
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
Channel 2:			
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
♂		Electrode size: 50 x 50 mm	

Pull & Cardiovascular Insufficiency


Ankle plantar flexors, fibre pull & cardiovascular insufficiency

Indications:

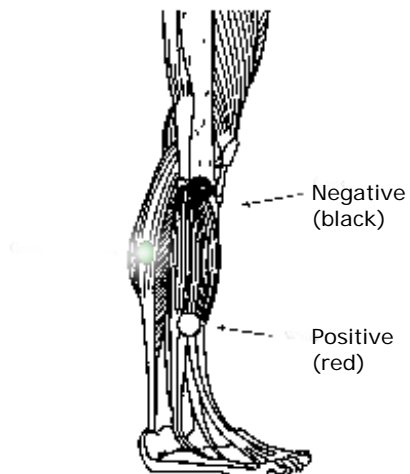
- Fibre pull (P1+P5)
- Sports injuries (P1+P5)
- Claudicatio intermittens (P3)
- Thromboplebitis (P1+P3)
- Sciatica (P1)
- Orthopedic (P5)
- Arthritic (P1)
- Traumatic injury (P2+P5)
- Hamstring (P5) etc.

Treatment dealing with fibre pull can be carried out everywhere on the body. Electric muscle stimulation removes the metabolic waste products and improves condition for progress of healing.



Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P2	TENS Long term pain relief	Tingling - Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
P4	Muscle stimulation	Visible contraction	30 min ⌚
P5	Muscle stimulation	Visible contraction	20 min ⌚
		Electrode size: 50 x 90 mm	


Dorsiflexion (Drop Foot) & Peroneal Nerve Flexion Reflex



Indications:

- Drop foot
- Re-education
- Multiple sclerosis
- CVA
- Orthotic substitution
- Dominating extension
- Spinal cord lesion
- Cerebral palsy
- Spasticity

Place negative electrode (black) high and lateral on the foreleg over the muscle and away from the tibia

Programme	Type of stimulation	Intensity	Treatment time
P5	Muscle stimulation	Visible contraction	30 min ⌚
		Electrode size: 50 x 50 mm	


Leg Ulcer

Indication:

- Circulatory disturbances
- Venous stasis
- Wound healing
- Post-surgical pain
- General pain



Notice! The electrodes may not get in contact with any wound tissue.


Programme	Type of stimulation	Intensity	Treatment time
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
		Electrode size: 50 x 50 mm	

General Pain Treatment with BURST



Indications:

- General pain
- Tinnitus
- Raynaud´s phenomenon
- Fibromyalgie
- Circulatory disturbances
- Gout
- Cold hand etc.

Programme	Type of stimulation	Intensity	Treatment time
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
		Electrode size: round Ø32 mm 50 x 50 mm	


Muscles of the Stomach

Indications:

- Insufficient stomach muscles
- Post partum
- Constipation
- Fitness
- Suppleness etc.



In order to get a comfortable stimulation of the large stomach muscles, it is recommendable to use the 50 x 90 mm electrodes for tightening-up and shaping the muscles.


Programme	Type of stimulation	Intensity	Treatment time
P5	Muscle stimulation on both channels	Visible contraction	30 min ⌚
		Electrode size: 50 x 90 mm 50 x 50 mm	

Head



Indications:

- Trigemius (P1)
- Sinusitis (P1)
- Frontal headache (P1)
- Facials paresis (P5)

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P5	Muscle stimulation	Visible contraction	20 min ⌚
		Electrode size: round Ø32 mm	

Angina Pectoris

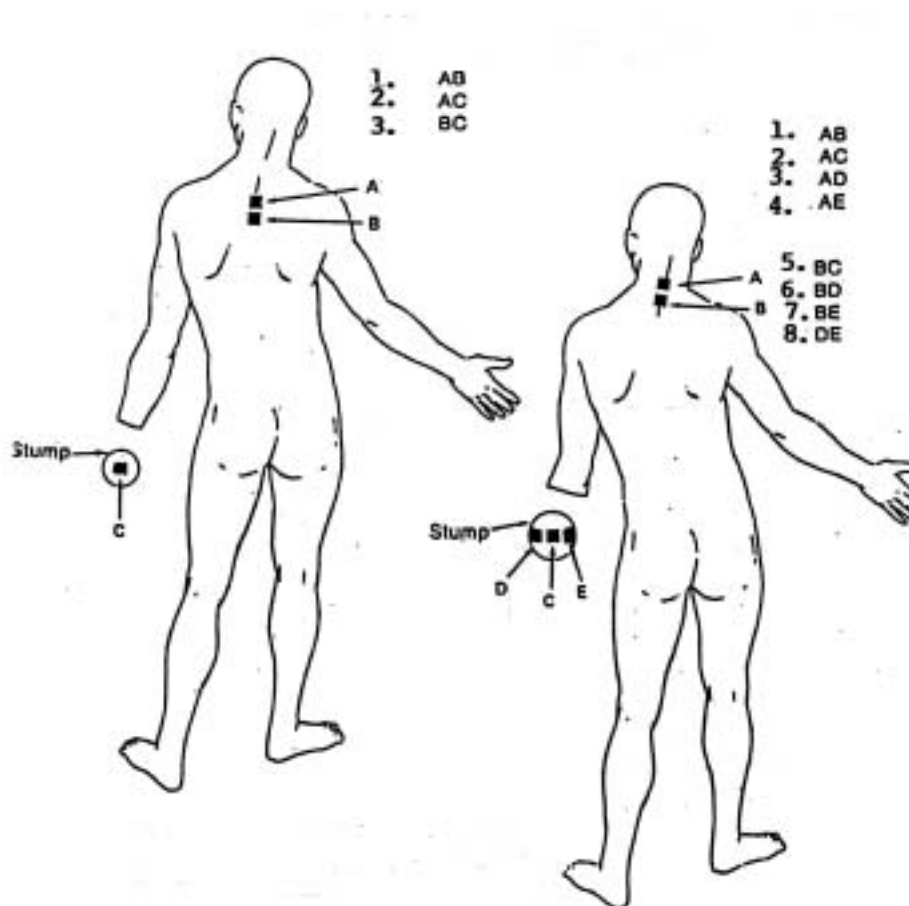
Indications:

- Angina Pectoris (P1)
- Radiating Pain (P1)



Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
♀		Electrode size: 50 x 50 mm	

Phantom Pain



Electrodes can be placed on painful trigger points, correlated to peripheral nerves and spinal cord segments that innervates the painful area (P1). Use the combinations of the letters. For general pain management the BURST therapy (P3) as shown at page 17 is recommendable.

Programme	Type of stimulation	Intensity	Treatment time
P1	TENS Acute pain relief	Tingling – Just below pain threshold	30 min ⌚
P3	BURST Chronic pain relief	Perceptible contraction	45 min ⌚
♂		Electrode size: 50 x 50 mm	

Notes for Settings Selected

Channel A	P1 Tens1	P2 Tens2	P3 Burst	P4 Muscle 1	P5 Muscle 2	P6 Muscle 3
Frequency	Hz	Hz	Hz	Hz	Hz	Hz
Pulse width	μ s	μ s	μ s	μ s	μ s	μ s
Rise time				sec	sec	sec
Stimulation time				sec	sec	sec
Fall time				sec	sec	sec
Resting period				sec	sec	sec
Treatment time	min	min	min	min	min	min

Channel B	P1 Tens1	P2 Tens2	P3 Burst	P4 Muscle 1	P5 Muscle 2	P6 Muscle 3
Frequency	Hz	Hz	Hz	Hz	Hz	Hz
Pulse width	μ s	μ s	μ s	μ s	μ s	μ s
Rise time				sec	sec	sec
Stimulation time				sec	sec	sec
Fall time				sec	sec	sec
Resting period				sec	sec	sec
Treatment time	min	min	min	min	min	min

Electrode Placement:

