



Hyperthermia
Radiative Diathermy



Delta/Sigma





Delta/Sigma

Intervention area

Musculoskeletal system

Mode

Hyperthermia/thermal shock

Effect

Controlled thermal stimulation for therapeutic purposes

Delta is a device for hyperthermia, a unique method that enables to heat a musculoskeletal district at therapeutic values while controlling the depth and intensity of thermal stimulation. The effects induced by this method lead to a strong local hyperthermia that triggers biological processes aimed at alleviating pain and inflammation and at activating a powerful regenerative and repairing stimulus.

The association of an electromagnetic source of endogenous heat with a surface thermostating system enables to programme the treatment by selecting the most suitable depth and intensity parameters for each case. The combination with a heat dissipation handle (chryothermia) that distinguishes Sigma, extend and amplify the indications and effects of hyperthermia.

Delta

Hyperthermia stimulation with automatically controlled depth and intensity of the effect

The high technology and the sophisticated control system of Delta hyperthermia ensure efficient, safe, repeatable and really operator-independent treatments for most musculoskeletal disorders.

Its measurement systems allow to administer and control the effect of the stimulation at the desired depth, as to guarantee an effective reduction of pain and inflammation.

The precision of the energy administration enables to program the most adequate thermal increase in order to activate a strong regenerative and reparation stimulus (due to a moderate and controlled effect of cell killing) and to shorten the healing times.

The certainty of "pointing at and striking" the targeted tissue with the right dose of energy makes this method unique and complementary to all other dyathermias.

The minimum commitment of resources and the absence of consumables make the daily work management easier and reduce the operating costs by shortening the investment return times.

The reduced exposure risks are a great advantage for both the patient and operator.



Delta/Sigma

Physical therapy at its best

Treatment of the main sub-acute and chronic pathologies of traumatic, inflammatory and degenerative origin of the musculo skeletal system

Double source to generate and control the in-depth hyperthermia: electromagnetic plane wave system at 433.92 Mh and power up to 100W, cutaneous thermometric system with controlled temperature recirculating water

Measurement and control of the therapeutic temperature and of the energy delivered

Energy automatic control according to the measurements recorded

Possibility to adjust depth and intensity of the administration to ensure the adequate dosage of energy for each tissue and patient

Preset protocols and possibility to select manually the parameters with consistency check

Minimisation of the risks of exposure thanks to the distilled water bolus

Scientific evidence

Medical certification

Sigma

Hyperthermia stimulation and transdermal Cryotherapy, controlled dynamic thermal shock

Peculiarities

Sigma combines the features of Delta Hypothermia system with cryothermia, which subtracts heat from the tissues exogenously by contact. The combined use of hyperthermia and cryothermia (thermal shock) within the same therapeutic session – with appropriate times, sequences and protocols – broadens the range of applications and increases the effects of vascularization, reduction of pain and inflammation, aiding the recovery of the joint range. The three effects –Hyperthermia, Cryothermia and Thermal Shock – are individually adjustable both as to depth and intensity.



Delta/Sigma



Filippo Magnini, Valentina Vezzali
and Luca Zingaretti with Easytech
Hyperthermia equipment

Technical features

Microprocessor control, operator membrane keypad and display panel are integrated in an adjustable console
Easy automatic set-up mode of the treatment parameters
Applicator arm with automatic friction
Possibility to connect to a computerised workstation

Applicator

Conical horn applicator type
Bandwidth 60 MHz
Diameter of radiating opening 100 mm
Coupling with patient through water bolus

Bolus

Variable volume bolus with thermostated water
High thermal conductivity and very resistant material

Electromagnetic source

Emission power up to 100 W
Work frequency 433.125 MHz
Wave is generated directly in the cutaneous cooling water.
Signalling devices for optical and acoustic notification of the electromagnetic maladjustment
Constant adjustment of the power emitted

Cutaneous cooling system

Integrated superficial tissue cooling system with thermostat controlled liquid in forced circulation
Temperature range of the cooling liquid from 35°C and 41.5°C
Automatic adjustment of the volume of the cooling bag

Skin temperature control system

Copper and constantan thermocouple sensor
Programmable temperature range from 38°C and 42°C

Treatment

Deltatherm differential reading system(licensed) to ensure maximum precision of treatment temperatures: maximum error of 0.2°C
Treatment temperature between 39°C and 44.5°C
Thermal effect depth up to 7 cm

Cryothermia applicator (for Sigma)

Alluminium beveled plate, diameter 50 mm
Direct coupling by thermal conduction
Minimum cold plate temperature: +2°C

Cooling source

Thermoelectric module with Peltier effect +4°C

Power and absorbed power

Voltage and frequency 220 V - 50/60 Hz
Maximum absorbed power 6 A

Overall dimensions and weight

Height (arm at rest): 1180 mm
Width (arm at rest): 500 mm
Depth: 700 mm
Weight: 75 kg

Required environmental conditions

Room temperature: [+10, +40] °C
Relative humidity (without moisture): [0, 75] %
Atmospheric pressure: [700, 1060] mbar

Retail configurations

Delta equipment
Sigma equipment

Standards

Delta e Sigma are compliant with Directive 93/42 CEE

CE 0434

easytech

Back to motion

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