Research Lab

Equipment's Brochure

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Assessments tools
أجهزة القياسات

Biodex Balance
(معمل الاتزان)

Application:

- Fall Risk Screening and Conditioning

- Senior Rehab
- Neuro-rehabilitation
- Vestibular Disorders
- Wellness
- Sports Medicine / Orthopedic
- Concussion Management

Features:

Meeting multiple clinical needs with a single tool

- **Static and Dynamic (SD)** – Offers twelve levels of platform control as well as static force setting.
- **Balance Training** – Includes proprioception and stabilization exercise, range of motion and weight shift exercises.
- **NEW Windows Operating System and Large Display** – intuitive navigation, large touch screen display (15.6") for improved user interface. Can also accommodate external keyboard and a mouse.
- **NEW Microsoft SQL Relational Database** – allows you to easily store and retrieve patient data, multiple tests per patient. Export to Excel® for reporting and analytics.
- **Objective Documentation** – printed colour reports prove need, track progress and documentation outcomes – ideal for insurance reimbursement.
- **Enhanced Sensory Integration Balance Testing Capabilities** – ability to perform a modified version of the Clinical Test of Sensory Integration of Balance (CTSIB) for postural stability, popular for concussion management. Modify existing CTSIB and BESS test parameters or create custom sensory integration protocols.

- **Custom Reporting** – allows entry of unique comments to test results and assignment of specialist codes.
- **NEW Normative Data** – healthy populations stored for test comparison of older adults for fall screening and student athletes for concussion management.
- **Audio Biofeedback** – for cueing successful target hits
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- **Visual Biofeedback** – prompts patients into proper postural and balance control.

- **Multipurpose Connectivity** – Allows connection to larger monitors and LCD projectors to enhance interaction for visually impaired patients.
- **Adjustable Support Handles** – Lock in place for safety or swing away for an unobstructed, open environment for a variety of training activities.
- **Locking Surface** – ensures safe "on and off" patient movement.
- **Mobility** – Transport wheels allow easy relocation between clinic and community for fall screening programs and health fairs.
- **Video and Audio Out** – Bolsters connectivity options to other devices.
- **USB Compatibility** – Accommodates external keyboard, a mouse, printing devices for remote operation and USB memory devices for data transfer and software upgrades.
- **NEW Vibrotactile Feedback** – Enhanced biofeedback for Biodex balance technology.

  Beyond Assessment

  The Balance System SD and BioSway are powerful rehabilitation tools. Both devices not only provide a balance assessment program for concussion management, but also offer multiple rehabilitation training protocols that can be used across a broad scope of athletic populations for general orthopedic and neuromuscular rehabilitation and athletic conditioning.

  Test/training modes include:

  • CTSIB
  • BESS
  • Postural Stability
  • Fall Risk
  • Bilateral Comparison
  • Limits of Stability
  • Percent Weight Bearing
  • Motor Control
  • Weight Shift
  • Random Control
  • Maze Control

Clinical Test of Sensory Integration of Balance (CTSIB)

The Biodex default four condition CTSIB test quantifies postural sway under the following sensory conditions:

Eyes Open, Firm Surface	Provides a baseline. Information available by all three sensory inputs: Somatosensory, visual and vestibular.
Eyes Closed, Firm Surface	Visual not available; somatosensory and vestibular are available. If the athlete performs poorly, the vestibular or somatosensory may be compromised, with an increase in visual dependency.
Eyes Open, Unstable Surface	Somatosensory compromised; visual and vestibular are available. If the athlete performed poorly, visual or vestibular may be compromised, with an increase in somatosensory dependency.
Eyes Closed, Unstable Surface	Visual not available; somatosensory compromised, only vestibular available. Concussed athletes are most likely to present problems in this condition. If performance is reduced beyond normal or baseline readings, the vestibular system may be disrupted.

Spinal Mouse (SM)

(معمل تحليل العمود الفقرى)

Why the Idiag M360 should always be used in back treatment:

→ Easy, reliable and accurate assessment of the spinal geometry
→ Precise data on vertebral column geometry, stability and mobility
→ Optimized, specific back treatment
→ Your treatment success becomes tangible

Diagnostics

- Individual back scan for targeted therapies.
- Optimised treatment outcome and reduced risks.

Therapy monitoring

- Transparent patient information in the form of simple, easy-to-understand graphics.
- Precise data on the spinal column's geometry to document the treatment outcomeز

Neuropack EMG/NCV/EP
Measuring System
(معمل رسم العضلات)

The feature rich Nihon Kohden Neuropack offers efficient EMG, NCV and EP exams with innovative time saving technology Available in a 2 or 4 channel amplifier.

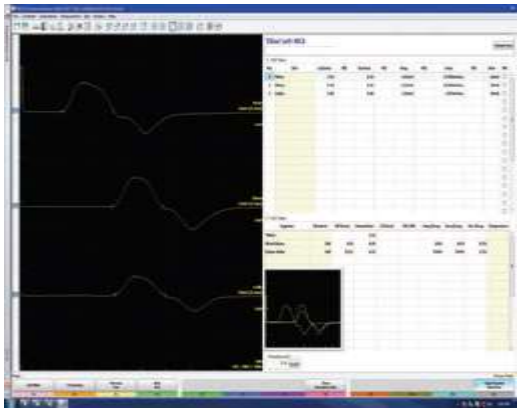
Low Noise, Compact Amplifier:

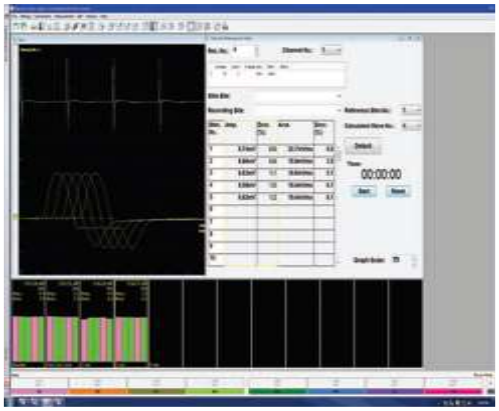
The low noise amplifier speeds up the examination by giving you clean waveforms easily and quickly. Choose from our 2 or 4 channel amplifier (JB-942 or JB-944).

User-Friendly Control Panel

The easy-to-use control panel allows for smooth and efficient examinations. You can change the electric stimulation duration and rate with a simple one-touch operation. The side/set key and muscle/test keys allow quicker EMG and NCS examinations

Nerve Conduction Study





The NCS program lets you perform MCS, SCS and F-Wave in one program. Any number and combination of examinations can be created in your own custom routine protocol by selecting nerve, side and exam. You can change the examination by just clicking the item in the list box, or by clicking a button on the dedicated operation panel of the Neuropack.

Motor NCS/Sensory

- When measuring with the MEB there is no need to manually pick the stimulation site before starting the recording. The software does this automatically for you and, if necessary, it can be easily changed.
- Side comparisons and combined motor and sensory tests can be shown in one waveform screen and also have their own dedicated evaluation tables.
- Normative data are shown on the same screen.
- The superimposed waveform in real time is shown at the same time, so you can easily compare the amplitudes of all stimulation sites and thus judge the quality of your stimulation

Repetitive Stim

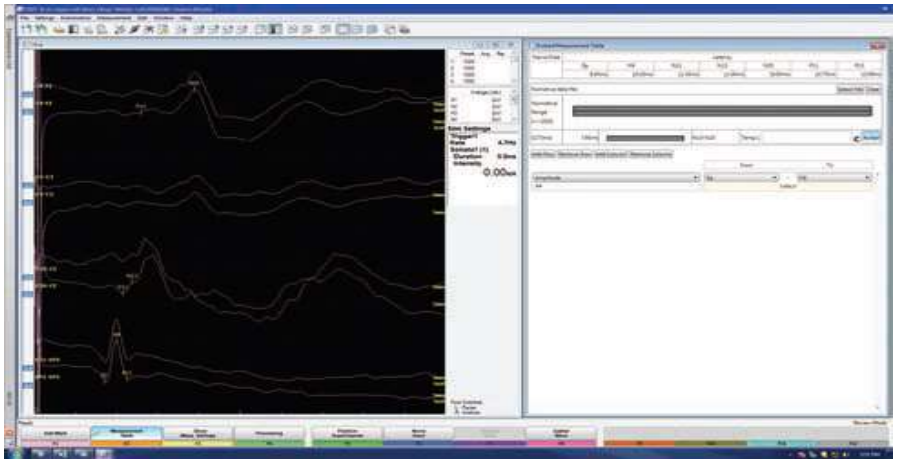
- The amplitude of each sequence is displayed as a bar graph on the same screen. You can see the summary of the repetitive stimulation study at a glance. The waveform of each sequence can be displayed by clicking the corresponding bar graph.
- Up to 12 sequences of stimulation patterns can be set for one automatic measurement (automatic sequence function).
- Stimulation can be done with either high or low frequency or combined in the same protocol.

Evoked Potentials

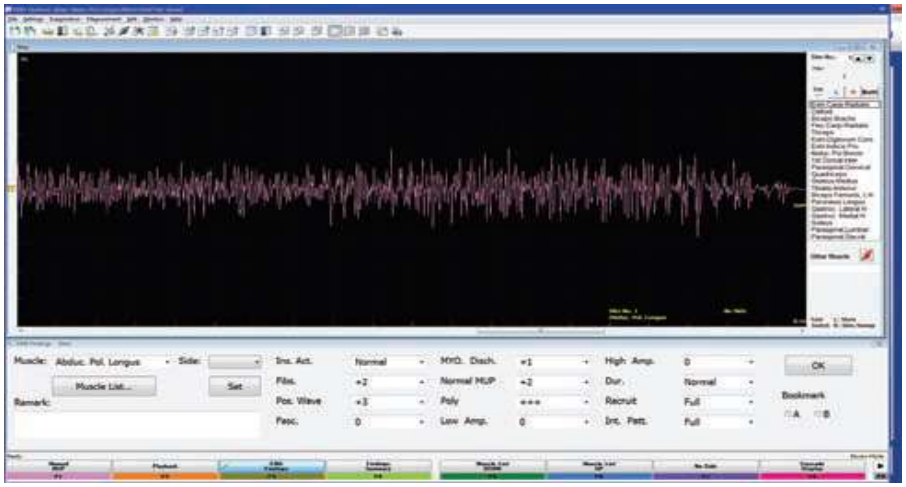
Standard SEP

examination protocols are:

- SEP (somatosensory evoked potential)
- SSEP (short-latency SEP)



Electromyography (EMG):



Routine EMG Program

The routine EMG program utilizes auto MUP detection and classification,

and real time turns/amp analysis. A functional and sophisticated findings screen meets various needs in clinical use by easy and smooth operation.

Interference

Turns/amp measurement is automatically performed. The measurement result is displayed at every one second on the turns-interval histogram, turns/amp histogram and turns/amp graph. The turns/amp normative data of several muscles are installed as default settings and its normative area is displayed in the turns/amp histogram. You can easily recognize

whether or not the measuring waveforms are in the normative range.

Quick Display

You can easily switch between four measurement modes that you can define freely—for example for insertion activity, motor unit detection or turn/amplitude analysis or interference—by pressing a button at the bottom of the screen or on the control panel.

MUP Analysis

MUP waveforms are automatically detected and classified into groups of similar shaped MUPs. MUP measurement result (duration, amplitude, phase, turns and firing rate) are shown next to the waveforms or in a dedicated summary screen.

The averaged MUP of the same MUP groups are calculated and displayed with the numeric data.

EMG Playback/EMG Player

You can also easily review any acquired waveform with sound after measurement by clicking the EMG player button. This tool lets you play back EMG files with sound on a review station for presentations and lectures.

- Display up to 600 sec of EMG with sound
- Sweep speed, sensitivity, and filter settings can be changed afterwards; a great function for teaching purposes
- Compressed/cascaded waveform display

Hand dynamometer with LCD
(baseline hydraulic)
دينامومتر اليد

Digital Absolute Axis Goniometer
جهاز القياس الرقمي لمدي الحركة

Pressure biofeedback Stabilizer
مثبت الضغط الارتجاعي البيولوجي

Pulmonary Function Testing Unit
SPIROSTIK
(معمل تاهيل مرضى الجهاز الدورى و الجهاز التنفسى)

Company : Geratherm respiratory
Made in: Germany

Description:

The Medical product Spirostik is a Desktop Spirometry Device which consists of a Desktop housing with integrated computer, thermal printer and electronics. For the flow measurement the proven Spiraflow (flow sensor) and handle are used. The System comes complete with the Blue Cherry diagnostic platform; this software allows the measurement of all standard spirometry parameters including FVC, SVC and pre/post bronchodilator testing. It is also equipped as standard to provide a trend report for an individual subject.

Uses:

- Used for the measurement and evaluation of flow volume curves, volume time curve and other associated parameters.
- Extensive lung examination for patients with dyspnea.
- Differential diagnosis of restrictive (e.g. asthma or obstructive respiration disorders (COPD).
- Assessment after chest or cardiac surgery.

Body weight scale Beurer BF 100

ميزان تحليل الجسم

Olympus Trinocular (LED) Microscope with Digital Camera

- ✓ Microscope frame with integrated LED illumination, Quadruple nosepiece, fixed large mechanical stage (travelling range 76 X 30mm) with right hand low drive control and specimen holder for one slide. Built-in Abbe condenser with NA 1.25 and aperture stop.
- ✓ Coaxial coarse and fine focus, complete stroke 15mm.
- ✓ Fine stroke 300 um/rotation, graduation 2.5~nn.
- ✓ Torque adjustment for coarse focus knob and stage focus lock mechanical (Screw type). Attached Trinocular tube with 30° inclinations, rotatable through 360 degrees' inter-pupillary distance adjustment 48-75nun and diopter adjustment on the left and right sleeve.
- ✓ Wide range power supply (ACl00-240 V 50/60 Hz 0.4 A) and manual are included.

- ✓ All in 1(HDMI+USB+SD card) C-mount camera with Sony high sensitivity CMOS sensor;
- ✓ Simultaneous HDJVII & USB output;
- ✓ Built-in mouse control;
- ✓ Built-in image capture & video record to SD card;
- ✓ Built-in image & video browsing, display & play;
- ✓ Ultra-Fine color engine with perfect color reproduction capability(USB);
- ✓ Can burn seal bar and make calibration

Animal House

بيت الحيوان

Treatment Tools

أجهزة علاجية

High Power Laser

ليزر عالي الطاقة

LAZR-207 / 215 / 115 W (LAZR-207) / 15 W (LAZR-215 & 115) High Power Laser Therapy Unit with 2 Wavelength Modes, COMBINATION (810 + 980 nm) and SINGLE 1064 nm)

- **LAZR is supplied with ITO carrying case and all necessary accessories**

 Easy to transport all necessary items to have complete therapy.

Features

• INTERACTION BETWEEN POWER AND DEPTH
• CHARACTERISTICS OF WAVELENGTHS
• CONTINUOUS EMISSION MODE
• MULTI-TREATMENT EFFECT
• MULTI-EMISSION MODE
• INNOVATIVE "E2C" EMISSION MODE
• PATHOLOGY LIBRARY
• PROTOCOLS FOR EFFECTS
• Scan X MODE and more

Therapeutic Indications

Acute pathologies:

– Tendinopathies

– Muscle lesions

– Distortions and dislocations

– Post-traumatic edemas

– Synovitis and bursitis

– Osteochondral lesions

Degenerative and chronic pathologies:

– Osteoarthritis

– Degenerative chondropathies

– Fibromyalgia syndrome.

Gymna Cryo flow ICE-CT

العلاج بالتبريد

The effects of cryotherapy

1-Local anesthesia (analgesia)

2- **Anti-inflammation**

3- **Neurological effects**

4- **Vasomotor reactions**

RADIAL SHOCKWAVE RSK-600

الموجات التصادمية

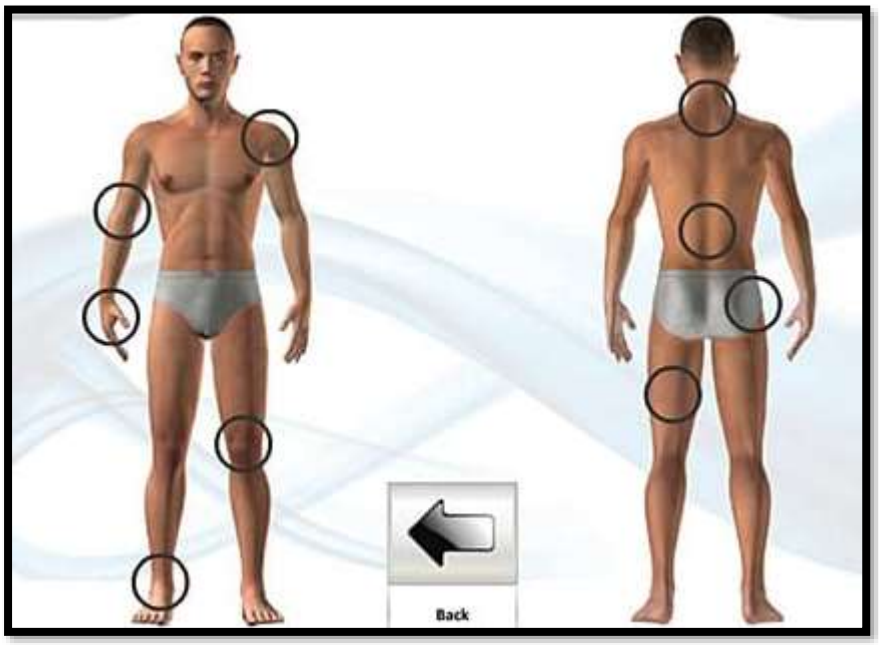
Radial Shock Wave Device, a new era in shock wave therapy

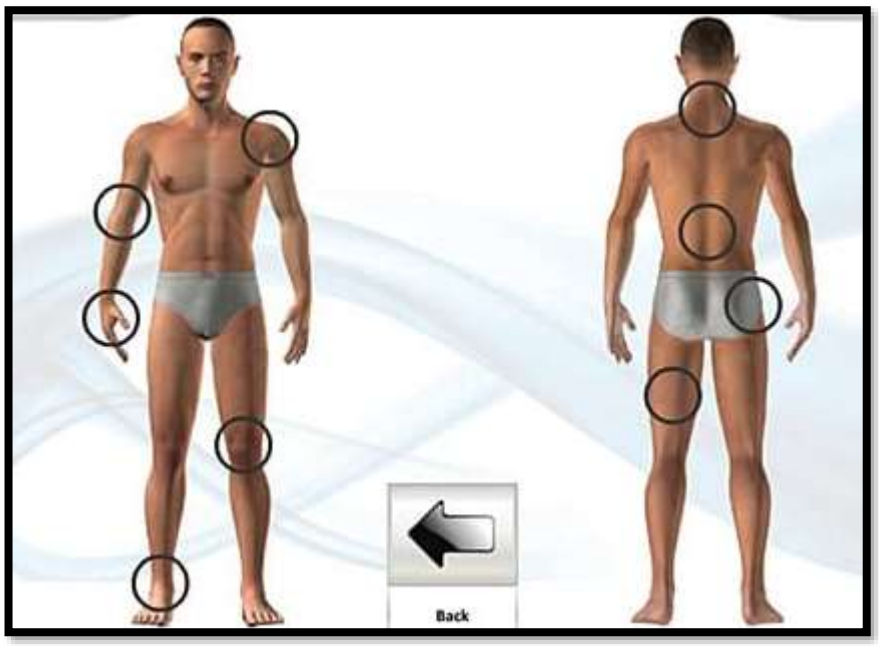
Features

5 MILLION SHOTS GUARANTEED

The innovative electromagnetic generator guarantees to generate up to 5,000,000 shots.
RSK-600 boasts excellent durability allowing for a quick and secure return on investment

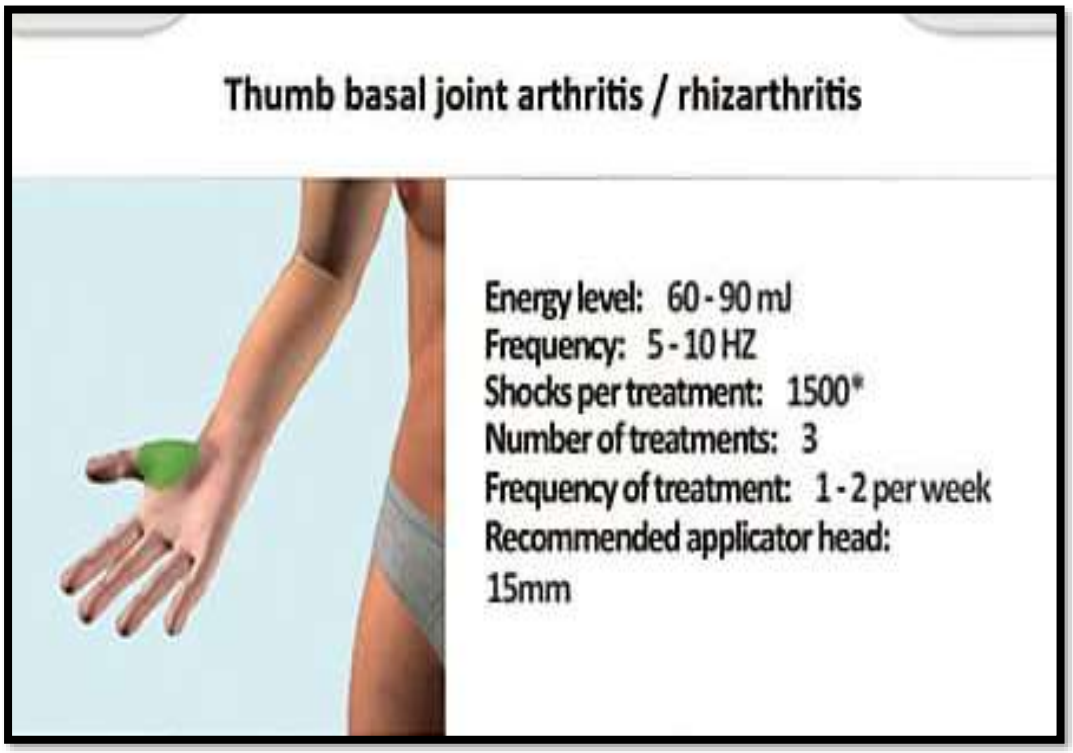
INTERACTIVE PATHOLOGIES



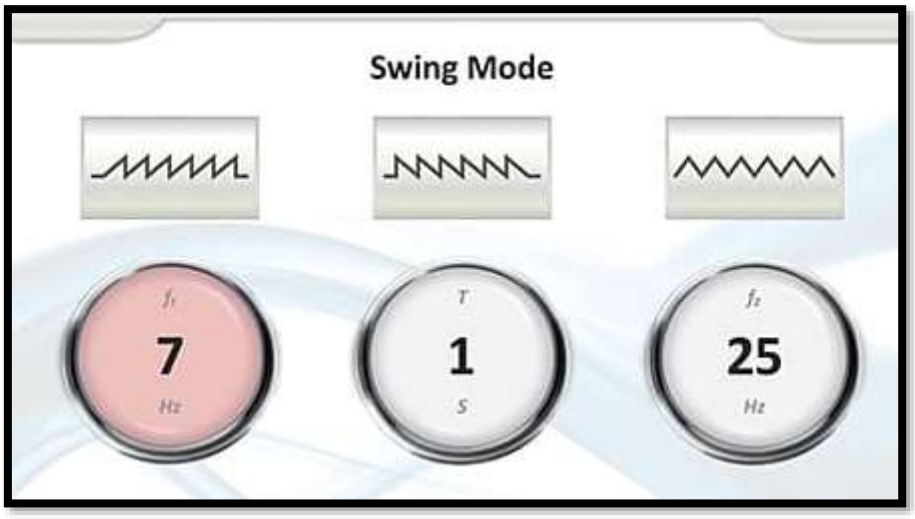


RSK-600 contains a large interactive database containing over 60 pathologies which guides the operator through the treatment. 3D illustrations and step-by-step explanations provide clear and simple instructions for the operator, guaranteeing reliability and precision starting from the very first use.

3D PROTOCOLS BY PHASES



INNOVATIVE SWING MODE



The innovative Swing Mode allows us to set a variable multi frequency shockwave treatment. The user could set start frequency, end frequency, time duration and the swing mode shape. This technology makes RSK-600 an even more powerful and flexible tool.

RSK-600 creates unique shockwave pulses by using a projectile 5 times heavier than standard air-pressure systems and a reduced final velocity upon contact with the applicator. The lower peak and longer rise time minimize the stinging, painful sensation normally related to this therapy.

LESS PAIN, SAME ENERGY! ULTRA SOFT TECHNOLOGY!

Specifications	
Power supply	AC 100–240 V, 50/60 Hz
Power consumption	250 VA
Display	Full-color, 5.7" LCD touch screen
Safety class according to IEC 60601-1	Class I, Type B
Dimensions	320 (W) x 245 (D) x 130 (H) mm
Weight	main unit 2 kg handpiece 0.95 kg
Output mode	Continuous, Burst, Swing
Output power	50–200 mJ (almost equivalent to 1–5 bar) *Adjustable in step of 10 mJ
Frequency	1–25 Hz
Specific protocols for	Bio-stimulant, Analgesic, Anti-inflammatory, Anti-edema, Tension Relief
Pre-programmed clinical protocols	For over 60 pathologies
Shockwave technology	Compressor–free ballistic radial shockwave with electromagnetic generator


FREQ
GAUSS
FISIOFIELD


Therasonic 460
0.0
W/cm²
00:00
User
Dose
Prot
Setup
Frequency
3 MHz
Mode
CW
Large transducer
Primo
Ultrasound Therapy
EMS

Four-Cell Galvanic Bath

حمام كلفانى رباعى الخلايا

Galvanic bath is an alternative medical treatment (a type of electrotherapy) based on the simultaneous use of water and electric current. The patient lies in a 34 degree Celsius bath, while gentle electric current is passed through his body.

-Galvanic baths are mostly used in the treatment of degenerative diseases such as inflammatory arthritis and problems with the joints. The treatment lasts about 15 minutes.

Technique

-In addition to full galvanic baths, when the patient's body is fully immersed in water, there are also four-chambered galvanic baths (also called four cell galvanic baths), which also combine electrical energy and hydrotherapy, but are used only on the limbs.

-Patient's forearms and lower legs are put in water trays, and electric

current is passed through warm water. This procedure is said to improve
the circulation, reduce pain and was considered especially beneficial for rheumatoid arthritis though no studies have been done to confirm these claims

Galvanic baths technique

-This technique associates the effects of galvanic current and the beneficial effects of warm water (analgesic, vasodilatora and sedative) with the possibility of encompassing a much larger body surface in treatment. Water becomes a mediating medium between electrodes and skin, so the current is distributed over a larger body surface, and the current density becomes smaller, without the risk of burns at the applied intensity.

-Galvanic baths consist of a therapeutic technique in which the patient's limbs are disposed in four/two small reservoir, in porcelain or glass fiber reinforced with polymerized plastic (the modern version), in which case the procedure is called the "quadricellular/bicellular galvanic bath".

-The galvanic bath is provided with an electric stimulator, this provides the continuous voltage required to supply the four reservoirs. Each electrode (in some models even 2) is made of graphite or stainless steel, so the electrical circuit is established through the patient body.

-These electrodes are rectangular in shape, having a thickness of approx. 10 mm, width 60 mm, length 200 mm (for hands – the superior reservoirs) and 400 mm (for feet– the inferior reservoirs.

TYPES OF CURRENT

-Galvanic DC current

-Diadynamic current

There are different currents available for diadynamic therapy:

SM – sine monophasic, one way rectification 50 Hz

SD – sine diphase, two way rectification 100 Hz

SC – sine short period (CP), 1sec MF + 1 sec DF

SL – sine long period (LP), 5 sec MF + 10 sec DF zmena 1 sec

Advantages:

-Removable electrodes

-Sinusoidal and rectangular phase current forms

-Individual electrode control with automatic program sequence

-Microprocessor controlled operation panel with digital display

-provide solutions for various hydrotherapeutic treatments as electro galvanic partial baths, contrast baths and temperature rising arm and foot baths.

Physiological effects:

-The beneficial effects of warm water (analgesic, vasodilator and sedative)

- The hydro massage can produce attenuation of pain and muscle spasm. By the following:

1. Producing vasodilatation.
2. Improving local arterial and lymphatic circulation.
3. Breaking down old adhesions after sprains or fractures.
4. Cleansing and stimulating wounds (low temperature used).
5. Mechanical removing of dirties, dead tissue and pus.
6. Causing regression of inflammatory processes.
7. Reduction of edema and effusion.

-The use of galvanic stimulation uses direct current modalities that

deliver a unidirectional, uninterrupted current flow within the tolerance of the patient and without the destruction of tissue.

- This type of modality can be used to directly stimulate muscle following

a nerve injury, to produce ionic changes within the tissues and decrease edema, or to introduce topically applied medications into the skin (iontophoresis).

-The purpose of this electrical stimulation is primarily for the vasomotor effects, i.e. increased circulation., ions accumulate in the skin. The sensation experienced acts as a physiological stimulus to the sensory nerve endings, producing reflex vasodilatation. These vasomotor effects can assist in resolution of inflammation, relief of pain, and reduction of interstitial edema.

Indication:

-Rheumatoid arthritis

-Musculoskeletal diseases

-Accident rehabilitation,

-Neurological diseases,

-Vascular problems in limbs

Contraindication:

-Metallic implants

-Joint replacements and screws

-Screws at the current pathway

-Infectious diseases

-Fever and acute inflammation,

-Untreated or uncontrolled hypertension,

-Epilepsy

-Acute thrombosis

-Leg ulcers and other skin defects,

-Pregnancy

-Unstable diabetes,

-Severe cardiovascular disease,

-Malignant tumors (at the site of application, elsewhere possible)

-Blood disorder.