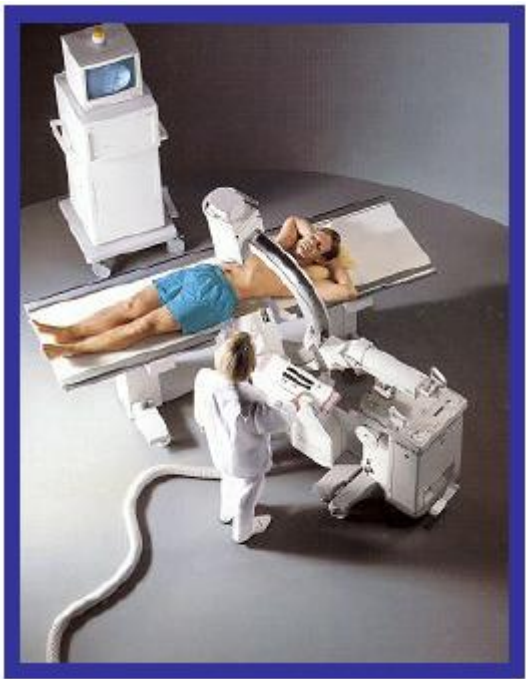
PHILIPS
Litho Diagnost M.E.



Kidney stone breaker equipment

Main features:

Third generation kidney and gall stone breaker equipment operating based on the principle of electro-hydraulic impact wave. The impact wave generated by the equipment provides several advantages against the concurrent machines by using the applied new generation electrode so called new trode.

- Outstanding focus point adjustment
  it results perfect stone collapse
- The adjusted properties of the impulse wave are stable, constant
  it results perfect stone collapse
- The pressure parameters of the short time impact wave are constant
  the smallest damaging effect of the impact wave energy appearing in the tissues in the vicinity of the stone is of great importance from the viewpoint of complication avoidance
- Lower noise level in the operator room with 30%
  it is of great significance for both the patient and the physician
- long lifetime electrode

  - By its technology - opposed to other machines - it provides micro particle collapse, therefore the stone can easily discharge with the urine.
  - By using a low capacity, 40 nF generator the damage of tissues in the vicinity is low
  - The short term impulse wave pressure run-up is also tissue-friendly.
    The impulse wave pressure run-up is 10 ns.

  It is perfectly applicable to of gall stone, urethral stone, gall-stone and orthopedic treatments.

  By virtue of the applied surgical image amplifier, the radiation load exposed to the patient and its environment is minimal. The determination of the location of stone is continuous, by this the treatment is not necessary to stop.
  Application of space technology in the determination of the location of stone.
- the urethral stones identified by ultrasound is performed by an UH unit operating on the principal of GPS, during which the spacial location of the stone positioned on the UH monitor is compared to a point of the equipment as transmitter, after which the equipment demonstrates in a longitudinal unit the data of directing the table movable together with the patient to the focus.

Major advantages of its application:

- Small number of repeated treatment
- Rapid stone discharge
- Minimum anesthesiologic demand (there is no in practice)
- Painless

Statistical data

Frequency of treatment repetition 4.1 %
(Competitors 19 ... 36 %)

90 days of stone free condition after the treatment 86.1 %
(Competitors 64 ... 70 %)

Frequency of complications after the ESWL treatment
Colic 4,6%
(Competitors: 16…39%)
Steinstrasse 3,3%
(Competitors: 4…4,5%)
Urinary obstruction 2,6%
(Competitors: 3…6,7%)
Nausia/Vomiting 40%
(Competitors: 6…14%)

Technical data:

- Power supply: 230 V, 50 Hz, 60 Hz
- Impulse wave generation: with under-water spark discharge
- Impulse wave voltage: 17-28kV
- Diameter of head: 200 mm
- Dimension of treatment focus: 11 x 68 mm on 20kV
- Penetration depth of impulse wave: 45 mm -150 mm
- Impulse wave output: ECG gated, with 1 or 2 impulse wave. 1 or 2 sec with R-wave or at fix frequency.
- T0 gating time ca. 30 ms at the zero transition of the R-wave
- ∆T delay time. 70 ms
- Pressure run-up time: 10ns
- Pressure impulse duration: 300 ns (20 kV)
- Pressure in the treatment focus: 20 MP - 38 MP
- Adjustment pressures: 3-4-6 kP
- Generator capacity: 40 nF
- Noise without patient: 86 dB
- Table dimension: 73*240 cm. Movable, liftable between 75 and 100 cm. Longitudinal movement: +/- 10 from the centrum, diagonal movement +/-10 cm from the centrum.
- Electrode type: ELC124
- X-ray type: BV25Gold surgical image amplifier (stoppable, with video fixation capability)

Component units:

- Head unit
- with ultra sonic monitor
- X-ray monitor
- Image amplifier C-arm
- Control unit
- Operator table

Year of manufacturing: 2001

Applied technology:

Generation of electro-hydraulic wave impact with x-ray and ultra sonic stone position determination.