

MINILITH SL1

Shock wave technology with
a promising future

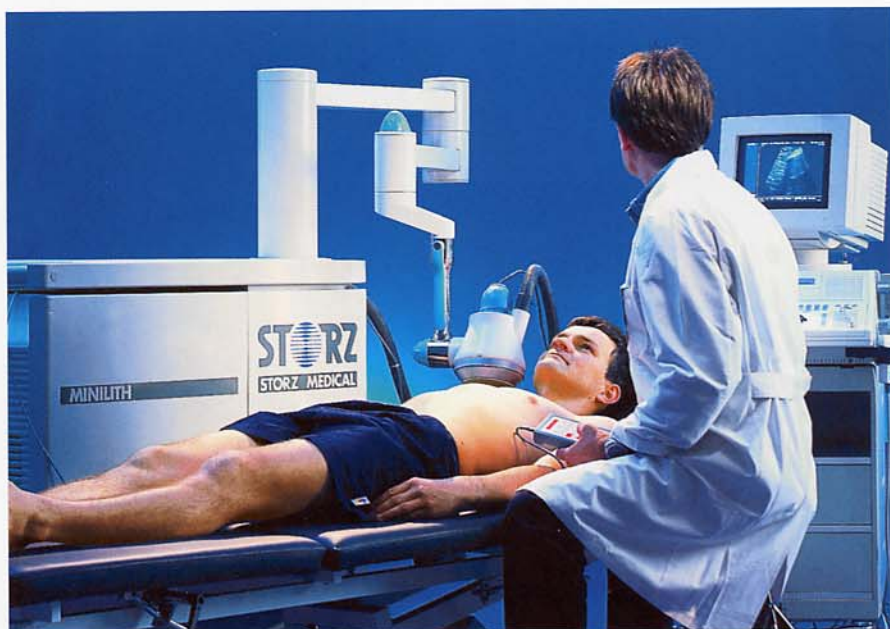


ESWT: New indications for shock waves

Extracorporeal shock wave therapy (ESWT) has proved its suitability for the disintegration of kidney stones in millions of applications. In the meantime, however, ESWT has been extended to a variety of additional indications in orthopaedics, traumatology and rheumatology. In fact, extracorporeal shock wave therapy has led to astonishing results in the treatment of pain in the region of tissue that is sited close to bones and in the therapy of tendopathies/enthesiopathies and pseudarthrosis. Even patients who have undergone conventional treatment without success may gather fresh hope from this type of therapy. ESWT is characterized by the extracorporeal generation of shock waves that are introduced into the patient's body by means of a coupling cushion and precisely focused on the target area.

The major benefits of this type of therapy are quite obvious:

- It is non-invasive.
- It can be repeated.
- It can generally be performed without anaesthesia.
- No side effects of clinical relevance have occurred so far when the therapy was performed by qualified personnel.



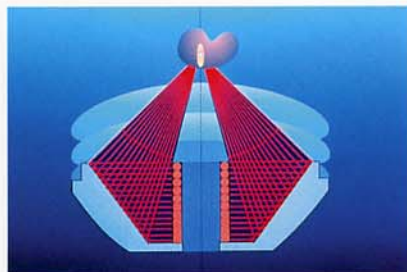
STORZ MEDICAL:

Humane technology - technology for people

The continuous development of extracorporeal shock wave therapy (ESWT) has been at the centre of attention ever since the foundation of STORZ MEDICAL AG in 1987. Our state-of-the-art lithotripters are being used for urological applications all over the world and are appreciated for their astonishing reliability. With the introduction of the MINILITH several years ago, STORZ MEDICAL set new standards even in the relatively new field of orthopaedic and traumatological shock wave therapy, launching the first special-purpose apparatus developed for these indications. It is also thanks to the successful introduction of this new type of therapy that STORZ MEDICAL is the leading manufacturer in this sector today.

The company's success derives from the STORZ MEDICAL shock wave technology, which offers a series of tangible benefits for clinical applications. However, close cooperation with our customers is just as important to us. In fact, it has enabled us to jointly develop the therapy system and put it into practice with exceptional success. In the end, this concerted action has resulted in the introduction of the new MINILITH SL1.

This new type of system allows you to draw on the vast experience gathered by a company that is not only the leading manufacturer in the market but that also offers the most advanced technology in this sector. With the MINILITH SL1 you can be certain to have a fully developed and proven system at your disposal that is tailored to an unequalled variety of different indications. Rest assured that with the MINILITH SL1 you will be well prepared for all therapies you may be confronted with today and in the future.



Patented STORZ MEDICAL electromagnetic cylindrical source and parabolic reflector with central opening for in-line ultrasound and X-ray localization.



MINILITH SL1 the optimum solution for a variety of indications

Extracorporeal shock wave therapy is generally resorted to when conventional treatment methods have reached the limits of their effectiveness. When refractory diseases no longer respond to injections, massages, radiotherapy and other types of treatment, shock waves are often the only rescue for patients who would otherwise have to undergo surgery. Successful results have so far been obtained when applying shock waves to treat the following indications:

- tendinosis calcarea
- epicondylitis radialis and ulnaris
- heel spur
- pseudarthrosis and retarded union of fractured bones.

Apart from orthopaedics and traumatology, shock waves can also be applied in the fields of otorhinolaryngology (for the treatment of stones in the salivary glands) and urology.

High-precision shock wave therapy

Shock waves are applied to a delimited target area, with the process being precisely monitored by means of an ultrasound system. The new therapy arm, which is characterized by its astonishing mobility, allows the most varied anatomical regions, from the shoulder to the heel, to be easily coupled to the therapy source without having to move the patient.



The penetration depth of the shock waves triggered by the MINILITH can be varied in order to allow all therapy regions, from the epicondyle up to the pseudarthrosis on the trochanter major, to be reached. Owing to the exceptional focussing accuracy of the cylindrical source, the shock waves precisely hit the target area without causing damage to the surrounding tissue.





The grid scan technique developed by STORZ MEDICAL ensures that the target area can be scanned step by step. The shock waves are moved over the treatment zone with maximum precision, which, again, avoids damage to the surrounding tissue and improves the results of the therapy.

Ready to plug in and use

All you have to do when installing the MINILITH is to plug it in. Owing to its compact design and its outstanding mobility, it can be moved from one place to another and from clinic to clinic.

Proven technology: the key to success

The shock wave technology employed determines the result of the therapy, whereas ergonomic features decide whether you are satisfied with the system or not.

The shock wave source is the motor of an ESWT apparatus, in other words, the core element that determines the efficiency and reliability of the system and thus the success of the treatment. The cylindrical therapy source developed by STORZ MEDICAL allows optimum results to be obtained with regard to all parameters involved, from the pressure and dynamic range up to the energy flux density and the constancy and dosing capability of the shock wave energy applied.

Maximum flexibility

The therapy head is characterized by its unique range of action which allows all target areas, from the shoulder to the heel, to be reached without any difficulties. Since the therapy head is mounted on gimbals, shock waves can be introduced into the patient's body from all



sides, even under adverse anatomical conditions. Hydraulic brakes are provided to lock the therapy head in the desired position.

The crux of the matter: the new scanning system

Provided that the therapy arm is fixed, the shock wave focus can be moved inside the tissue with maximum precision by means of the fine adjustment feature. This represents an essential requirement for the



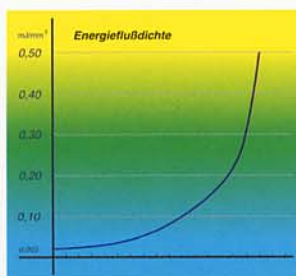
The target area is collimated by using the controls provided on the therapy head. All other functions are controlled by means of the user-friendly mobile control panel.



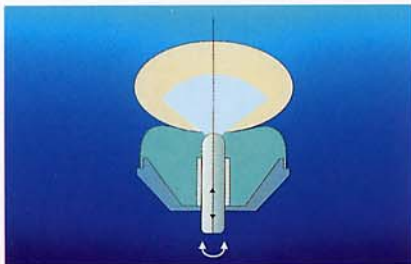
application of the grid scan technique. The target area is scanned point by point without having to disconnect the therapy head and the integrated in-line localization.

The importance of precise energy adjustment

Energy flux densities ranging from 0.005 mJ/mm^2 up to 0.5 mJ/mm^2 allow the entire range of indications, from the elbow to the pseudarthrosis, to be handled. These energy flux densities can be adjusted to 20 different levels. Precise adjustments in the lower energy range ensure that even patients that are sensitive to pain can generally be treated without anaesthesia.



A class of its own: high-precision in-line ultrasound and X-ray localization



The coaxial design of the therapy source featuring a central cylindrical opening offers sufficient space for the integration of a high-precision localization system. The target area can thus be projected in-line, without bone structures interfering with the target area. This allows you to maintain and control the position of the target area throughout the entire duration of the therapy.



Localization systems tailored to your specific requirements

In-line ultrasound localization can be performed by means of different ultrasound systems. You are free to choose between exceptionally compact integrated solutions in order to be free to move when there is limited space available. Or stand-alone systems if the ultrasound unit is intended to be frequently used for routine examinations to be carried out independently of the MINILITH. The workstation thus adapts itself to your specific requirements.



However, the MINILITH is just as suitable for X-ray localization of calcareous deposits or pseudarthrosis. The in-line ultrasound transducer can be easily removed and replaced by an in-line X-ray targeting device. The (optional) mobile C-arm allows the target area to be reliably controlled by means of the proven STORZ TTS (Through The Source) technique. This alternative localization method extends the suitability of extracorporeal shock wave therapy to additional indications and opens up new fields of application for the future.

There is more to customer satisfaction than just a good product

Even the best system and the best technique require regular maintenance. Our team of application engineers provide training for your personnel on your premises in order to make them familiar with this new type of therapy. It goes without saying that we will also be at your disposal at any later date, if need be. The components of the MINILITH are easy to service. However, even if you require specialized help, you can rely on your local STORZ service centre to rectify errors within the shortest of time.

Technical data

CE, in accordance with the MDD directive (IEC 601-1 et seq)

Dimensions (width x length x height)

Transport position 1	650 mm x 990 mm x 1480 mm
Transport position 2	706 mm x 1118 mm x 1307 mm
Weight (without ultrasound unit)	approx. 190 kg
Operating voltage	100/115/230 VAC, 50/60 Hz
Power consumption	max. 2.0 kVA (incl. external devices)
Closed water circuit with integrated water conditioning	

Therapy arm with three joints; freely moveable in three directions

max. diameter of therapy head	155 mm
Range of action	1168 mm
Angular range	max. 330°
Height adjustment	550 mm - 1250 mm
Precise adjustment along two orthogonal axes (optional)	

Adjustable focus pressure* P _f	3 - 70 MPa
Energy flux density* ED _f	0.005 - 0.50 mJ/mm ²
Frequency	1 - 4 Hz
Focal size* f _{x(-6dB)} x f _{z(-6dB)}	2.4 mm x 25 mm
Focal distance	50 mm
Introduction of energy over a large surface area: aperture angle 84°	

Ultrasound localization:

7.5 MHz sector scanner, axially integrated into the shock wave source.
The scanning level can be pivoted by 360°.
The ultrasound unit can be used independently of the MINILITH SL1.

X-ray localization:

optional in-line targeting device

* in accordance with the DGS agreement



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