

**Zimmer**  
MedizinSysteme



**enPuls**  
Version 2.0

## Radial Shockwave Therapy

Efficient, Easy, Mobile



### Special

Electromagnetically accelerated projectile for:

- efficient energy transfer
- less maintenance, longer lifetime
- unique shockwave pulse with higher comfort

### enPuls

Mobile radial shockwave therapy system with ballistic, high-energy pulses. For treatment of biological tissues and structures in various pathologies and medical conditions

Unique, easy-to-use system offering shockwave therapy access to all therapists

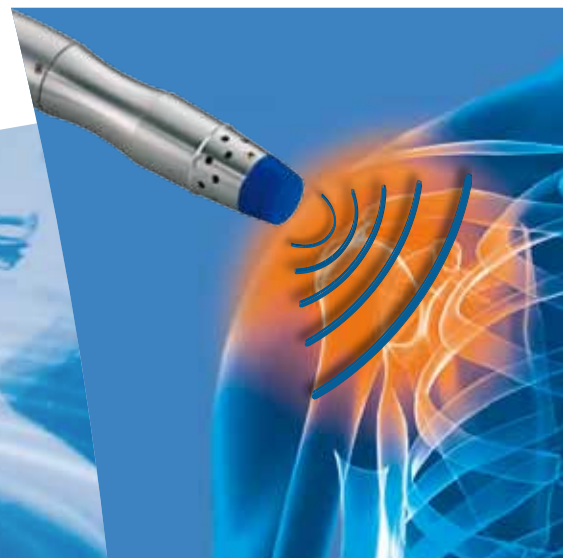
### Principle

A heavy, electromagnetically accelerated, ballistic projectile transfers its kinetic energy to a transmitter head in the handpiece.

The kinetic energy is transformed into impact energy in the applicator head. Shockwaves result and spread out radially from the contact area into the desired treatment region of the body.

# Using modern technology

Innovative access to a non-invasive treatment, without compressor



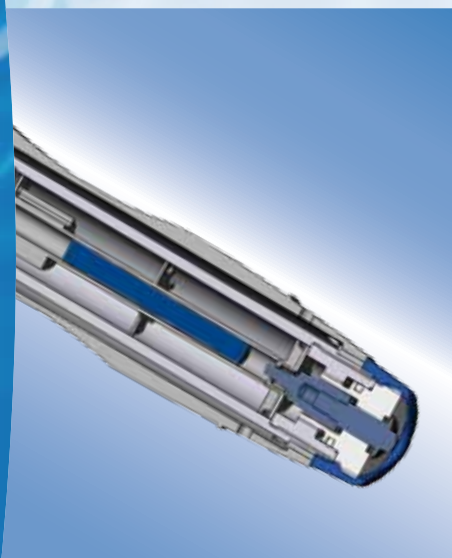
Ballistic radial shockwave

Electromagnetic generator

High mass projectile

Radial tissue dispersion

Efficient down to 35 mm depth



## Unique enPuls "Soft" shockwave

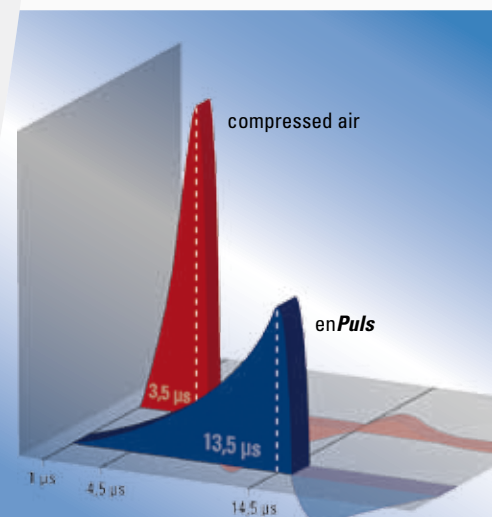
enPuls creates unique shockwave pulses by using a projectile 5 times heavier than standard air-pressure systems and a reduced final velocity upon contact with the applicator.

Through the force of the accelerator and the mass of the projectile, the pulses carry the same amount of mechanical energy, but are more comfortable for the patient than comparative shockwave systems.

The longer pulse rise time maintains the energy without the need for unpleasant high peak pressure amplitudes.

The lower peak and longer rise time minimize the stinging, painful sensation normally related to this therapy. Increased patient compliance results with easier, treatments at higher energy levels.

Less pain, same efficiency – enPuls softshot technology.



# enPuls

## Unique and powerful technology

Innovative, high-tech ballistic system with electromagnetic drive



enPuls & move

enPuls with cart move  
(option)

### Features

- Touch-Screen operated
- Energy levels from 60 to 185 mJ (equivalent 1-5 bar)
- Pulse frequencies from 1 to 22 Hz\*
- Burst mode for Trigger Point Treatment (16 Hz for 0,5 s)
- Positive shockwave counter
- Negative shockwave counter with value preset
- Indication menu with preset treatment protocols
- 1 GB SD-card for memory, updates and service

\* availability awaited for spring 2011

### Advantages

A powerful mechanical energy generator with high precision, perfect control, and low mechanical wear provides for a successful and extended life time

enPuls warrants a minimum of at least 2.000.000 shots per generator – the equivalent of approximately 1000 treatment sessions).

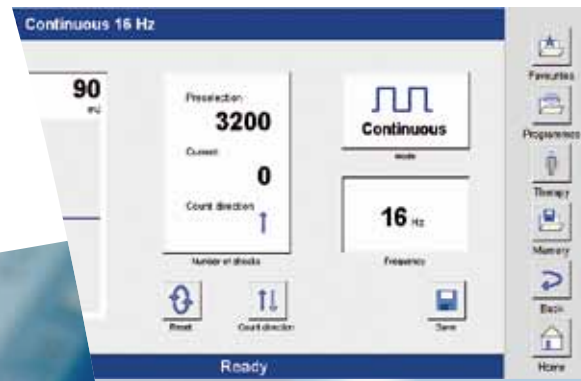
Footswitch operation by multi-directional footswitch, triggers the handpiece and enables the operator to concentrate his hand positioning on the treatment.

An aluminium transport case containing all necessities and accessories offers mobility and convenience for treatment anytime and anywhere.

# Ease of work

Designed for maximum functionality and ease of application

Small  
Mobile  
Versatile  
Powerful  
Intuitive



Large colour touch screen for one-touch operation. Direct access to all necessary parameters of treatment, including a list of indications with guidelines and extensive memory for individually adjusted programmes.

Preset therapy protocols for the major indications with extensive help function, including pictures of the treatment area.

An ergonomic aluminium handpiece with high mass for ample inertia to receive perfect energy transfer to the patient. It also provides optional protection against vibration for the therapist. The design allows for single-handed use, keeping the second hand free to augment therapy situation.

A variety of applicator heads is available with different sizes and shapes. They can be exchanged quickly and easily without tools, providing an optimal selection and adaptation.



## Action equals reaction

Following one of the most basic laws of physics, the applied mechanic action forces the hit body structures to react, almost immediately.

enPuls & Cryo 6



enPuls with Cryo 6  
(option)

### Medical effects

- Immediate, sustaining pain relief
- Increased range of mobility
- Controlled normalized muscle tone
- Change of membrane permeability

### enPuls and Cryo 6 – a perfect team in therapy

Cryotherapy before, while or after treatment lowers the pain threshold, centralises the metabolism and further regulates the muscle tone.

The use of an adjustable airflow with a temperature of  $-30\text{ }^{\circ}\text{C}$  is an ideal chilling agent with perfect control of dosage and application area, delivering the desired effects with high reliability and efficacy.

### General Effects

According to initial theories, cellular destruction resulting from micro-cavitation was believed to have beneficial effects through cellular reorganisation processes.

Current research indicates that the positive effects are not related to cavitation. The mechanical stimulation is able to trigger reactive systems in the cellular structure, even at energy inputs well below destruction level.

The observed tissue reactions and metabolic effects are basically:

- increased metabolism
- altered cell membrane permeability
- improvement of cellular structure
- improvement of tensile stability
- increased cell activity by gene expression
- expression of substance P  
(a growth and pain mediator hormone)

# Application Know How

Quick and easy application with direct feedback of patient

Insertion Tendopathia

Heel Spur / Fasciitis Plantaris

Epicondylopathia radialis / ulnaris

Patella Tip Syndrome / Achillodynia

Myofascial Pain Syndromes

Tibialis anterior Syndrome

Impingement Syndrome

Trigger Point Therapy



## Treatment recommendation



**Indication:**  
Calcific tendinitis of the shoulder, Chronic

### Treatment recommendation

**Frequency:**

10-15 Hz

**Power level:**

120 mJ

**Shocks per treatment:**

2000-2000

**Number of treatments:**

10-15

**Frequency of treatment:**

2 per week

**Recommended applicator head:**

15 mm, after tendinosis 8 mm

Radial and ulnar epicondylitis

Tendinitis of the shoulder / shoulder problems

Calcific tendinitis of the shoulder

Status post muscular injury

Patellar tendinitis

Patellar tendinopathy

## Easy Application

Minimum treatment preparation and maximum efficacy.

The average application consists of one or two treatment sessions weekly, for a total of 6 – 10 treatment sessions.

A treatment session applies approximately 2000 pulses and takes about 10 minutes.

## Especially useful for

- Orthopaedic Treatment
- Orthopaedic Rehabilitation
- Sport Rehabilitation
- Traumatology
- Physiotherapy
- Osteopathy

Unique, easy-to-use system offering shockwave therapy access to all therapists.



## Technical Data / Options enPuls Version 2.0

<b>Technology</b>	Compressor free ballistic radial shockwave therapy-system with electromagnetic generator as projectile accelerator
<b>Power Levels / Energy</b>	4 selectable preset values : 60 / 90 / 120 / 185 mJ (at 16 Hz max. 120 mJ / at 22 Hz max. 90 mJ) Measured and established in comparison laboratory: equivalent to 1 / 2 / 3 / 5 bar
<b>Modes</b>	Frequencies from 1 to 16 Hz and accordingly 22 Hz* 3 Burst modes (16 Hz at 4 / 8 / 12 pulses)
<b>Programmes</b>	7 preset programmes, adjustable
<b>Protocols</b>	More than 25 illustrated preset treatment recommendations
<b>Controls</b>	Colour touch-screen for all software operations Rotary control for Energy level and for frequency Handpiece operation with multi-directional footswitch
<b>Memory / Update</b>	SD-card (2 GB) for indication menu memory, Favourites and adapted programmes (120 places) Error log / Firmware-Update
<b>Dimensions</b>	322 x 235 x 130 mm (L/W/H)
<b>Weight</b>	2.7 kg (without handpiece)
<b>Shockwave Applicator Hand Piece</b>	
Ergonomic, with anodized aluminium casing and fan cooling	
Generator	electromagnetic, integrated
Dimensions	23 cm length, 5 cm diameter (max.)
Weight	0.85 kg (without cable)
Lifetime	Minimum warranty for 2.000.000 shocks
Maintenance	Only necessary when performance drops, not obligatory at a certain amount of shocks. Exchange of generator by service
Applicator heads	Diameters of 6 / 15 (2 pieces) / 25 mm Tool free exchange possibility Minimum warranty of 150.000 shocks per applicator head
<b>Power Consumption</b>	100 / 240 VAC / 50/60 Hz, 5/2,5 A
<b>Conformity</b>	IEC/EN 60601-1 and 60601-1-2
<b>Package</b>	
Aluminium suitcase with enPuls, handpiece, applicator head 6 / 15 (2x) / 25 mm, 10 silicone caps blue, footswitch, mains cable, 1 bottle enPuls lotion, operating Instructions	
<b>Transport / Storage</b>	
short period	-10 °C to +50 °C / 700 hPa to 1060 hPa / 20% - 80% humidity, not condensing
long period	0 °C to +40 °C / 700 hPa to 1060 hPa / 20% - 80% humidity, not condensing

\* availability awaited for spring 2011

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